PUTNAM COUNTY

MULTI-JURISDICTIONAL ALL HAZARDS MITIGATION PLAN

2027 Update

Volume II
Jurisdictional Annexes

Prepared for:
Putnam County
Bureau of Emergency Services
112 Old Route 6, Carmel, NY 10512

TETRA TECH

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1. INTRODUCTION

1.1 BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for local hazard mitigation. Such planning efforts can generate a unified local voice on hazard mitigation, with cross-jurisdictional support for a hazard mitigation plan's recommended mitigation actions. They also help to form working relationships among participants' emergency managers, floodplain administrations, and other development agencies (FEMA 2021). Eligible participants for multi-jurisdiction hazard mitigation plans are local governments defined as follows in Title 44 of the Code of Federal Regulations, Part 201 (Mitigation Planning):

> "Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity." (44 CFR Section 201.2)

In multi-jurisdictional hazard mitigation planning, every participating jurisdiction must meet the federal requirements for local mitigation planning. This means that each jurisdiction must actively participate in the planning process and must officially adopt the plan (44 CFR Section 201.6a(4)).

For the Putnam County Hazard Mitigation Plan (HMP), a Planning Partnership was formed to leverage resources and to meet the federal local mitigation planning requirements for as many eligible governments in the County as possible. Members of the Planning Partnership consisted of representatives from each participating jurisdiction. Putnam County was the lead agency for this planning effort and directed the planning process with assistance from a contract planning consultant (Tetra Tech). A Steering Committee with broad representation across the county provided guidance and direction for the HMP planning process. Each participating planning partner has prepared a jurisdictional annex to this plan.

This chapter describes the Putnam County HMP Planning Partnership, its responsibilities throughout the planning process, and the jurisdictional annexes developed as a result of the plan update efforts. The remaining chapters in this volume of the HMP present the annexes for each participating jurisdiction.

1.2 PLANNING PARTNER INVOLVEMENT

1.2.1 Initial Solicitation

Putnam County solicited the participation of all eligible jurisdictions in the County at the commencement of this project. The following is a list of the jurisdictions that participated in the update process and have met the minimum requirements of participation as established by the County and the Steering Committee:

- County of Putnam
- Village of Brewster
- Town of Carmel
- Village of Cold Spring
- Town of Kent
- Village of Nelsonville
- Town of Patterson
- Town of Philipstown
- Town of Putnam Valley
- Town of Southeast

1.2.2 Planning Partner Expectations

The following list of planning partner expectations was agreed to in each letter of intent to participate:

The **Planning Partnership** is responsible for developing and reviewing draft sections of the hazard mitigation plan, creating the mitigation strategy for their jurisdiction, and adopting the final plan. Members of the Planning Partnership have the expertise to develop the plan and have their jurisdiction's authority to implement the mitigation strategy developed during the planning process.

- Identify jurisdictional representatives to serve as the planning points of contacts. These people were responsible for representing the community and assuring that these participation expectations are met by their community.
- Support the Steering Committee selected to oversee the development of this plan.
- Provide representation at jurisdictional Planning Committee meetings
- Provide data and information about the community as requested by the Steering Committee or the contract consultant, including:
  - Structure and facility inventory data
  - New development and anticipated development
  - Natural hazard risk areas
  - Natural hazard events and losses that have impacted the community in the last five years
  - Plans, studies, reports, and ordinances addressing natural hazard risk
  - Mitigation activity in the community in the last five years, including progress on previously identified mitigation actions.
- Support public outreach efforts in the community, which may include:
  - Providing notices of the planning project on the jurisdictional website with links to a County project website
  - Providing notice of the planning project, the availability of plan documents, and notice of public meetings via available local media (e.g. newsletters, flyers, email blasts, social media, etc.)
  - Advertising and supporting public meetings in the area
  - Supporting outreach to National Flood Insurance Program (NFIP) Repetitive Loss and Severe Repetitive Loss property owners in the community.
- Assist with the identification of stakeholders within the community who should be informed and potentially involved with the planning process.
- Complete data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to the community.
- Involve the local NFIP Floodplain Administrator in the planning process.

- Review draft plan sections when requested and provide comment and input as appropriate.
- Adopt the plan by resolution of the local governing body after FEMA conditional approval.
- Periodically provide the Steering Committee with reports of jurisdictional staff and volunteer labor spent on the planning process.

Under the plan implementation and maintenance protocol established in Volume I of the HMP, it is intended that the Planning Partnership will remain active to support maintenance of the HMP after the plan has been adopted. By adopting this plan, each planning partner agrees to the plan implementation and maintenance protocol. Given that individual commitments change over time, it will be the responsibility of each jurisdiction and its points of contact to inform the County's coordinator for this HMP of any changes in representation.

1.3 JURISDICTIONAL ANNEX PREPARATION PROCESS

Jurisdictional annexes provide a unique, stand-alone guide to mitigation planning for each jurisdiction participating in a multi-jurisdiction HMP. The Putnam County HMP is organized so that there is an annex for Putnam County and for every jurisdiction within the County's borders. This volume of the HMP includes an annex for each jurisdiction in Putnam County, including those that did not fully participate.

Workshops and additional meetings (in person, by email, or by teleconference) to complete the jurisdictional annexes were held with the County, the contract consultant, and the Steering Committee throughout the planning process. Details regarding these meetings are described further in Volume I.

1.3.1 Incorporation of Information from Previous HMP

In order to facilitate the update of the jurisdictional annexes, data from the 2021 Putnam County HMP annexes was transferred to the most current annex format, which has evolved to meet changing federal and state criteria. Clear instructions were provided to the representatives of each planning partner. This transfer of information provided a basis to address the following:

- Changes in local capabilities and vulnerabilities
- The current status of the 2021 HMP mitigation strategy
- A new mitigation strategy to address identified issues and to increase community resiliency

1.3.2 Kickoff Meeting

The County invited all jurisdictions to participate in a planning partner kickoff meeting held on April 21, 2026, to provide an overview of the planning process, including meetings and worksheets that would be used to gather information for annex preparation. Key elements of the worksheets were discussed and subsequently completed by the appropriate jurisdictional personnel for each worksheet. The worksheets were collected, and the information was incorporated into each jurisdictional annex. In the event additional information was needed, the jurisdictional point of contact was contacted to provide more input into their annex.

1.3.3 Hazard Ranking Exercise

At the risk assessment meeting on July 8, 2026, the consultant summarized the findings of the risk assessment for the hazards of concern evaluated in this HMP, including an initial ranking of hazards using the risk-related ranking

methodology described in Volume I. Each planning partner was asked to review the hazard ranking for its jurisdiction and revise as appropriate based on history of events, probability of occurrence, and the potential impact on people, property, and the economy. This exercise familiarized the planning partners with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as "high" for each jurisdiction as a result of this exercise were considered to be priorities for identifying appropriate mitigation actions, although jurisdictions also identified actions to mitigate "medium" or "low" ranked hazards as appropriate.

1.3.4 Mitigation Strategy Workshop

Two in-person annex support meetings were held for Planning Partners to assist in the development of additional actions, foster collaboration between neighboring jurisdictions for mitigation actions, discuss actions that involve cooperation between the County and jurisdictions, and identify steps needed to complete the jurisdictional annexes. These meetings were held at the Putnam County Bureau of Emergency Service facility (112 Old Route 6, Carmel, NY 10512), on July 22-23, 2026. Additional virtual annex support meetings were held throughout the months of April – August 2026 (Refer to Appendix D).

The mitigation strategy workshop was conducted in tandem with the in-person annex meetings on July 22-23, 2026 to support the development of focused problem statements based on the impacts of natural hazards in the County and their communities. These problem statements provide a detailed description of a problem area, including its impacts on the jurisdiction; past damage; loss of service; etc. An effort was made to include the street address of the problem location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements form a bridge between the hazard risk assessment, which quantifies impacts on each community, and the development of actionable mitigation strategies.

The County and the mitigation consultant worked with each jurisdiction to identify clear, implementable mitigation actions and to further support the completion of the jurisdictional annexes. The NYS DHSES Action Worksheet template and instructions are provided in Appendix I (NYS DHSES Planning Standards).

1.4 JURISDICTIONAL ANNEX FORMAT

The jurisdictional annex format is designed to document local compliance with the 44 CFR local mitigation planning regulations. It also achieves the following:

- Providing a locally relevant synthesis of the overall mitigation plan that can be readily presented, distributed, and maintained
- Facilitating local understanding of the community's risk from natural hazards
- Facilitating local understanding of the community's capabilities to manage natural hazard risk, including opportunities to improve those capabilities
- Facilitating local understanding of the efforts the community has taken, and plans to take, to reduce its natural hazard risk
- Facilitating the implementation of mitigation strategies, including the development of grant applications
- Providing a framework by which the community can continue to capture relevant data and information for future plan updates

The following are the elements of the jurisdictional annex.

- **Section X.1: Hazard Mitigation Planning Team:** Identifies the hazard mitigation planning primary and alternate contacts and floodplain administrator. Provides details on which departments were involved in the development of the jurisdictional annex. The widest range of departments, stakeholders, and persons familiar with the jurisdiction should be involved in the development of the jurisdictional annexes. Further detail on participants is provided in Volume I.
- **Section X.2: Community Profile:** Provides a profile of the jurisdiction, including population and socially vulnerably populations.
- **Section X.3: Jurisdictional Risk Assessment:** Provides information regarding each jurisdiction's vulnerability to the identified hazards. Full data and information on the hazards of concern, the methodology used to develop the vulnerability assessments, and the results of those assessments that serve as the basis of these local hazard rankings may be found in Volume I.
- **Section X.4: Growth/Development Trends:** Summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.
- **Section X.5: National Flood Insurance Program (NFIP) Compliance:** Summarizes jurisdiction-specific information related to managing and regulating the regulatory floodplain, including current and future compliance with the NFIP.
- **Section X.6: Jurisdictional Capability Assessment and Integration:** Provides an inventory and evaluation of the jurisdiction's tools, mechanisms, and resources available to support hazard mitigation and natural hazard risk reduction. Tables provide an inventory of the jurisdiction's planning, regulatory, administrative, technical, and fiscal capabilities, its level of participation in state and federal programs designed to promote and incentivize local risk reduction efforts, and its adaptive capacity to adjust to damage and respond to consequences.
- **Section X.7: Mitigation Strategy and Prioritization:** Discusses and provides the status of past mitigation actions and status and describes proposed hazard mitigation actions and prioritization.

Each jurisdiction's annex is a living document that will continue to be improved as resources permit. Continued efforts to maintain the annex will ensure that it remains current and will improve its effectiveness as the key tool, reference, and guiding document by which the jurisdiction will implement hazard mitigation locally.

1.5 COVERAGE UNDER THE PLAN

All planning partners fully met the participation requirements specified by the Steering Committee and have annexes included in this volume. Those that did not meet the requirements will not be able to seek FEMA or state approval at the time of plan submittal, nor will they be eligible to obtain FEMA grant funding. Table 1-1 lists the status of each jurisdiction. Note that participation in scheduled Planning Partnership meetings provides only a partial indication of the level of participation of each jurisdiction. Appendices in Volume I provide details on further participation and meeting attendance.

Table 1-1. Jurisdictional Status

Jurisdiction	Attended Workshops, Meetings, and Calls	Provided Update on Past Projects	Submitted Mitigation Actions for Current Plan	Seeking Approval for Adoption (meets all previous requirements)
Putnam County	X	X	X	X
Village of Brewster	X	X	X	X
Town of Carmel	X	X	X	X
Village of Cold Spring	X	X	X	X
Town of Kent	X	X	X	X
Village of Nelsonville	X	X	X	X
Town of Patterson	X	X	X	X
Town of Philipstown	X	X	X	X
Town of Putnam Valley	X	X	X	X
Town of Southeast	X	X	X	X

2. COUNTY OF PUTNAM

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

2.1 HAZARD MITIGATION PLANNING TEAM

The County of Putnam identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many County departments.

Table 2-1 summarizes the County officials who participated in the development of the annex. Additional documentation of the County's planning activities through Planning Partnership meetings is included in Volume I.

Table 2-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Matthew W. Nadolny, Director of Emergency Management Address: 112 Old Route 6, Carmel, NY 10512 Phone Number: 845.808.4000 ext. 41120 Email: Matthew.Nadolny@putnamcountyny.gov	Name/Title: James G. Oster, Commissioner – Bureau of Emergency Services Address: 112 Old Route 6, Carmel, NY 10512 Phone Number: 845.808.4000 ext. 41101 Email: James.Oster@putnamcountyny.gov
National Flood Insurance Program Floodplain Administrator	
This is administered at the municipal level.	
Additional Contributors	
Name/Title: Ilona Campo, Planner / Climate Smart Coordinator Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Kathleen Abels, President of Putnam County Economic Development Corporation Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Joe Bellucci, DPW Deputy Commissioner Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Matt Covucci, Planning Department Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Sara Servadio, Commissioner of the Department of Mental Health, Social Services & Youth Bureau Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Tara Keegan, Director of Tourism Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Rian Rodriguez, Director of Public Health Method of Participation: Provided information and data for the development of this annex.	
Name/Title: Shannah Siegel, Public Information Officer Method of Participation: Provided information and data for the development of this annex.	

2.2 COMMUNITY PROFILE

2.2.1 Community Classifications

Table 2-2 summarizes classifications for community programs available to Putnam.

Table 2-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	Yes	Bronze	June 21, 2024
NYSERDA Clean Energy Community	Yes	2-Star	June 26, 2024
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

2.2.2 Community Profile

Putnam County is located in the southeastern part of New York State, between the Hudson River on its western border and the New York State-Connecticut border on its east. The County is largely within the New England uplands physiographic province.

Table 2-3 through Table 2-6 note land area, population, and building stock information for the County of Putnam.

Table 2-3. Total Land Area in the County of Putnam

Jurisdiction	Total Land Area	
	Acres	Square Miles
County of Putnam	146,968.4	229.6

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 2-4. Population Estimates in the County of Putnam

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
97,668	100.0%	98,107	100.0%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 2-5. Vulnerable Populations in the County of Putnam

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
18,910	19.3%	4,630	4.7%	2,775	2.8%	9,867	10.1%	6,900	7.0%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 2-6. General Building Stock in the County of Putnam

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
38,632	$26,883,477,324	31,068	$15,974,636,849	6,834	$7,580,822,494	189	$766,679,813	541	$2,561,338,169

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Note: Other = Government, Religion, Agricultural, and Education

2.3 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 Putnam's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

2.3.1 Hazard Area

The hazard profiles in Volume 1, Chapter 6 through Chapter 16 provide detailed information regarding each plan participant's vulnerability to the identified hazards. Chapter 4 (Methodology) and Chapter 17 (Hazard Ranking) provide detailed summaries for the County's risk assessment results and data used to determine the hazard ranking discussed later in this chapter.

Hazard area extent and location maps provided in the jurisdictional annexes illustrate the probable areas impacted within the jurisdiction based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps were generated only for those hazards that can be identified clearly using mapping techniques and technologies and for which the County has significant exposure.

2.3.2 Previous Event History

The history of natural and non-natural hazard events in Putnam is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 2-7 and Table 2-8 provide details on the loss and damage in Putnam during hazard events since the last hazard mitigation plan update.

Table 2-7. Presidential Disaster Declarations History in Putnam

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Putnam
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	All county-run public transportation services were suspended from March 17th to June 29, 2020. Work from home orders, masking mandates and social distancing were put in place and there was a reduced workforce. There also was a non-essential and essential employee differential put in place for safety.
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	The County reported sporadic power outages, and the national guard was called in. Utility issues were also reported sporadically.
August 21-24, 2021	EM-3565-NY	Hurricane Henri	The County did not incur any known or documented damages.
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	The pedestrian bridge at the Veterans' Memorial on Terry Hill Road in Kent (Town owned) was washed away due to flooding from this storm. This was repaired in Fall 2025 with FEMA funding.
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	The County closed for a day in response to this storm on July 10th or 11th, 2023. A small portion of the road near 221 Lake Shore Road (Lake Peekskill) in Putnam Valley also got washed out by this storm.

EM = Emergency Declaration (FEMA)

FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 2-8. Hazard Event History in Putnam County

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Putnam
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	The County reported sporadic trees and wires downed.
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	The County reported sporadic trees and wires downed.
July 9, 2023	-	An intense storm dropped more than 6 inches of rain in Cold Spring and more than 8 inches in Highland Falls, causing severe flooding in Philipstown and at West Point.	The County reported that cars were swept away and bridges, roads, and Metro-North's Hudson Line were all shut down for several days due to damages, debris, and floodwaters.
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	The County reported stormwater collection culvert damage and roadway washouts.
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	The County reported stormwater collection culvert damage and roadway washouts.
January 13, 2024	-	Storms moved into the region with heavy rains, causing snow melt and flooding.	Metro-North suspended Hudson Line service in both directions between Garrison and Beacon. In Cold Spring, the Hudson River flooded West Street, parts of lower Main Street, and New Street.
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	The County reported stormwater collection culvert damage and roadway washouts.
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	The County reported stormwater collection culvert damage and roadway washouts.
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	The County reported stormwater collection culvert damage and roadway washouts.
October 26, 2024	-	Kent Volunteer Fire Department was dispatched to Route 301 and East Boyds Road, between Dixon Road	There are several acres of land around the Sedgewood Club property that were burned in a

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Putnam
		and Peekskill Hollow Road, for a report of a fire on the mountain.	large brush fire, with smoke drifting south toward Westchester and alarming many residents. The fire spread to about seven acres.
July 14, 2025	-	A fast-growing lightning storm hit the area and dumped about 5 inches of rain in the region in less than two hours. This deluge quickly caused rivers to flood and storm drains to become overwhelmed.	The County reported numerous emergency calls received in a short period relating to transformer fires, trees down, road hazards with cobblestone-sized rocks strewn across major roadways from water washout, and foot-deep water in several locations. This forced the temporary closure of several roadways, including Route 22 and Haviland Hollow Road.

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

2.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations, and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 2-9 includes an inventory of critical facilities and infrastructure for the County of Putnam.

Table 2-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Putnam County Humane Society	County Building	Y	Y	2027-PutnamCo-04	-
Putnam County Board of Elections	County Building	Y	Y	2027-PutnamCo-04	County improved grading during renovations.
Records Department	County Building	Y	Y	2027-PutnamCo-04	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

2.3.4 Local Hazard Impacts Assessment

Representatives from the County of Putnam Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 2-10.

Table 2-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	A lot of the dams in the County are privately owned. The County stated that there are a few dam projects that are going on to improve structures.
Disease Outbreak	The Health Department learned a lot during the COVID pandemic. All county-run public transportation services were suspended from March 17th to June 29, 2020. Work from home orders, masking mandates and social distancing were put in place and there was a reduced workforce. There also was a non-essential and essential employee differential put in place for safety. There are some congregated care settings and mass accumulation areas that may be of concern in another disease outbreak setting. The Health department worked with EMS and distributed PPE to schools and municipalities (if any were available, to the general public as well). The Department of Health lacks personnel capacity and suffers turnover and loss of institutional expertise due to grant-funded positions and attrition. This issue compromises the ability of the Department to function to its full potential during hazard events.
Drought	There are a lot of residents on private wells for water and Cold Spring has emergency access to aqueduct. Municipalities are typically more privy to specific this information.
Earthquake	The County overall is experiencing more shakes, but no impacts to infrastructure
Extreme Temperatures	There are two senior centers that are identified sheltering facilities. There is a sheltering list that is verified and updated annually by the Health Department.
Flood	Peekskill Hollow Road (Putnam Valley), going out towards the Hudson River, tends to flood. Stump Pond, located near the Kent Highway Department, directly impacts the Highway Department facilities. The Health Department incurs flooding because the parking lot is graded in towards the building.
Harmful Algal Blooms	The Health Department tracks blooms at public beaches; however, these are typically only recreational related and have not resulted in any illnesses or death.
Severe Storm	Severe storms tend to result in power outages and pending the storm event and power company depends on how quickly power can restored. NYSEG is responsive to power failures. There is also wind damage along trailways that the County is responsible for maintaining.
Severe Winter Storm	The County DPW maintains around 60 miles of State-owned roadway with no issues in clearing their applicable roadways. The County and municipalities reported large salt limitations for the 2025-2026 season. The County is looking at constructing a new salt shed to stockpile salt for the future.
Terrorism	The Threat Management Plan added the NYC water supply, Metro North, and an art institute. There have been recent threats to schools and critical facilities. There was a recent issue at one of the prisons and the County had to go through protocol.
Wildfire	There needs to be better coordination, a lot of different entities own the land within the County including DEC/DEP, land trusts, and municipalities. DPW provides access to DEC/DEP. Kent recently experienced one in October 2024.

2.3.5 Vulnerable Community Assets

Representatives from the County of Putnam Hazard Mitigation Planning Team assessed specific impacts to the assets included in Table 2-11. If a community asset is not present in the County the Planning Team stated, 'Not Applicable.'

Table 2-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	No known impacts	**Area: Concentration of Local Businesses, Major Employers**	No known impacts
Area: Concentration of Residences	Residents along Sprout Brook Road, in Putnam Valley, have reported wet basements and ground water related flooding due to nature of the soil in this area.	**Local Roads, Highways, Culverts, Bridges**	The following culverts are undersized: • West Shore Drive (900' N of CR 34) • Church Road (1700' E of Oscawana Lake Rd) • Peekskill Hollow Road – Two culverts (1600' S of Gordon Rd AND 200' N of Wicopee Rd) • Rush Drive (50' E of Oscawana Lake Rd) • Oscawana Lake Rd (At Cayuga Rd) • Turk Hill Rd (900' N of CR 55) • Secor Road (200' E of Lake Shore Dr) • Snake Hill Road (at Philipse Brook Rd) • Fairfield Drive (200' E of Eastwood Dr) • Croton Falls Road (100' W of Pigot Rd) • West Lake Boulevard (350' N of Rt 6N)
Municipal Buildings	The County Office Building does not have backup power.	**Medical Centers (non-hospital)**	No known impacts
College/University	No applicable	**Place of Worship**	No known impacts
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	The County reported harmful algal bloom related issues in relation to beaches. Trees were also reported downed on the trailways.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	There were a few designated evacuation routes with signage for the decommissioned Indian Point Nuclear Energy Plant.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Cultural/Historic Buildings/Sites	No known impacts	**Schools (K-12)**	No known impacts
Elder-care Facilities	Evacuation plans are in place and up to date. Private owned facilities all should have backup power per state requirements.	**Utilities**	No known impacts
Fire/Police Stations	Carmel's backup power went out; they have plans to replace/repair. They currently have one of the County's portable generators and the County has eight portable generators.	**Wastewater Treatment Plants**	No known impacts; there is only one at the County level and it has backup generator.
Gas Stations, Grocery Stores, Supermarkets	No known impacts	**Water: Drinking Water Resources**	There are a lot of residents on private wells for water and Cold Spring has emergency access to aqueduct. Municipalities are typically more privy to specific this information.
Hospitals	Putnam Hospital roads are close to the Reservoir; however there have been no known major flooding has occurred here.	**Other**	No known impacts

2.3.6 Dams

Table 2-12 includes all high hazard dams in the County of Putnam. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 2-12. High Hazard Dams Located in Putnam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-0867	Lake Carmel Dam	MIDDLE BRANCH CROTON RIVER	TOWN OF KENT	Local Government	Recreation	High Hazard Dam
231-0901	Putnam Lake Dam	BOG BROOK	TOWN OF PATTERSON	Local Government	Fire Protection, Stock, Or Small Farm Pond, Recreation	High Hazard Dam
230-5320	Mountain Brook Dam	MOUNTAIN BROOK	WATCHTOWER BIBLE AND TRACT SOCIETY of New York Inc.	Private	Irrigation	High Hazard Dam
231-0480	Croton Falls Dam	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0496	Diverting Reservoir Dam	EAST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0503	Middle Branch Dam	MIDDLE BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0511A	West Branch Dam	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0511B	Carmel Auxiliary Dike	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0527	Sodom Dam	EAST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0528	Bog Brook Dam #2	TR-EAST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0528A	Bog Brook Dam #1	TR-E BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0529	Boyds Corner Dam	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-0498	Lower (south) Wiccopee Dam	WICCOPEE BROOK	CITY OF PEEKSKILL	Local Government	Water Supply - Secondary	High Hazard Dam
213-2385	Marcell Roth Lake Dam	TR-PEEKSKILL HOLLOW CREEK	NYS DEC DIVISION OF LANDS & FORESTS	State	Recreation	High Hazard Dam
213-2775	Roaring Brook Dam	ROARING BROOK	Town of Putnam Valley	Local Government	Recreation	High Hazard Dam
213-0777	Perkins Estate Pond Dam	CLOVE CREEK	OPEN SPACE INSTITUTE, Glynwood	Private	Recreation	High Hazard Dam
213-0814	Lake Peekskill Dam	HOLLOWBROOK	LAKE PEEKSKILL IMPROVEMENT DISTRICT	Local Government	Recreation	High Hazard Dam
213-0871	Cargill Reservoir Dam	CARGILL BROOK	CITY OF BEACON	Local Government	Water Supply - Primary	High Hazard Dam
213-1004A	Cold Spring Dam (upper)	FOUNDRY BROOK	VILLAGE OF COLD SPRING	Local Government	Water Supply - Primary	High Hazard Dam
213-1004B	Cold Spring Dam (lower)	FOUNDRY BROOK	VILLAGE OF COLD SPRING	Local Government	Water Supply - Primary	High Hazard Dam
213-1146	Upper (north) Wiccopee Dam	WICCOPEE BROOK	CITY OF PEEKSKILL	Local Government	Water Supply - Secondary	High Hazard Dam

Instructions: Please provide any information about dam risk in your community in the grey box below.

A lot of the dams in the County are privately owned and there are no known issues with the dams located in the County. The County stated that there are a few dam projects that are going on to strengthen structures.

2.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 2-13 identifies the preliminary hazard ranking for Putnam, whether the County agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 2-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Agree	-	-	Low
Disease Outbreak	Medium	Agree	-	-	Medium
Drought	High	Agree	-	-	High
Earthquake	Low	Agree	-	-	Low
Extreme Temperatures	Medium	Agree	-	-	Medium
Flood	Low	Disagree	Medium	Due to future projections, and recent flooding events, the County opted to increase the flood risk.	Medium
Harmful Algal Blooms	Medium	Disagree	Low	Director of Public Health noted the blooms are seasonal and efforts are taken annually to try to reduce the number of blooms across the County.	Low
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Agree	-	-	Low
Wildfire	High	Disagree	Medium	The issues are more related to air quality from the wildfire smoke from Canada.	Medium

2.4 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 2-14 through Table 2-17.

2.4.1 Development and Permitting

Table 2-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	No, County does not issue development permits
What is your process for tracking building permits?	This is tracked at the municipal level.
Are permits tracked by hazard area? (For example, floodplain development permits.)	This is tracked at the municipal level.
Does your community have a buildable land inventory? If yes, please describe.	No, the County has assisted in identifying some lands on a piecemeal basis in some municipalities

Table 2-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020	Permitting is performed at the municipal level of government			
Total Permits				
Permits within SFHA				
2021				
Total Permits				
Permits within SFHA				
2022				
Total Permits				
Permits within SFHA				
2023				
Total Permits				
Permits within SFHA				
2024				
Total Permits				
Permits within SFHA				
2025				
Total Permits				
Permits within SFHA				

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

Table 2-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Refer to Chapters 3 to 11 for recent major development and infrastructure in each municipality.					

Table 2-17. 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 Zones*	Description / Status of Development
30-million-dollar Fair Street improvement.					

2.5 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).

2.5.1 NFIP Statistics

Table 2-18 summarizes the NFIP policy and claim statistics for the County of Putnam.

Table 2-18. Putnam NFIP Summary of Policy and Claim Statistics

NFIP Community Number	-
FEMA 2020 NFIP Data	
# Policies	302
# Claims (Losses)	333
Total Losses Claimed	$4,772,959
# Repetitive Loss Properties (NFIP definition)	59
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	21
Repetitive Loss Events	6
Net Building Payment	$561,426
Net Contents Payment	$44,521
Total Net Payment	$605,948

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 2020, 2026

Note: "-" = information unavailable

2.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

Management and regulation of the regulatory floodplains are done at the local level. Refer to the individual jurisdictional annexes for details on the NFIP for each municipality.

2.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Putnam 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 Putnam to identify opportunities for integrating mitigation concepts into ongoing County procedures.

2.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 2-20 and Table 2-21 detail the available planning and regulatory capabilities of the County.

Regulatory Capabilities

Table 2-19. Regulatory Capabilities in Putnam

Capability Type	In Place in Municipality	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	No	-	-	-
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	Yes	Chapter 52 of the County's Code establishes the Bureau of Emergency Services and enables the Commissioner of the Bureau to undertake various duties.	Chapter 52, Emergency Services	PCBES
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019.	-	Planning responsible for SEQR.
Flood Damage Prevention Ordinance	No	-	-	-
Growth Management	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	Yes	The County annually undertakes education, outreach, and documentation in support of the MS4 program.	EPA Phase II Stormwater Rule	Public Works
Natural hazard specific ordinance	No	-	-	-

Capability Type	In Place in Municipality	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
(stormwater, steep slope, wildfire)				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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 Act 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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The County Planning Department reviews and provides comments on certain types of developments, including those impacting County facilities. Per Section 239, zoning ordinances, special use permits, site plans, area variances, and comprehensive plan adoptions are subject to County referral if they impact property within 500 feet of a municipal boundary, the boundary of an existing or proposed state park, the right-of-way of county or state roadways, the right-of-way of a stream or drainage channel owned by the County, the proposed boundary of any county or state owned land on which a public building is situated, or the boundary of a farm operation located in an agricultural district.	New York General Municipal Law GMU NY GEN MUN Section 239-l	Department of Planning
Stormwater Management Code	Yes	The County annually undertakes education, outreach, and documentation in support of the MS4 program.	Stormwater Management and Land Use Regulation, December 2017	Public Works
Subdivision Code	No	-	-	-
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	No	-	-	-

Planning Capabilities

Table 2-20. Planning Capabilities in Putnam

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	Yes	• The Plan establishes five major goals, and multiple objectives and strategies to fulfill the vision for agriculture and farmland in Putnam County. Goal 1: Economic Opportunities - Preserve agriculture as an important industry in the county and promote further agricultural economic development. Goal 2: Community Support - Increase community support of agriculture and cultivate an enhanced appreciation of agriculture and the many roles it plays in Putnam County. Goal 3: Supportive Policies and Programs - Promote regional, county, and local policies and programs that encourage and sustain farming. Goal 4: Education - Promote policies and programs that enhance farm viability and profitability. Goal 5: Open Space and Natural Resources - Preserve agriculture as working open space and promote farm practices that protect natural resources. • The goals will be accomplished by; aggressively integrating agriculture into existing county economic programs and initiatives; establishing new agricultural promotion efforts aimed at local decision makers, the general public, and area businesses; strengthening the role of the Putnam County Agriculture and Farmland Protection Board as an advocate for agriculture in the County. • The Agricultural and Farmland Protection Board (through the Planning Dept.) will be updating this plan within the next few years. Funding sources are being explored to hire an outside consultant for this update.	An Agricultural and Farmland Protection Plan for Putnam County, August 2004.	The Agricultural and Farmland Protection Board
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	Yes	• The Mid-Hudson Regional Sustainability Plan sets out a vision for sustainable development that builds on the Region's unique social, cultural, and natural history, with the goal of promoting economic development, environmental sustainability, and enhancing quality of life for the more than two million residents that call the Region home.	Mid-Hudson Regional Sustainability Plan, Final - May 2013. Putnam County Climate Change Adaptation &	Planning Department

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		• Recent experience with Hurricanes Irene and Sandy underscore the tremendous economic, environmental, and social impacts that can be caused by severe weather events, which are predicted to increase in frequency and severity as a result of climate change. Secondary impacts include flooding, drought, and heat waves. • In 2008, the Region's clean water and sewer infrastructure investment needs were estimated to be approximately $2.75 billion, with Westchester, Rockland and Putnam's request totaling about $1.4 billion alone. The Croton system, in Westchester and Putnam Counties, now requires potable water filtration per the US EPA and NYSDOH. • Watershed management plans and smart growth strategies can help to protect watersheds and mitigate impacts such as flooding. Projects are needed to identify and reduce risks faced by water infrastructure so as to better prepare the Region for the effects of climate change. Planning for today's 100-year flood is no longer adequate. • The Putnam County Climate Change Adaptation & Resilience Plan (CCARP) is currently in development, and we estimate completion by Summer 2026 with an adoption by Fall 2026 after a public comment period.	Resilience Plan (CCARP) 2026	
Comprehensive Plan	No	• While not a true Comprehensive Plan, the Vision 2010 Plan provides a foundation for a continuing dialogue among community leaders and local residents as to the direction Putnam County should travel on its path towards 2010. The Principles guiding Vision 2010 are Balance, Respect and Partnership. • Recommendations of the Plan include; Cultivating expanded partnerships among the County, New York City Department of Environmental Protection, municipalities, and State and federal agencies to maximize financial and technical assistance for protecting water quality and quantity; Completing and implementing the Groundwater Protection and Utilization Plan; Facilitating the requirements of the United States Environmental Protection Agency and the New York State Department of Environmental Conservation's Phase II Stormwater Management Program, as required by the Clean Water Act; Supporting Putnam's agricultural economy by providing enhanced technical assistance in areas of	Vision 2010	County Planning

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		environmental best management practices, farm business management assistance, and improved access to local and regional markets; Creating harmony between the built and non-built environment through innovate land use policies; and Inventorying streams to identify stream channel erosion and begin remediation activities.		
Continuity of Operations Plan	Yes	The COOP is designed to identify and prioritize essential functions that must continue during emergencies. This ensures that critical services are not interrupted, which is vital for public safety and organizational integrity. The plan outlines procedures and resources necessary to prepare for, respond to, and recover from various types of disruptions.	Development in progress	All Department Leads
Capital Improvement Plan	Yes	Any mitigation projects requiring capital expenditures are subject to the CIP process.	Ongoing (meet monthly)	County Budget Committee)—if it takes more than 40-man hours and/or $5,000
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	• The Putnam County CEMP was prepared by county officials working cooperatively with state, federal, and private agencies in a planning effort coordinated by NYS DHSES. The plan was designed to reduce or prevent emergency/disaster situations that the county is predisposed to, and enhance the adeptness of response and recovery operations. • The Putnam County Bureau of Emergency Services Commissioner or Designee has been designated the County Hazard Mitigation Coordinator. All County agencies will participate in risk reduction activities with the cooperation and coordination of the Putnam County Bureau of Emergency Services Commissioner; the County Hazard Mitigation Coordinator will be consulted as appropriate with relation to hazards involving environmental or naturally occurring risks.	PCBES; Multiple Plans (Haz-Mat, CEMP); January 2020	BES
Disaster Debris Management Plan	No	The Solid Waste Management Program (Health Dept.) has included language to create one of these in the newly updated LSWMP.	-	-
Economic Development Plan	Yes	• The threats associated with climate change and those accompanying global and technological challenges have the potential to dramatically undermine economic and	Hudson Valley Region Comprehensive Economic	Hudson Valley Regional Council

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		environmental progress in the Region and beyond. • Although the smallest of the region's counties by area, Putnam County continues to position itself to take better advantage of for tourism and other forms of targeted economic development. While many municipalities in the County are struggling to find sufficient infrastructure to support development. Nonetheless, the County reports making significant strides in improving its overall economic competitiveness. • For the Hudson Valley Region, one of the types of Resiliency considered was Environmental Resilience and the ability to withstand Natural disasters and the effects of Climate change. The Hudson Valley is all too familiar with natural disasters, the region has seen 7 Federal Disaster Declarations since 2010 but it was Superstorm Sandy that got everyone's attention. The Hudson Valley Regional Council is addressing this issue through education and outreach to communities to give them the tools they need to make decisions about addressing vulnerabilities at all levels.	Development Strategy 2019-2023	
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	Yes	• The purpose of this guide is specifically to address the flooding of streams and creeks that affects bridges, roadways and other public infrastructure. • Municipalities are encouraged to take proactive steps to understand and reduce flooding risks by planning emergency response procedures and addressing the causes of flooding and flood risk. This plan outlines procedures and chains of command during any disaster, including flooding, to allow effective, efficient response. Municipalities can work with county agencies, local fire departments, school districts and other entities to develop a plan. • Each Municipality should prepare an Emergency Action Plan (EAP) The purpose of the EAP is to establish procedures to protect life and property. The EAP should contain at a minimum: Emergency Notification Flowchart: Site Description: Emergency Detection, Evaluation and Classification: and Inundation Maps. Other Flood-Smart Strategies and recommended Actions include; Taking stock of infrastructure;	Flood Preparedness and Response: A Guide for Municipalities, 2014	Lower Hudson Coalition of Conservation Districts

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		Creating a Multi-Hazard Mitigation Plan; Attend Post-Flood Emergency Stream Intervention Training; Slow the flow off Land; Reconsider Land Use Within Floodplains; and Regulate Runoff that Could Worsen Flooding.		
Habitat Conservation / Wildlife Management Plan	No	-	-	-
Local Waterfront Revitalization Plan	No	-	-	-
Open Space Plan	No	-	-	-
Post-Disaster Recovery Plan	Yes	This is part of the County's CEMP	CEMP Appendix	PCBES
Public Health Plan	Yes	The 2025 Mid-Hudson Valley Regional Community Health Assessment (CHA) provides a comprehensive overview of the health status, needs, and priorities across the seven Mid-Hudson counties. The Community Health Assessment (CHA) is a descriptive summary of a population, its health status, and the distribution of health issues and the factors that impact health. It identifies the population's main health issues and their determinants and summarizes the assets and resources that can be mobilized to address the issues identified. The findings of the CHA inform the collaborative development of the Community Health Improvement Plan (CHIP). The Putnam County 2025-2030 Community Health Improvement Plan covers Putnam County, New York. The community health improvement plan (or CHIP) is a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. In formulating the Putnam County Community Health Improvement Plan (CHIP) 2025—2030, the Putnam County Department of Health (PCDOH) has identified three priorities to be addressed from the New York State Department of Health's Prevention Agenda 2025—2030. They are Poverty, Anxiety and Stress, and Preventive Services.	Multiple Plans; Chapter 10.04 of Putnam County Charter	PC Department of Health
Sheltering Plan	Yes	This is part of the County's CEMP	CEMP Appendix	PCBES

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	The Putnam County MS4 Coordinating Committee (PCMS4CC) on behalf of five of the East of Hudson Watershed Towns in Putnam County, sought to prepare a capital improvement program (CIP) to address stormwater management for the participating communities. The intent of the Stormwater Improvement Study (Study) was to identify costs and develop preliminary designs for other water quality improvement features which could potentially be installed (retro-fit) within the Study Area.	Stormwater Improvement Study Final Report December 2009	Public Works
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	Yes	•The Putnam County Bureau of Emergency Services (BES) manages and coordinates the County's fire, HazMat, EMS, Enhanced 911 system, fire investigations, fire police, trainings, radiological emergency preparedness and fire training center. BES manages a countywide communications systems and is tasked with planning for response, remediation / mitigation and recovery from natural and manmade disasters including those resulting from biological, nuclear, incendiary, chemical and explosive causes.	CEPA, 2017 Update	NYSDHSES
Transportation Plan	Yes	Putnam County is part of the Moving Forward 2055: New York Metropolitan Transportation Council Regional Transportation Plan. The Plan covers all modes of surface transportation from a regional perspective including highways, streets, public transportation, bicycle and pedestrian facilities, goods movement, and special needs transportation. In addition, it addresses key transportation activities such as operations and management of the transportation system, safety, security, and regional finances.	Moving Forward 2055	Planning Department
Watershed Management of Protection Plan	No	-	-	-
Other: Solid Waste Management Plan	Yes	All municipalities located in Putnam handle solid waste in different ways and in compliance with State and County regulations, however these practices do not	Local Solid Waste Management Plan, 2026	Health Department

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		encourage businesses and residents to reduce the waste they generate or to recycle more. The current practices are also a significant challenge to countywide education and technical assistance for enforcing the solid waste programs. As continuous work progresses, the Putnam County solid waste program is being revamped to provide more sustainable, environmentally conscious data collection mechanisms to support and implement education and programs to promote waste reduction behaviors.		

2.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 2-22 details the available administrative and technical capabilities of the County.

Table 2-21. Administrative and Technical Capabilities

Capability Type	In Place in Municipality	Comments
Civil Engineer	Yes	Public Works Division of Planning & Design
Construction/Building/Code Enforcement Department	No	-
Economic Development Commission/Committee	Yes	Putnam County Economic Development Corporation
Emergency Management/Public Safety Department	Yes	Bureau of Emergency Services
Environmental Commission/Specialist	Yes	Agricultural Board; Soil & Water Conservation Board; Climate Smart
Grant Writer	Yes	Health Department; PC Planning, BES, DPW for FHWA grants
Maintenance Programs to Reduce Risk	Yes	DPW Highway Division and DPW Parks Division
Mitigation Planning Committee	Yes	Putnam County HMP Steering Committee
Mutual Aid Agreements	Yes	DPW for equipment; PCBES, Local fire and ambulance corps
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	IT/GIS maintains the County Website for all Departments.

Capability Type	In Place in Municipality	Comments
Planning Board	No	The Department of Planning, Development, and Public Transportation provides essential support in land use reviews and offers educational training to empower local planning and zoning boards. The Department reviews and provides comments on certain types of developments, including those impacting County facilities. Per Section 239, zoning ordinances, special use permits, site plans, area variances, and comprehensive plan adoptions are subject to County referral if they impact property within 500 feet of a municipal boundary, the boundary of an existing or proposed state park, the right-of-way of county or state roadways, the right-of-way of a stream or drainage channel owned by the County, the proposed boundary of any county or state owned land on which a public building is situated, or the boundary of a farm operation located in an agricultural district.
Planning Department	Yes	PC Planning
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	DPW Construction and Maintenance Division, PC IT
Planner or Engineer with knowledge of land development and land management practices	Yes	PC Planning, Engineering Dept. in DPW
Planners or engineers with an understanding of natural hazards	Yes	PC Planning
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	DPW Construction and Maintenance Division, engineering/architectural design in DPW
Professionals trained in conducting damage assessments	No	-
Public Works/Highway Department	Yes	PC DPW
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	Yes	PC Planning, BES
Surveyor(s)	Yes	PC DPW
Zoning Board of Appeals	No	-
Other	No	-

2.6.3 Fiscal Capability

Table 2-23 summarizes financial resources available to Putnam.

Table 2-22. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	Yes, Final Plates Map Filing Fee
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	No
Other Federal (non-FEMA) funding programs	Yes, FTA, FHWA, and EPA
FEMA funding programs	Yes
Other State funding programs	Yes, NYSDOT; DASNY; NYSDOH; BridgeNY; TAP; NYCDEC
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

2.6.4 Education and Outreach Capability

Table 2-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 2-23. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	Yes, News and Press Releases
Hazard awareness campaigns, such as school and community programs and events	Yes, Fire Prevention programs are frequently held.
Hazard mitigation information available on your website	Yes, Meetings bulletins, upcoming training courses, and hazard mitigation news (including planning updates) are available on the PCBES website
Local News	Yes, some mitigation activities (like bridge and culvert repairs) are covered by local newspapers like the Putnam County Press & Times. We also regularly post articles on Putnam County's main website.
Natural disaster/safety programs in place for schools	Yes, individual districts provide education on fire safety and prevention.

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Most County Divisions/Departments communicate with these populations. The County also partners Community Based Services, Inc., ThinkDIFFERENTLY, Women's Resource Center, Prevention Council, Cover Care Center, etc.) with outside agencies to reach these communities.
Public information officer or communications office	Yes, the Bureau has a PIO position
Social media for hazard mitigation education and outreach	Yes, PCBES and the County have a Facebook page. The Health Dept. does as well.
Warning systems for hazard events	Yes, PCBES – Putnam County Storm Watch, NY-Alert; Code Red; Outdoor warning sirens (Indian Point); Emergency Alert System

2.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 2-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 2-24. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Weak
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Weak
Extreme Temperatures	Strong
Flood	Moderate/Strong
Harmful Algal Blooms	Moderate
Severe Storm	Moderate/Strong
Severe Winter Storm	Moderate/Strong
Terrorism	None
Wildfire	Weak

2.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

2.7.1 Past Mitigation Action Status

The tables below indicate progress on the County's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

PutnamCounty-1—Highway Department Generators	
Hazards Addressed	Extreme temperatures; Earthquake; Flood; Severe Storm; Severe Winter Storm; Terrorism
Lead Agency / Department	PCBES
Supporting Agency / Department	Highway Department
Action Location	-
Summary of Original Problem	Not all Highway facilities are on generators. There are two mobile generators available. During recent storms, the Highway Department requested smaller generators for traffic lights. Additional generators are needed to support facilities. Previously, the County's fixed generator had been dispatched to the Hospital and to an adult care facility.
Summary of Solution (Project)	The Department seeks large fixed generators (800 kW) that can be deployed via tractor trailer to lifeline facilities as well as additional smaller, mobile generators that can power traffic lights.
Action Category	SIP, ES
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Highway has installed new generators at some critical facility locations and obtained additional portable generators.
If discontinue, explain why	-

PutnamCounty-2—Gas Station Generators	
Hazards Addressed	Extreme temperatures; Earthquake; Flood; Severe Storm; Severe Winter Storm; Terrorism
Lead Agency / Department	Putnam County Highway Department
Supporting Agency / Department	Individuals Owners
Action Location	-
Summary of Original Problem	Gas stations need generators as evidenced by damages seen during the Halloween 2013 storm. Gas stations provide motor vehicle fuel as well as fuel such as fuel for home heating systems in some instances.
Summary of Solution (Project)	As suggested by the County legislators, gas stations and fuel distributors should have backup power due to their importance during storm events and power outages. An incentive program will be developed to encourage private owners to acquire generators.
Action Category	SIP, ES
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	-

PutnamCounty-3—Debris Management Plan Development	
Hazards Addressed	All hazards
Lead Agency / Department	Highway
Supporting Agency / Department	Municipal stakeholders; utilities; agencies. NYSDOT
Action Location	-
Summary of Original Problem	Following storm events, the clearance of debris from roadways and properties requires better coordination. Debris from State facilities has been left at Putnam County facilities indefinitely and there are restrictions on the re-use and disposition of debris. Debris management requires better coordination and centralization to enhance readiness.
Summary of Solution (Project)	The Department will develop a Disaster Debris Management Plan to better coordinate the removal and storage of debris for the County and responders following storm events.
Action Category	LPR, PR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Proposed in the Local Solid Waste Management Plan
If discontinue, explain why	-

PutnamCounty-4—Department of Health Capacity Building	
Hazards Addressed	All hazards
Lead Agency / Department	Department of Health
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Department of Health lacks personnel capacity and suffers turnover and loss of institutional expertise due to grant-funded positions and attrition. This issue compromises the ability of the Department to function to its full potential during hazard events.
Summary of Solution (Project)	The County will seek and secure training resources for health and terrorism incidents and funding to fill permanent positions and build expertise
Action Category	EAP, PR
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Turnover is still occurring, there is no obvious solution.
If discontinue, explain why	-

PutnamCounty-5—Readiness Materials Storage	
Hazards Addressed	All hazards
Lead Agency / Department	County Department of Health
Supporting Agency / Department	Bureau of Emergency Services; Highway Department
Action Location	-
Summary of Original Problem	Storage of materials (particularly temperature-sensitive supplies) is extremely limited. There is no place to store materials (no warehousing, no garage space). There are many vehicles that need to be parked outside. The breakout room and large breakout room are used as supply rooms.
Summary of Solution (Project)	Construct a climate-controlled stockpile building to store temperature-sensitive supplies such as vaccines and PPE.
Action Category	SIP, ES
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Funding is no longer available for this, the County would have to fund this in its entirety.
PutnamCounty-6—LEPC Re-mobilization	
Hazards Addressed	All hazards
Lead Agency / Department	PCBES
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Putnam County's LEPC is not active and needs County and municipal participation to reactivate. The Jan. 2013 NYSDHSES "A Guidance Document for LEPCs" shall be used to support this effort. Further, the County will work with LEPCs to integrate the findings and recommendations of this HMP within the LEPC programs, and conversely to integrate the needs and interests of the LEPCs into annual HMP reviews and 5-year updates, as appropriate.
Summary of Solution (Project)	The LEPC should be re-activated through engagement with local emergency management officials to encourage preparedness among local governments. PCBES can coordinate this effort.
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Include in the Capacity-Building Training for Local Jurisdictions
If discontinue, explain why	-

PutnamCounty-7—Fire Training Center Enhancements	
Hazards Addressed	Wildfire
Lead Agency / Department	PCBES
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The tower at the Fire Training Center has been condemned and repairing the facility has become costly. The County completed structural analysis of the entire facility, which is supposed to have large scale renovations every five years.
Summary of Solution (Project)	A new fire training tower should be constructed to continue to provide training for firefighters.
Action Category	EAP, PI
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Completed. Renovations completed in mid-2025.

PutnamCounty-8—Animal Emergency Response Site	
Hazards Addressed	All Hazards
Lead Agency / Department	PCBES
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Putnam County has a need to provide a site to shelter / house animals displaced by a natural and or manmade disaster. This project is designed to assist in complying with the Pets & Evacuation Transportation Standards Act of 2006. This act calls for the emergency managers / directors to take into account the needs of individuals with pets during and following a major disaster.
Summary of Solution (Project)	Upgrade, prepare, and renovate the existing Tilly Foster Farm property with materials to accommodate the needs of people with pets and service animals during a disaster. Providing a place for people to bring pets in a disaster will alleviate the current problem of people arriving at human shelters where they are generally not prepared to accept or accommodate them.
Action Category	SIP, ES
Current Status – Please select one:	In Progress
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	-
If discontinue, explain why	This came up during the CCARP process. While information about ASPCA's disaster preparedness steps is not provided, the Health Department links to information on Ready.gov about emergency preparedness and mentions pets as a consideration in planning for emergencies. See https://www.putnamcountyny.gov/health/community-health#Emergency. There is an animal rescue trailer for bare necessities that can be deployed to shelters.

PutnamCounty-9—Transportation Hardening	
Hazards Addressed	All Hazards
Lead Agency / Department	PCBES
Supporting Agency / Department	Putnam County Highway
Action Location	-
Summary of Original Problem	The Putnam County Busing System has been identified as a storm critical resource required for the evacuation and movement of the public. This project would involve development and implementation of an emergency transportation plan and related recommendations to facilitate the evacuation capabilities and needs of the residents of Putnam County. Putnam County has a population of approximately 100,000 people in a 246 square mile area.
Summary of Solution (Project)	This project would include the development of an Emergency Transportation plan and implementation of resulting recommendations to accommodate the hardening of the current transportation facilities and related transportation vehicles and equipment. It will address the evacuation and movement requirements that may be encountered during an emergency / disaster event in our County.
Action Category	SIP, PP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Revise Lead Agency to Planning and Public Works. While Putnam County does not have a general evacuation plan, it does have an evacuation plan for hurricanes and tropical storms. Specifically, Putnam County's Hurricane/Tropical Storm Emergency Action Plan (2024) includes information about evacuation, responsibilities, and communications. Additionally, Putnam County has designated evacuation routes. The Putnam County Hurricane/Tropical Storm Emergency Action Plan (2024) indicates that within 36 hours or less time prior to an expected hurricane, the County should advise residents to consider evacuation based on anticipated post-storm conditions including those without access to personal transportation.
If discontinue, explain why	Not applicable

PutnamCounty-10—Capacity-Building Training for Local Jurisdictions	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County OEM
Supporting Agency / Department	relevant County and local department leads; FEMA
Action Location	-
Summary of Original Problem	Enhancements and capacity building are needed to advance professional development and local officials' education about flooding and other hazards. Municipal officials reported being unaware of repetitive loss properties in their jurisdictions and their locations. This hinders the provision of technical services, mitigation, and emergency services to property owners and residents.
Summary of Solution (Project)	Request and acquire NFIP policy data from FEMA, including repetitive loss information, to distribute to municipalities to support floodplain administration. Facilitate Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, anticipated to include based on municipal and county interest: • NFIP Community Rating System (CRS) • Benefit-Cost Analysis (BCA) • Substantial Damage Estimating (SDE) • NFIP Elevation Certificates (EC) • Certified Floodplain Manager (CFM) Training and Certification
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	-
If discontinue, explain why	-

2.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the County of Putnam identified the following mitigation efforts completed since the last HMP:

- Upsizing culverts and improving drainage ditches on County roads to reduce flooding
- Putnam County Climate Change Adaptation & Resilience Plan (CCARP) 2026 was completed

2.7.3 Identified Issues

The County of Putnam has identified the following vulnerabilities within their community for mitigation strategy development:

- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. Following storm events, the clearance of debris from roadways and properties requires better coordination. Debris from State facilities has been left at Putnam County facilities indefinitely and there are

restrictions on the re-use and disposition of debris. Debris management requires better coordination and centralization to enhance readiness.

- Recent storm events have resulted in severe rainfall which have overwhelmed culverts and caused flooding. The following culverts are undersized:
  - West Shore Drive (900' N of County Route 34)
  - Church Road (1700’ E of Oscawana Lake Road)
  - Peekskill Hollow Road (1600’ S of Gordon Road and 200’ N of Wicopee Road)
  - Rush Drive (50’ E of Oscawana Lake Road)
  - Oscawana Lake Rd (At Cayuga Road)
  - Turk Hill Rd (900’ N of County Route 55)
  - Secor Road (200’ E of Lake Shore Drive)
  - Snake Hill Road (at Philipse Brook Road)
  - Fairfield Drive (200’ E of Eastwood Drive)
  - Croton Falls Road (100’ W of Pigot Roadd)
  - West Lake Boulevard (350’ N of Rt 6N)
- The County owned Office Building does not have backup power and could be used as an emergency heating/cooling shelter with the addition of backup power and would be an identified location to distribute PPE.
- The following critical facilities are County owned and located in the special flood hazard area which may impact continuity of operations at the County level:
  - Putnam County Humane Society
  - Putnam County Board of Elections
  - Records Department
- The Putnam County Public Transit System has been identified as a critical storm resource required for the evacuation and movement of the public. This project would involve the implementation of the 2024 Hurricane/Tropical Storm Emergency Action Plan and related recommendations to facilitate the evacuation capabilities and needs of the residents of Putnam County. Putnam County has a population of approximately 100,000 people in a 246 square mile area.
- There are flood-prone roadways in the County, including multiple roadways that are located in the floodplain, including Peekskill Hollow Road, going out towards the Hudson River. This roadway may be a critical road in terms of evacuation for some County residents or business owners.
- The Health Department is a critical facility of the County that must be able to perform continuity of operations. The Health Department incurs flooding because the parking lot is graded in towards the building.
- The status of the County’s bridges and causeway in relation to ability to withstand hazard events is unknown. Failure of bridges or causeways could result in loss to life and limitations to emergency access. Peekskill Hollow Road was noted to have some potential concerns by Putnam Valley, and the bridge is county-owned.
- The County DPW maintains around 60 miles of State-owned roadway with no issues in clearing their applicable roadways. The County and municipalities reported large salt limitations for the 2025-2026

season. The County is looking into constructing a new salt shed to stockpile salt for the future to reduce issues with limitations in the middle of the winter season.

- Enhancements and capacity building are needed to advance professional development and local officials' education about flooding and other hazards. Municipal officials reported being unaware of repetitive loss properties in their jurisdictions and their locations. This hinders the provision of technical services, mitigation, and emergency services to property owners and residents.
- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The County has 59 repetitive loss properties, but other properties may be impacted by flooding as well.
- Putnam County has a need to provide a site to shelter / house animals displaced by a natural and or manmade disaster. This project is designed to assist the needs of individuals with pets during and following a major disaster, as some animals may be service animals.
- There are 21 high hazard dams that are located in Putnam County. A lot of these dams are owned by local governmental entities, however there are also a multitude of dams that are privately owned and the County is not fully up to date on information relating to these dams.
- The County and jurisdictions are unaware of the fire equipment that is available in and around the County. The County has room for enhanced collaboration in relation to firefighting capabilities and does not have a Wildfire Protection Plan.

2.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Putnam participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Putnam 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 County priorities.

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 2-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-PutnamCo-01. Disaster Debris Management Plan

Lead Agency:	Emergency Services	
Supporting Agencies:	Department of Public Works; Health Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☒Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. Following storm events, the clearance of debris from roadways and properties requires better coordination. Debris from State facilities has been left at Putnam County facilities indefinitely and there are restrictions on the re-use and disposition of debris. Debris management requires better coordination and centralization to enhance readiness.	
Description of the Solution:	The County, Health Department and Emergency Services will develop a Disaster Debris Management Plan to better coordinate the removal and storage of debris for the County and responders following storm events.	
Estimated Cost:	Staff Time	
Potential Funding Sources:	County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	The action will result in increased quicker and more efficient cleanup after disaster events.	
Impact on Socially Vulnerable Populations:	This action aims to result in an increased cleanup capability which will benefit the population.	
Impact on Future Development:	Having a plan for disaster debris management ensures operations can continue quickly and efficiently.	
Impact on Critical Facilities/Lifelines:	Critical facilities will be considered in the development of this plan to ensure continuity of operations of critical facilities and lifelines.	
Impact on Capabilities:	The action will result in increased post disaster capabilities.	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Rely on federal cleanup	These services may or may not be available
	Rely on state cleanup	These services may or may not be available

Action 2027-PutnamCo-02. Culvert Upsizing

Lead Agency:	Department of Public Works
Supporting Agencies:	County Administration
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood ☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Recent storm events have resulted in severe rainfall which have overwhelmed culverts and caused flooding. The following culverts are undersized: • West Shore Drive (900' N of County Route 34) • Church Road (1700' E of Oscawana Lake Road) • Peekskill Hollow Road (1600' S of Gordon Road and 200' N of Wicopee Road) • Rush Drive (50' E of Oscawana Lake Road) • Oscawana Lake Rd (At Cayuga Road) • Turk Hill Rd (900' N of County Route 55) • Secor Road (200' E of Lake Shore Drive) • Snake Hill Road (at Philipse Brook Road) • Fairfield Drive (200' E of Eastwood Drive) • Croton Falls Road (100' W of Pigot Roadd) • West Lake Boulevard (350' N of Rt 6N)
Description of the Solution:	The County Department of Public Works will complete an engineering survey of the following culverts that were deemed to be undersized and contribute to flooding: • West Shore Drive (900' N of County Route 34) • Church Road (1700' E of Oscawana Lake Road) • Peekskill Hollow Road (1600' S of Gordon Road and 200' N of Wicopee Road) • Rush Drive (50' E of Oscawana Lake Road) • Oscawana Lake Rd (At Cayuga Road) • Turk Hill Rd (900' N of County Route 55) • Secor Road (200' E of Lake Shore Drive) • Snake Hill Road (at Philipse Brook Road) • Fairfield Drive (200' E of Eastwood Drive) • Croton Falls Road (100' W of Pigot Road) • West Lake Boulevard (350' N of Rt 6N) The County will then acquire the funding for the purchase and implementation of these upsized culverts.
Estimated Cost:	High ($100,000 per culvert)
Potential Funding Sources:	HMGP, BRIC, CHIPS, BridgeNY, STBG, County Budget
Implementation Timeline:	Within 5 years
Goals Met:	1, 3, 4, 5
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	• Transportation routes are more likely to remain open • Evacuation routes will remain intact. • 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.
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.

Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)		☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)		☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	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 2027-PutnamCo-03. County Office Building

Lead Agency:	County Administration	
Supporting Agencies:	Department of Public Works	
Hazards of Concern:	☐Dam Failure ☒Disease Outbreak ☐Drought ☐Earthquake ☒Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The County owned Office Building does not have backup power and could be used as an emergency heating/cooling shelter with the addition of backup power and would be an identified location to distribute PPE.	
Description of the Solution:	The Department of Public Works will conduct a generator study to determine the proper sized generator needed and will acquire the funding and oversee installation of a fixed mounted diesel-powered generator and necessary electrical components to supply backup power to the Office Building. The Department of Public Works will be responsible for maintenance and testing of the generator following installation.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, CHIPS, DASNY, NYSERDA, NYPA, CFA, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4, 5	
Benefits:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Microgrid	Costly and difficult to implement.
	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.

Action 2027-PutnamCo-04. Critical Facilities in the Floodplain

Lead Agency:	County Administration	
Supporting Agencies:	-	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The following critical facilities are County owned and located in the special flood hazard area which may impact continuity of operations at the County level: • Putnam County Humane Society • Putnam County Board of Elections • Records Department	
Description of the Solution:	The County will conduct a feasibility assessment to determine what additional floodproofing measures are needed at Putnam County Humane Society, Putnam County Board of Elections and the Records Department to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the County will carry out the option.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, NYS Environmental Bond Act, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 4, 5	
Benefits:	Ensures continuity of operations	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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. This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area

	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-PutnamCo-05. Putnam County Emergency Evacuation

Lead Agency:	Planning	
Supporting Agencies:	Department of Public Works	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Putnam County Public Transit System has been identified as a critical storm resource required for the evacuation and movement of the public. This project would involve the implementation of the 2024 Hurricane/Tropical Storm Emergency Action Plan and related recommendations to facilitate the evacuation capabilities and needs of the residents of Putnam County. Putnam County has a population of approximately 100,000 people in a 246 square mile area.	
Description of the Solution:	While Putnam County does not have a general evacuation plan, it does have an evacuation plan for hurricanes and tropical storms. Specifically, Putnam County's Hurricane/Tropical Storm Emergency Action Plan (2024) includes information about evacuation, responsibilities, and communications. This project would include the implementation of resulting recommendations from the 2024 Emergency Action Plan to accommodate the hardening of the current transportation facilities and related transportation vehicles and equipment, as well as a creation of an Emergency Transportation Plan. It will address the evacuation and movement requirements that may be encountered during an emergency / disaster event in our County.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 5	
Benefits:	Evaluating evacuation routes in the County ensures safety is a priority of County residents. Furthermore, identifying routes which are not impacted, or have limited impact, to hazards, such as flood, prevent additional loss or damages.	
Impact on Socially Vulnerable Populations:	Having pre-determined evacuation routes and a reliable transportation system can assist socially vulnerable populations in preparing themselves and those within their community to evacuate in a safe, timely fashion.	
Impact on Future Development:	Future development would need to be built with access to the identified evacuation routes.	
Impact on Critical Facilities/Lifelines:	Identifying evacuation routes can assist in smooth transportation operations across multiple jurisdictions.	
Impact on Capabilities:	This action will produce a planning capability for the County, making it more resilient.	
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. Sea level rise associated with climate change may cause water levels in the Hudson River to increase. This action helps to plan for future hazard events.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Do not consult surrounding municipalities	Evacuation routes may go against one another
	Do not publicize routes	Residents will not be aware of the evacuation routes

Action 2027-PutnamCo-06. Flood Prone Roadways

Lead Agency:	Department of Public Works	
Supporting Agencies:	County Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are flood-prone roadways in the County, including multiple roadways that are located in the floodplain, including Peekskill Hollow Road, going out towards the Hudson River. This roadway may be a critical road in terms of evacuation for some County residents or business owners.	
Description of the Solution:	The County will develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County Public Works.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 4, 5	
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.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
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:	By reducing flood-prone roadways, a county keeps its transportation network operational, speeds emergency response, cuts economic losses, and builds long-term resilience—all of which are essential to maintaining its ability to protect residents, support commerce, and respond effectively to disasters	
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. Sea level rise associated with climate change may cause water levels in the Hudson River to increase. This action helps to plan for future hazard events.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate all flood-prone road system	Not feasible
	Raise all flood prone roads	Cost prohibitive

Action 2027-PutnamCo-07. Health Department Flooding

Lead Agency:	County Administration	
Supporting Agencies:	Health Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Health Department is a critical facility of the County that must be able to perform continuity of operations. The Health Department incurs flooding because the parking lot is graded in towards the building.	
Description of the Solution:	The County will develop specific mitigation solutions to correct the flooding issues related to the Health Department parking lot. The County will then acquire the funding to implement these mitigation measures.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 4, 5	
Benefits:	This action will identify measures to protect infrastructure that is considered to be a critical facility.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for utility workers and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	With a protected critical facility, communications are more likely to remain intact between responding agencies.	
Impact on Capabilities:	Ensuring continuity of operations allows for a more rapid return to normalcy after a hazard event.	
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. This action helps to plan for future hazard events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate Health Department	Cost prohibitive
	Raise all flood prone systems	Cost prohibitive

Action 2027-PutnamCo-08. Bridge Mitigation

Lead Agency:	Department of Public Works	
Supporting Agencies:	County Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The status of the County's bridges and causeway in relation to ability to withstand hazard events is unknown. Failure of bridges or causeways could result in loss to life and limitations to emergency access. Peekskill Hollow Road was noted to have some potential concerns by Putnam Valley, and the bridge is county-owned.	
Description of the Solution:	The County will consult with an engineer to identify inadequate or vulnerable bridges and causeways within the County and replace or retrofit the identified bridges and causeways.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, BridgeNY, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 4, 5	
Benefits:	• Infrastructure will be protected from future hazard damages. • Ensures at least a single transportation route remains accessible to the community.	
Impact on Socially Vulnerable Populations:	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 Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	• Ensures transportation routes remain open and accessible to the public for daily use and evacuation needs. • Provides a point of access for first responders into communities that may have faced damage from a hazard event on either side of the bridge.	
Impact on Capabilities:	Increases community resiliency to flooding events in vulnerable areas that would normally be vulnerable to prolonged isolation after high-water 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. This action helps to plan for future hazard events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Remove Bridges	Not feasible
	Raise all flood prone systems	Cost prohibitive

Action 2027-PutnamCo-09. Upgraded Salt Shed

Lead Agency:	Department of Public Works	
Supporting Agencies:	County Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The County DPW maintains around 60 miles of State-owned roadway with no issues in clearing their applicable roadways. The County and municipalities reported large salt limitations for the 2025-2026 season. The County is looking into constructing a new salt shed to stockpile salt for the future to reduce issues with limitations in the middle of the winter season.	
Description of the Solution:	The County will find a location for the new salt shed. Once the County finds an applicable location, the County will acquire the funding for the purchase and construction of the upsized salt shed. Planning secured funding for the 843 Fair Street salt truck/shed facility. This will ensure the County is better prepared for increasing winter precipitation.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, WQIP, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3, 4, 5	
Benefits:	An upsized salt shed gives a county a safer, faster, and more compliant winter maintenance operation, while lowering long-term costs and ensuring readiness for future needs.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations, such as low-income households, elderly residents, and people with disabilities are more likely to rely on public transportation and may have limited access to private vehicles. It improves winter readiness, reduces environmental hazards, and supports the mobility and health of those most at risk during severe weather	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Roadways in the County are considered a critical facility, as they are critical for continuity of operations.	
Impact on Capabilities:	An upsized salt shed significantly improves storage capacity, operational efficiency, safety, and long-term cost-effectiveness for critical facilities, while ensuring year-round readiness for winter operations.	
Climate Change Considerations:	Climate change is resulting in an unequal distribution of precipitation events that can result in flooding concerns and unsafe road conditions in the winter.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate salt shed	Does not fix issue
	Construct new salt sheds at each municipality	Not cost effective

Action 2027-PutnamCo-10. Capacity-Building Training for Local Jurisdictions

Lead Agency:	County Administration	
Supporting Agencies:	-	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	Enhancements and capacity building are needed to advance professional development and local officials' education about flooding and other hazards. Municipal officials reported being unaware of repetitive loss properties in their jurisdictions and their locations. This hinders the provision of technical services, mitigation, and emergency services to property owners and residents.	
Description of the Solution:	The County will request and acquire NFIP policy data from FEMA, including repetitive loss information, to distribute to municipalities to support floodplain administration. Facilitate Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, anticipated to include based on municipal and county interest: • Reactivate Putnam County's LEPC • NFIP Community Rating System (CRS) • Benefit-Cost Analysis (BCA) • Substantial Damage Estimating (SDE) • NFIP Elevation Certificates (EC) • Certified Floodplain Manager (CFM) Training and Certification • NYS DHSES Citizen Preparedness Corps	
Estimated Cost:	High	
Potential Funding Sources:	County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	County-led enhancements and capacity-building programs provide municipalities with technical expertise, resources, and collaborative frameworks that help them improve services, access funding, and strengthen governance, including responding to hazard events to better protect County residents and property owners.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations are greatly impacted by hazard events and may benefit from training local officials.	
Impact on Future Development:	Future development in the impacted area will be less likely to be impacted.	
Impact on Critical Facilities/Lifelines:	The County led initiatives can better protect the critical facilities throughout the jurisdictions.	
Impact on Capabilities:	Enhancements and capacity-building programs improve capabilities by systematically strengthening skills, systems, and mindsets, enabling organizations to adapt, innovate, and sustain high performance.	
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. This action helps to plan for future hazard events by providing increased, relevant training.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Leave up to State Government	State may have other priorities

	Leave up to Federal Government	Federal government may have other priorities

Action 2027-PutnamCo-11. NFIP Mitigation Support

Lead Agency:	County Administration	
Supporting Agencies:	-	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The County has 59 repetitive loss properties, but other properties may be impacted by flooding as well.	
Description of the Solution:	The County will assist the municipalities in conducting outreach to 70 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, FMA, BRIC, County Budget, Property Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increases flood storage.	
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.	
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-PutnamCo-12. Animal Emergency Response Site

Lead Agency:	County Administration		
Supporting Agencies:	Veterinary Clinics		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☒Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☒Wildfire	
Description of the Problem:	Putnam County has a need to provide a site to shelter / house animals displaced by a natural and or manmade disaster. This project is designed to assist the needs of individuals with pets during and following a major disaster, as some animals may be service animals.		
Description of the Solution:	The County will identify at least one location in the eastern and western portions of the County for people with pets/service animals. The County will also explore partnerships with veterinary networks to identify existing facilities that can be used to shelter pets and animals. Providing a place for people to bring pets in a disaster will alleviate the current problem of people arriving at human shelters where they are generally not prepared to accept or accommodate them.		
Estimated Cost:	High		
Potential Funding Sources:	HMGP, BRIC, County Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 3, 4, 5		
Benefits:	By ensuring animals are protected during crises, these sites help communities recover faster and more effectively.		
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations are reliant on animals for medical reasonings and may need these animals with them at all times.		
Impact on Future Development:	Not applicable		
Impact on Critical Facilities/Lifelines:	An identified animal emergency response site would become an identified critical facility.		
Impact on Capabilities:	A county shelter that accepts pets is not just an animal care facility, it is a multi-purpose community hub that strengthens the county's operational capabilities in an emergency hazard event		
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Open up additional shelters	Does not improve situation	
	Remove shelters	Does not fix issue	

Action 2027-PutnamCo-13. Dam Failure Mitigation

Lead Agency:	County Administration	
Supporting Agencies:	Dam Owners	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are 21 high hazard dams that are located in Putnam County. A lot of these dams are owned by local governmental entities, however there are also a multitude of dams that are privately owned and the County is not fully up to date on information relating to these dams.	
Description of the Solution:	The County will work with applicable dam owners and local jurisdictions to increase information about dam-related risks by continuing communications with non-County landowners about the condition and maintenance of the dams. The County will also support high hazard dam owners in mapping potential flood impacts for all dams in the County and will support efforts to acquire funding for dam improvements and repairs as needed.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, BRIC, HHPD, Environmental Bond Act, WQIP, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4, 5, 6	
Benefits:	Identification of dams that are at higher risk of failure and an understanding of their inundation zones provides the opportunity to work with the downstream community to prepare for any potential flooding events and address any ways to mitigate the overall risk of failure.	
Impact on Socially Vulnerable Populations:	The most vulnerable populations may live directly downstream of the dam. Identifying which areas are most likely to experience significant impacts will allow for planning and staging of resources to protect lives and property.	
Impact on Future Development:	New structures are less likely to be built in areas where the risk of inundation is high. This can guide capital improvement projects within the municipality and only allow development in areas where it is safe to build, and guide future building codes, zoning, land use and permitting.	
Impact on Critical Facilities/Lifelines:	Allows for the identification of infrastructure that currently exists which may be vulnerable to impacts so that sufficient planning and preparation to increase resiliency and decrease likelihood of interruption.	
Impact on Capabilities:	Identification of inundation areas provides a framework to plan for the needs of communities that lie within the areas of highest risk.	
Climate Change Considerations:	Increase in extreme rainfall events may alter the floodplain, which impacts the dam inundation zones as water moves downstream.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Remove dam	May not be feasible
	Relocate dam	Not cost effective

Action 2027-PutnamCo-14. Wildfire Shared Services Mitigation

Lead Agency:	Emergency Services	
Supporting Agencies:	Fire Departments	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	The County and jurisdictions are unaware of the fire equipment that is available in and around the County. The County has room for enhanced collaboration in relation to firefighting capabilities and does not have a Wildfire Protection Plan.	
Description of the Solution:	The County will work with the Fire Departments in the County to create an inventory of equipment available in the County and surrounding Counties to identify potential gaps in emergency equipment. The County will coordinate with the State, Villages and Towns to assess overall wildfire risk and will consult with each other to fill those gaps and will create a comprehensive Community Wildfire Protection Plan.	
Estimated Cost:	High	
Potential Funding Sources:	HMGP, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	This action will update an already existing capability by addressing issues such as wildfire response, hazard mitigation, community preparedness, and structure protection.	
Impact on Socially Vulnerable Populations:	This action will provide socially vulnerable populations an opportunity to be involved in the planning process, as a key element in community fire planning should be the meaningful discussion it promotes among community members regarding their priorities for local fire protection and forest management.	
Impact on Future Development:	This action may identify areas in which future development should be restricted due to vulnerability to the wildfire hazard.	
Impact on Critical Facilities/Lifelines:	This action will identify critical facilities and community lifelines located within the wildland–urban interface and are vulnerable to the wildfire hazard.	
Impact on Capabilities:	This action will update an already existing capability by addressing issues such as wildfire response, hazard mitigation, community preparedness, and structure protection.	
Climate Change Considerations:	Higher temperatures are expected to increase the amount of moisture that evaporates from land and water. These changes have the potential to lead to more frequent and severe droughts and lightning producing storms, which, in turn, increases the likelihood of wildfires.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Update without collaborative input	Plan will not meet minimum HFRA requirements
	Merge Fire Departments	Does not fix issue

Table 2-25. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-PutnamCo-01	Disaster Debris Management Plan	1	1	1	1	1	1	1	1	0	1	1	1	1	1	**13**	High
2027-PutnamCo-02	Culvert Upsizing	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-PutnamCo-03	County Office Building	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2027-PutnamCo-04	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2027-PutnamCo-05	Putnam County Emergency Evacuation	1	1	1	1	1	1	1	1	0	1	1	1	1	1	**13**	High
2027-PutnamCo-06	Flood Prone Roadways	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-PutnamCo-07	Health Department Flooding	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2027-PutnamCo-08	Bridge Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-PutnamCo-09	Upgraded Salt Shed	1	1	1	1	1	0	0	1	1	1	1	0	1	1	**11**	High
2027-PutnamCo-10	Capacity-Building Training for Local Jurisdictions	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2027-PutnamCo-11	NFIP Mitigation Support	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-PutnamCo-12	Animal Emergency Response Site	1	0	1	1	1	0	0	1	1	1	1	1	0	1	**10**	Medium
2027-PutnamCo-13	Dam Failure Mitigation	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
2027-PutnamCo-14	Wildfire Shared Services Mitigation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

3. VILLAGE OF BREWSTER

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

3.1 HAZARD MITIGATION PLANNING TEAM

The Village of Brewster identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments.

Table 3-1 summarizes the Village officials who participated in the development of the annex. Additional documentation of the Village's planning activities through Planning Partnership meetings is included in Volume I.

Table 3-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: James Schoenig, Mayor Address: 50 Main St, Brewster, NY 10509 Phone Number: (845)279-3760x15 Email: jschoenig@brewstervillage-ny.gov	Name/Title: Michelle Diebold, Village Clerk Address: 50 Main St, Brewster, NY 10509 Phone Number: 845.279.3760 x13 Email: vclerk@brewstervillage-ny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: JR Folchetti, Village Engineer Address: 50 Main St, Brewster, NY 10509 Phone Number: 845-363-1560 Email: todd.atkinson@JRFA.com	

3.2 COMMUNITY PROFILE

3.2.1 Community Classifications

Table 3-2 summarizes classifications for community programs available to Brewster.

Table 3-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	No	-	-

Program	Participating? (Yes/No)	Classification	Date Classified
NYSERDA Clean Energy Community	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

3.2.2 Community Profile

The Village of Brewster, incorporated in 1894, physically lies within the Town of Southeast. The Village of Brewster is located on the eastern edge of Putnam County, just above Westchester County line and situated within a one-half square mile area. The Village is known as the "Hub of the Hudson Valley". It is home to Metro North commuter station, various faith-based institutions, commercial establishments, restaurants, a museum, and library.

Table 3-3 through Table 3-6 note land area, population, and building stock information for the Village of Brewster.

Table 3-3. Total Land Area in the Village of Brewster

Jurisdiction	Total Land Area	
	Acres	Square Miles
Brewster (V)	301.2	0.5

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 3-4. Population Estimates in the Village of Brewster

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
2,508	2.6%	2,512	2.6%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 3-5. Vulnerable Populations in the Village of Brewster

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
330	13.1%	72	2.9%	544	21.7%	360	14.3%	362	14.4%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 3-6. General Building Stock in the Village of Brewster

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
569	$368,940,861	396	$138,587,475	148	$144,977,260	8	$17,771,571	17	$67,604,555

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

3.3 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 Brewster's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

3.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Brewster are shown in Figure 3-1 AND Figure 3-2. 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 Brewster has significant exposure.

Figure 3-1. Brewster Hazard Area Map #1

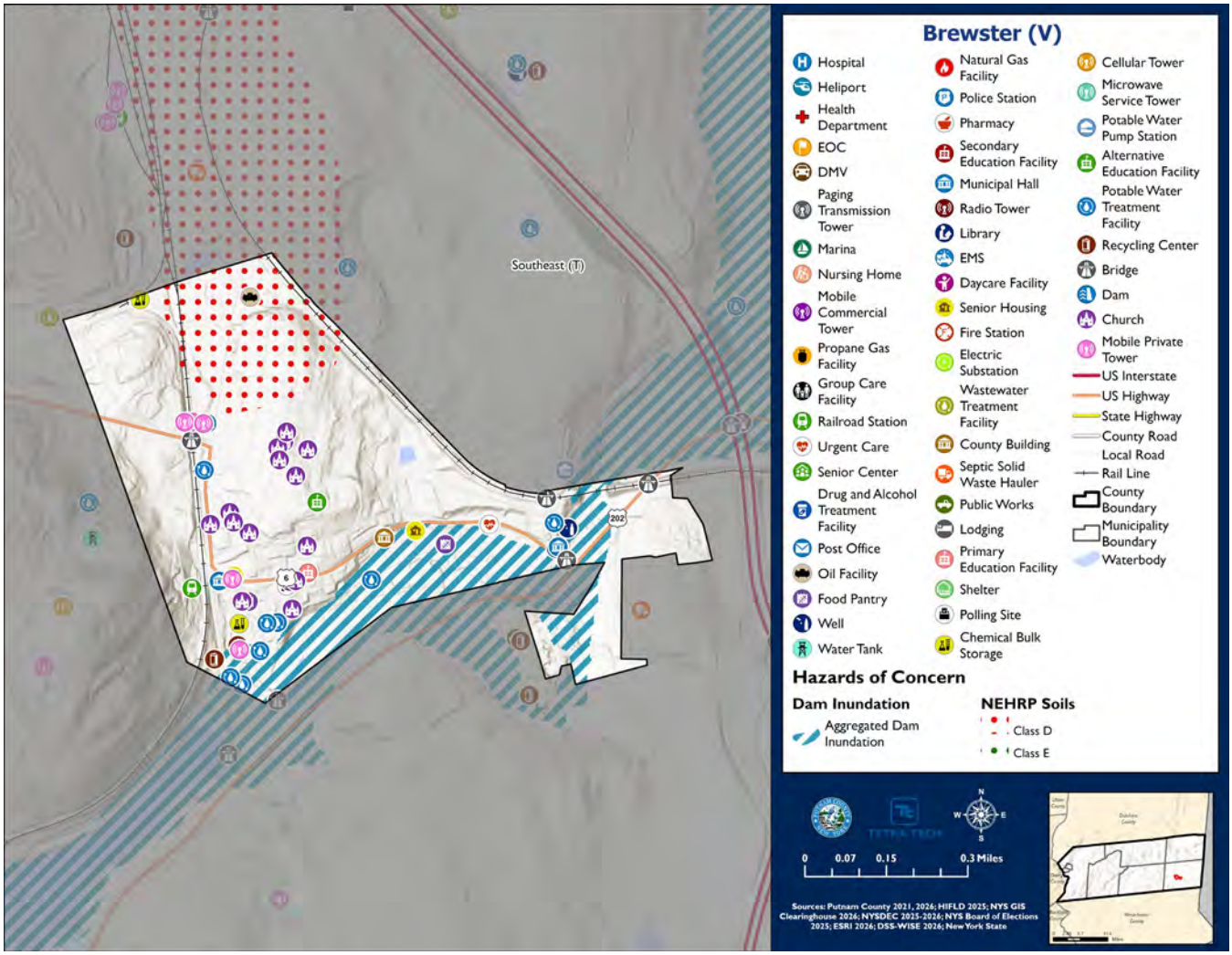
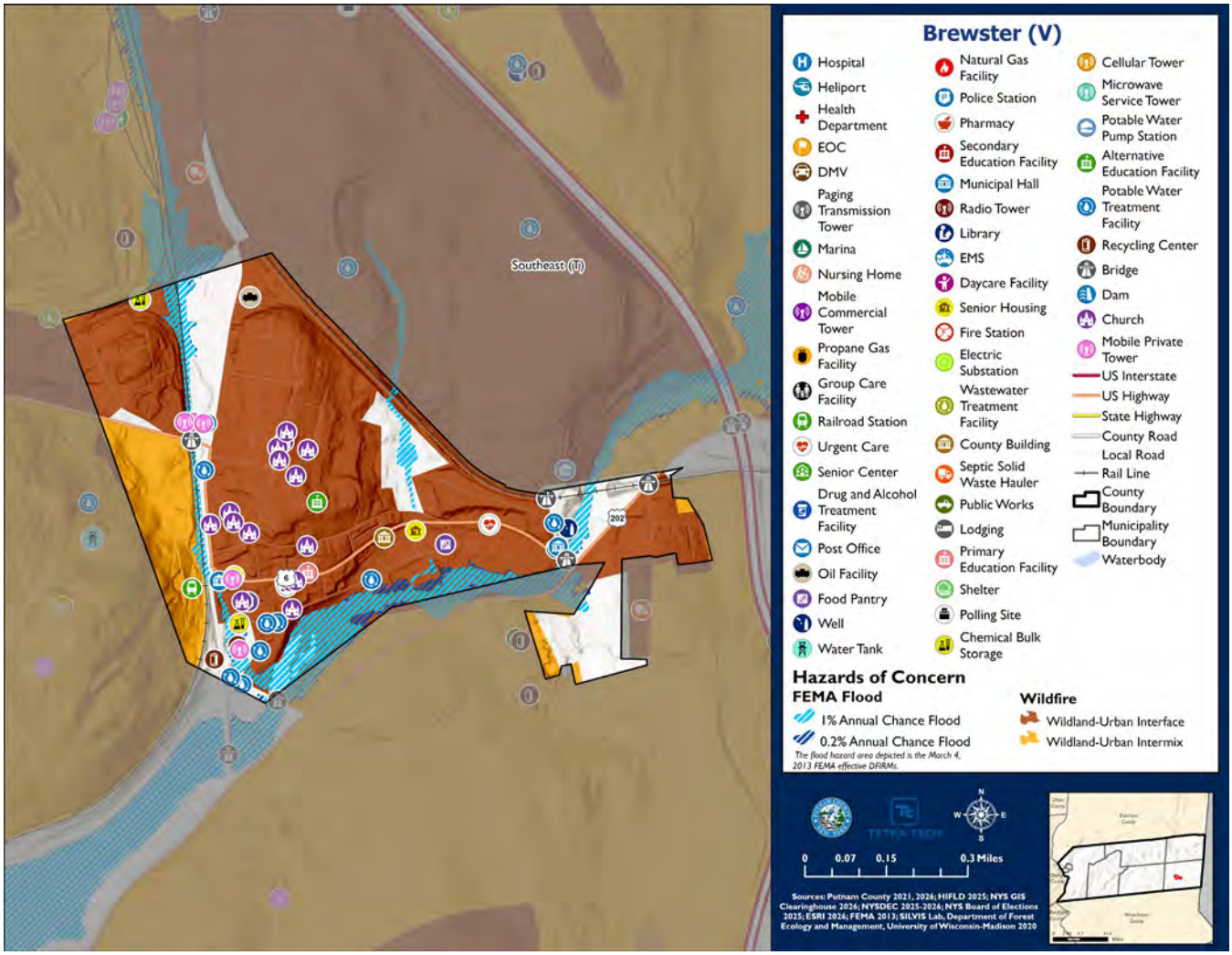


Figure 3-2. Brewster Hazard Area Map #2



3.3.2 Previous Event History

The history of natural and non-natural hazard events in Brewster is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 3-7 and Table 3-8 provide details on the loss and damage in Brewster during hazard events since the last hazard mitigation plan update.

Table 3-7. Presidential Disaster Declarations History in Brewster

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Brewster
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	Masking mandates and reduction in workforce
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	No damages or losses
August 21-24, 2021	EM-3565-NY	Hurricane Henri	No damages or losses

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Brewster
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	Trees downed sporadically
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	No damages or losses

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 3-8. Hazard Event History in Brewster

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Brewster
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	No damages or losses
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	No damages or losses
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	No damages or losses
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No damages or losses
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	No damages or losses
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	No damages or losses
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	No damages or losses

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

3.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following

a disaster are key factors in the severity of impacts and the speed of recovery. Table 3-9 includes an inventory of critical facilities and infrastructure for the Village of Brewster.

Table 3-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
City of New York-WPML524	Mobile Private Tower	Y	Y	2027-BrewsterV-04	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Two bridges were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

3.3.4 Local Hazard Impacts Assessment

Representatives from the Village of Brewster Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 3-10.

Table 3-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	No known concerns. No issues with beaver dam breaks, etc.
Disease Outbreak	Lessons learned from COVID. Village has two facilities that are senior living centers, they could be vulnerable from another event.
Drought	Village has their own water supply with no issues with water shortage.
Earthquake	Some more shaking, no infrastructure impacts.
Extreme Temperatures	Coordinate with the County for Code Red and Code Blue events, the Village does not have any identified sheltering facilities due to regulations needed. Senior centers are not equipped with backup power (privately owned).
Flood	Village located right outside of the floodplain. Village repaired a culvert that collapsed that was repaired under FEMA funding. Another culvert located in green lot for parking that washed out that was repaired three-four years ago through FEMA funding.
Harmful Algal Blooms	Village has a retention pond across from the Senior Center, no known issues there.
Severe Storm	No known impacts
Severe Winter Storm	Ice on the powerlines would be the biggest concern. Village has Public Works and they are very good and efficient at clearing roadways. No issues with County/State clearing their roadways.
Terrorism	Village has train station.
Wildfire	No known impacts

3.3.5 Vulnerable Community Assets

Representatives from the Village of Brewster Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 3-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 3-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Not applicable	**Area: Concentration of Local Businesses, Major Employers**	No known impacts
Area: Concentration of Residences	No known impacts	**Local Roads, Highways, Culverts, Bridges**	No known impacts
Municipal Buildings	Wellfield and storage tank do not have a backup generator.	**Medical Centers (non-hospital)**	Not applicable
College/University	Not applicable	**Place of Worship**	No known impacts
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	Two parks located in Village with no known issues.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	No known impacts
Cultural/Historic Buildings/Sites	Not applicable	**Schools (K-12)**	No known impacts
Elder-care Facilities	Two senior living centers privately owned with no backup power.	**Utilities**	Longest Village was without power was 2 days at most.
Fire/Police Stations	Police is not equipped with back up power. Fire is its own entity.	**Wastewater Treatment Plants**	Sewer has backup power. No known impacts
Gas Stations, Grocery Stores, Supermarkets	No known impacts	**Water: Drinking Water Resources**	No known impacts
Hospitals	Not applicable	**Other**	No known impacts

3.3.6 Dams

Table 3-12 includes all dams in the Village of Brewster. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 3-12. Dams Located in Brewster

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-4605	Lake Charles Dam	TR-East Brach Croton River	Camp RE LLC	Private	Recreation	Low Hazard Dam

Identified information about dam risk in the Village, or to dams owned by the Village, are noted below:

No concerns with this dam, it is located in the Village .

3.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 3-13 identifies the preliminary hazard ranking for Brewster, whether the Village agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 3-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Agree	-	-	Low
Disease Outbreak	Medium	Agree	-	-	Medium
Drought	High	Disagree	Low	Village has reliable water supply and never has had to haul water.	Low
Earthquake	Low	Agree	-	-	Low

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Extreme Temperatures	Medium	Agree	-	-	Medium
Flood	Low	Agree	-	-	Low
Harmful Algal Blooms	Medium	Agree	-	-	Medium
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Agree	-	-	Low
Wildfire	High	Disagree	Medium	Village does not have a lot of woods, no significant wildfire event in the past 20 years.	Medium

3.4 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 3-14 through Table 3-17.

3.4.1 Development and Permitting

Table 3-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes- Code Enforcement Office, Building Inspector. CEO works three days, and the inspector works on weekends as-needed. The staff work with the boards and receive frequent training.
What is your process for tracking building permits?	Online platform
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes, the Office is knowledgeable about areas of village. There is review by the building inspector and engineer.
Does your community have a buildable land inventory? If yes, please describe.	No, the Village is mostly built up. New development is anticipated to be redevelopment.

Table 3-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020	Permitting information was not provided by the Village for this plan update.			
Total Permits				
Permits within SFHA				
2021				
Total Permits				

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
Permits within SFHA				
2022				
Total Permits				
Permits within SFHA				
2023				
Total Permits				
Permits within SFHA				
2024				
Total Permits				
Permits within SFHA				
2025				
Total Permits				
Permits within SFHA				

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

Table 3-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
None Identified					

Table 3-17. 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 Zones*	Description / Status of Development
Redeveloping a closed Elementary School into apartments	Residential	Close to 200 apartment units in 3 separate buildings	Garden Street	-	Putting Plans together for Planning Board review

3.5 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 3-1 is responsible for maintaining this information.

3.5.1 NFIP Statistics

Table 3-18 summarizes the NFIP policy and claim statistics for the Village of Brewster.

Table 3-18. Brewster NFIP Summary of Policy and Claim Statistics

NFIP Community Number	360668#
FEMA 2020 NFIP Data	
# Policies	1
# Claims (Losses)	7
Total Losses Claimed	$41,241
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	-
Repetitive Loss Events	-
Net Building Payment	-
Net Contents Payment	-
Total Net Payment	-

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 2020, 2026

Note: "-" = information unavailable

3.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 3-19.

Table 3-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Village located right outside the floodplain.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	The Village Engineer is hereby appointed Local Administrator to administer and implement this chapter by granting or denying floodplain development permits in accordance with its provisions.
What local department is responsible for floodplain management?	Village Engineering
Are there any certified floodplain managers on staff in your jurisdiction?	No

NFIP Topic	Comments
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2013
What is the date that your flood damage prevention ordinance was last amended?	January 7, 2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 4, 2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Planning Board, Code Enforcement and Building Department administer permit review, inspections and the Village has a Village engineer on staff.
What are the barriers to running an effective NFIP program in your community, if any?	Limited funding and staffing
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	More outreach regarding training opportunities and localized training locations
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	SUBSTANTIAL DAMAGE - means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	SUBSTANTIAL IMPROVEMENT - means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage", regardless of the actual repair work performed
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unavailable
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	Yes, none located in the floodplain
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	Unavailable
Does the community maintain elevation records? If yes, please describe.	No
Describe any areas of flood risk with limited NFIP policy coverage.	None
How does the community teach property owners or other stakeholders about the importance of flood insurance?	No
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	Map Service Center, County information
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	Site plan, reviewed by planning/zoning

NFIP Topic	Comments
flood risk when reviewing variances such as height restrictions?	

3.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Brewster 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 Brewster to identify opportunities for integrating mitigation concepts into ongoing Village procedures.

3.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 3-20 and Table 3-21 detail the available planning and regulatory capabilities of the Village.

Regulatory Capabilities

Table 3-20. Regulatory Capabilities in Brewster

Capability Type	In Place in Municipality ? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	Ch. 103: NYS Uniform and Energy Code 2020; Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the "2015 I-Codes"), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017). Article 18 of the Executive Law (§§ 370 through 383)	NYS Uniform and Energy Code	Local and State

Capability Type	In Place in Municipality ? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries. •Chapter 103, Construction Codes, Uniform. This chapter provides for the administration and enforcement of the New York State Uniform Fire Prevention and Building Code (the "Uniform Code") and the State Energy Conservation Construction Code (the "Energy Code") in this Village of Brewster. •Except as otherwise provided in Subsection B of this section, a building permit shall be required for any work which must conform to the Uniform Code and/or the Energy Code, including, but not limited to, the construction, enlargement, alteration, improvement, removal, relocation or demolition of any building or structure or any portion thereof, •A Flood hazard certification shall be provided to the Code Enforcement Officer prior to the issuance of the certificate of occupancy or certificate of compliance:		
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B.	NYS Executive Law, Article 2B.	Local OEM
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019	Title 6 NYCRR Part 617	State
Flood Damage Prevention Ordinance	Yes	A community must adopt a Flood Damage Prevention Ordinance to participate in the National Flood Insurance Program. •Chapter 134, Flood Damage Prevention. The Board of Trustees of the Village of Brewster finds that the potential and/or actual damages from flooding and erosion may be a problem to the residents of the Village of Brewster and that such damages may include destruction or loss of private and public housing, damage to public facilities, both publicly and privately owned, and injury to and loss of human life. •It is the purpose of this Chapter to: A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; C. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters; D. Control	Ch. 134 State mandated BFE+2 for new construction and substantial improvements	Village Engineer

Capability Type	In Place in Municipality ? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		filling, grading, dredging and other development which may increase erosion or flood damages; E. Regulatetheconstructionoffloodbarrierswhichwillunnaturallydivert floodwaters or which may increase flood hazards to other lands; and F. Qualify for and maintain participation in the National Flood Insurance Program •The Village Engineer is hereby appointed local administrator to administer and implement this chapter by granting or denying floodplain development permits in accordance with its provisions. •A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard •The following standards apply to all new subdivision proposals and other proposed development in areas of special flood hazard (including proposals for manufactured home and recreational vehicle parks and subdivisions): A. Proposals shall be consistent with the need to minimize flood damage; B. Public utilities and facilities, such as sewer, gas, electrical and water systems, shall be located and constructed so as to minimize flood damage; and C. Adequate drainage shall be provided to reduce exposure to flood damage. •On streams with a regulatory floodway, as shown on the Flood Boundary and Floodway Map or the Flood Insurance Rate Map adopted in § 134-6, no new construction, substantial improvements or other development in the floodway (including fill) shall be permitted unless: A technical evaluation by a licensed professional engineer shows that such an encroachment shall not result in any increase in flood levels during occurrence of the base flood. •The following standards apply to new and substantially improved residential structures located in areas of special flood hazard. Within Zones A1-A30, AE and AH and also Zone A if base flood elevation data are available, new construction and substantial improvements shall have the lowest floor (including basement) elevated to or above two feet above the base flood elevation. •The following standards apply to new and substantially improved commercial, industrial and other nonresidential structures located in areas of special flood hazard. Within Zones A1-A30, AE and AH, and also Zone A if base flood elevation data are available, new construction and substantial improvements of any nonresidential structure shall either: (1) Have the lowest floor, including basement or cellar, elevated to or above two feet above the base flood elevation; or (2) Be floodproofed so that the structure is watertight below two feet above the base flood elevation, including attendant utility and		

Capability Type	In Place in Municipality ? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		sanitary facilities, with walls substantially impermeable to the passage of water.		
Growth Management	No	In New York State, virtually all land use regulation, which is the primarily tool for Smart Growth, takes place at the municipal level (i.e., in a city, village or town government). Land use planning is also primarily a municipal function. While State law provides for certain planning functions at the county or regional level, these mechanisms are largely advisory, whereas municipal planning is directly related to land use regulation.		
Municipal Separate Storm Sewer System (MS4)	Yes	This requires urbanized areas (local governments) to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events to waterbodies to the "maximum extent practicable". The goal of the program is to improve water quality and recreational use of waterways. A Municipal Separate Storm Sewer Systems Permit, GP-0-15-003 is required. The Village of Brewster is a MS4 community whose program is administrated by the Department of Public Works.	EPA Phase II Stormwater Rule	Federal Local- DPW
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	-	-	-
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a)The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	Ch. 263-21	Local- Planning Board
Stormwater Management Code	Yes	Codes Rules and Regulations of the State of New York, Title 6. Department of Environmental Conservation, Chapter X. Division of Water Resources, Subchapter A. General Article 3. State Pollutant Discharge Elimination System, Part 750.	Ch. 209	Federal, State, Local- DPW

Capability Type	In Place in Municipality ? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		State Pollutant Discharge Elimination System (SPDES) Permits. New York Environmental Conservation Law, Article 17, Titles 7, 8 and Article 70. New development and redevelopment projects that result in a land disturbance of one acre or greater, including projects less than one acre if they are part of a larger common plan of development or sale or if controlling such activities in a particular watershed is require a permit by the Department •Chapter 209, Stormwater Management, adopted 08-15-07. The purpose of this Section 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 Brewster, New York (hereinafter "Village"), and to address the findings of fact in § 209-1 hereof. It is the intent of this Section to provide for the accomplishment of the following objectives: A. Meet the requirements of minimum measures four and five of the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02, or as amended or revised; B. Require land development activities to conform to the substantive requirements of the New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES)General Permit for Construction Activities GP-02-01, or as amended or revised; C. Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion, and maintain the integrity of stream channels. •The Stormwater Management Officer(s) [SMO(s)] shall administer, implement and enforce the provisions of this Part 2. Such powers granted or duties imposed upon the authorized enforcement official may be delegated in writing by the SMO as may be authorized by the municipality.		
Subdivision Code	Yes	Subdivision is defined in the State enabling Statutes as: the division of any parcel of land into a number of lots, blocks, or sites as specified i a local ordinance, law or regulation, with or without streets or highways, for the purpose of sale, transfer of ownership, or development. There is not a requirement by NYS for subdivisions. Each municipality is permitted to further define subdivision for its own purposes in connection with its subdivision review procedure. The enabling statutes provide that a plat showing a division of land which is subject to a municipality's subdivision regulations, may not also be subject to review under its site plan review authority. (general city law s. 32 & 33, Town Law s. 276 & 277, Village Law s. 7-728 & 7-730).	Ch. 263-22	Local Planning Board
Wellhead Protection	No	-	-	-

Capability Type	In Place in Municipality ? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Zoning/Land Use Code	Yes	Article IX, Section 2, of the State Constitution and by the various state enabling statutes. In New York, the zoning enabling acts continue to require that zoning be undertaken "in accord with a well-considered plan" or "in accordance with a comprehensive plan." Unless the town, city or village has adopted a comprehensive plan document using the more recently-enacted statutes (described later herein), local officials must refer to the extensive body of case law to determine how zoning can meet the more general "comprehensive plan" requirement.**May be impacted by State wetland regulations which protect wetlands greater than 12.4 acres and established buffer zones. Regulated at local level •Chapter 263, Zoning. Within the Village of Brewster no land, building or other structure shall be used and no building or other structure shall be constructed, reconstructed, enlarged, extended, moved or structurally altered except in conformity with this chapter. •It is the purpose of this Chapter; To guide and regulate the orderly growth, development and redevelopment of the Village of Brewster in accordance with the adopted Comprehensive Plan of long-term objectives, principles and standards determined to be beneficial to the welfare of the people and their interests. B. To protect the established character and the social and economic wellbeing of both private and public property. C. To promote, in the public interest, the most appropriate utilization of land. D. To secure safety from fire, panic and other dangers and to provide adequate light, air and convenience of access. E. To prevent overcrowding of land or buildings and to avoid undue concentration of population. F. To conserve the value of buildings and to enhance the value of land throughout the Village. •No material that is dangerous due to explosion, extreme fire hazard or radioactivity shall be used, stored or manufactured, except in accordance with applicable codes and regulations of the State of New York.	Ch. 263, adopted 6-18-08 Updating, see Comprehensive Plan below	Local Zoning Board of Adjustment

Planning Capabilities

Table 3-21. Planning Capabilities in Brewster

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	Municipalities may develop agricultural and farmland protection plans, in cooperation with cooperative extension and other organizations, including local farmers.	NYCRR Part 390 Agricultural and Farmland Protection -	

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	Optional under NYS Law, municipality may adopt a comprehensive plan or proceed through a planning process which has evolved based on case law. (Per State Legislature General City Law section 28a, Town Law s. 272a, Village Law s. 7-722) **May be impacted by State wetland regulations which protect wetlands greater than 12.4 acres and established buffer zones. Regulated at the local level. •Village of Brewster 2015 Comprehensive Plan. The 2015 Update to the Comprehensive Plan (the Plan) is intended to provide planning information, guiding principles, goals, objectives, and policy points for future development in the Village of Brewster. The hope is to strengthen and enhance the quality of life for residents through thoughtful, sustainable development. •Plan recommendations include that; The village must consider water quality protection measures to safeguard its own drinking aquifer, as well as NYC's Croton Water Supply System The Village may want consider establishing a groundwater protection overlay district depending upon the delineated limits of the source aquifer; In addition, fire protection within the Village is a concern. The Brewster Fire Department currently utilizes a ladder truck that is 100 feet tall. The ladder truck currently has a limited function with existing power lines throughout the Village, and in particular, along Main Street. Therefore, as a recommendation for this update to the Comprehensive Plan, the overhead power lines on Main Street and Marvin Avenue should be placed underground conduits; and the maximum height of any structure should be limited to 75 feet when considering any revisions to the maximum structure height in the B-1 zoning district. •The Village must consider well head and aquifer protection when implementing any land use or zoning changes as a result of the findings and recommendations of this Comprehensive Plan. As recommended in the Draft Croton Plan, the limits of the source	2015 Comprehensive Plan was completed and is available on the Village website	Clerk

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		aquifer should be determined and additional safeguards to protect the aquifer should be established as necessary within the framework of the applicable zoning and land use codes and regulations. •The Plan recommends that the Village should continue to pursue the construction of the passive recreation park along the East Branch of the Croton River as funding becomes available. •The implementation of the Comprehensive Plan proposals will require a series of actions by the Village of Brewster. Among the various recommendations, the adoption of the urban renewal plan and the revisions to the Zoning Ordinance and Zoning Map are of the highest priorities		
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	Yes	A local government can decide to adopt its capital plan pursuant to General Municipal Law Section 99-g.	Annual Budget	Clerk
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B. The plan is developed and maintained by the New York State Office of Emergency Management and agencies that comprise the NYS Disaster Preparedness Commission (DPC).	NYS Executive Law, Article 2B	BEC
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	Yes	The State Pollutant Discharge Elimination System (SPDES) permit program is a primary way the DOW implements its watershed protection and restoration activities	Ch. 134	Local
Habitat Conservation / Wildlife Management Plan	No	Laws related to habitat protection and biodiversity control the use and application of certain pesticides, demolition projects and clearing of vegetated areas. Identifying certain critical habitat areas could be included in the Comprehensive Plan. Critical Habitat is a part of certain State and Federal Permitting.	Pay per unit for fee schedule-taking away green space to update their green space.	

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		The State had a Wildlife Action Plan requires to maintain eligibility for the State Wildlife Grant Program.		
Local Waterfront Revitalization Plan	No	-	-	-
Open Space Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	No	-	-	-
Sheltering Plan	No	The Village of Brewster follows the same plan as the Town of Southeast as our residents are a part of their community. During larger scale events, the Village would follow the plans of Putnam County. During many of the harsher winter storms, the Village sent residents to the United Cerebral Palsy Association building on Mount Ebo Road South, off of Doansburg Road in the Town of Southeast.	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

3.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 3-22 details the available administrative and technical capabilities of the Village.

Table 3-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	No	-
Construction/Building/Code Enforcement Department	Yes	-
Economic Development Commission/Committee	Yes	The Board of Trustees addresses economic development matters.
Emergency Management/Public Safety Department	Yes	County
Environmental Commission/Specialist	Yes	The Planning Board and Board of Trustees council on environmental matters.
Grant Writer	Yes	In house
Maintenance Programs to Reduce Risk	Yes	East of Hudson Watershed Corporation undertakes work for stormwater collection. The village pays for storm drains. The Village of Southeast's vacuum trucker is used to collect debris.
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	Agreements exist for police and fire protection.
Open Space Board/Committee	Yes	The Planning Board and Board of Trustees council on environmental matters.
Personnel skilled or trained in website development	Yes	Village Clerk provides content
Planning Board	Yes	Addresses site plans, subdivision plats, changes in rights-of-way, laying out or abandonment of streets.
Planning Department	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	No	-
Planner or Engineer with knowledge of land development and land management practices	Yes	Contracted Village Engineer
Planners or engineers with an understanding of natural hazards	Yes	Contracted Village Engineer
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	Contracted Village Engineer
Professionals trained in conducting damage assessments	No	-
Public Works/Highway Department	Yes	Public Works

Capability Type	In Place in Municipality? Yes or No	Comments
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	No	-
Surveyor(s)	No	-
Zoning Board of Appeals	Yes	
Other	No	-

3.6.3 Fiscal Capability

Table 3-23 summarizes financial resources available to Brewster.

Table 3-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes (capital reserve accounts for water and sewer)
Impact fees for homebuyers or developers of new development/homes	Yes (Stormwater)
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	Not a policy
Other Federal (non-FEMA) funding programs	No
FEMA funding programs	Yes
Other State funding programs	Yes, CHIPS
Open Space Acquisition funding programs	Shared recreation department with Southeast. Village pays taxes for Town's rec department
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

3.6.4 Education and Outreach Capability

Table 3-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 3-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	No
Hazard awareness campaigns, such as school and community programs and events	No
Hazard mitigation information available on your website	Yes, link for info on 2020 plan
Local News	Village pushes out to news networks when needed, if its localized, they post it on their website
Natural disaster/safety programs in place for schools	Yes, Schools communicate with parents.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes, local church does a shelter program during the winter.
Public information officer or communications office	Yes, Village Clerk performs duty.
Social media for hazard mitigation education and outreach	Yes, Facebook and Instagram are available.
Warning systems for hazard events	Yes, Firehouse sends out alarm for fires. The Village Clerk distributes messages to radio stations and over social media.

3.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 3-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 3-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	None
Disease Outbreak	None
Drought	Strong
Earthquake	None
Extreme Temperatures	Moderate
Flood	Strong
Harmful Algal Blooms	Strong
Severe Storm	Strong
Severe Winter Storm	Strong
Terrorism	Weak

Hazard	Strong, Moderate, Weak, None, N/A
Wildfire	Weak

3.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

3.7.1 Past Mitigation Action Status

The tables below indicate progress on the Village's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

V. Brewster-1—Water Backup Power Supply	
Hazards Addressed	Severe Storm; Severe Winter Storm
Lead Agency / Department	Village of Brewster
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Village's water pump stations lack a backup power source. Brewster has a public water system that serves nearly 2,400 people. Additionally, the well fields have a prior contamination issue and remedial measures included the installation of a pump for treated groundwater. In the case of a power outage, both the water pump station and remediation pump would cease working.
Summary of Solution (Project)	Provide two emergency power transfer switches, excavation, cabling and labor to enable connection to a generator (alternate power supply). The two locations are separated by approximately 500 feet. The remote control house manages the well pumps. For emergency transfer switch #1; Install 1 600 AMP Emergency transfer switch outdoors at the pumphouse. Excavate and pour a suitable foundation and structural frame to hold the NEMA 4X lockable cabinet adjacent to the pumphouse.
Action Category	SIP, PR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

V. Brewster-2—Oak Street Stormwater Management Improvements	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Village of Brewster
Supporting Agency / Department	-
Action Location	Oak Street
Summary of Original Problem	The neighboring Town of Southeast filled in a detention pond at a park in the Village. When the pond existed, it slowed the velocity of stormwater downstream towards Tonetta Brook. However, with the pond removed, stormwater travels quickly down the culvert and is undermining the conduit under Oak Street and Main Street, which leads to sinkholes and the undermining of property along the culvert.
Summary of Solution (Project)	Redesign and rehabilitate the drainage pipe under Oak Street to Main Street.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

V. Brewster-3—Install Back Up Power at Various Village Critical Facilities	
Hazards Addressed	Severe Storm; Severe Winter Storm
Lead Agency / Department	Village of Brewster
Supporting Agency / Department	PCBES
Action Location	-
Summary of Original Problem	A number of critical and essential facilities within the Village are vulnerable to power outages, which are becoming increasingly frequent as storms become more frequent, intense and unseasonal (e.g. early season winter storms where trees still have leaves)
Summary of Solution (Project)	Work with facility owners/operators to install backup power (or appropriate connections and transfer switches to accommodate temporary backup power generators) at the following critical or essential facilities, which may require securing grant funding: • Public Works Garage and Police Department (208 Main Street) •Putnam Community Foundation – 24 Senior Apartments (above 50 Main Street) •Mayor Mitchell Court – 24 Senior Apartments • 9 minor sewer lift stations • Medical Clinic (155 Main) – Federal qualified Health Care Facility • United Cerebral Palsy (UCP) – 11 Oak Street, planning to put back in place as a medical facility
Action Category	SIP, PR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Medical Clinic is not a medical facility, nor a critical facility that needs back up power and the United Cerebral Palsy facility is not there anymore.
If discontinue, explain why	Not applicable

V. Brewster-4—Sheltering – Village-Wide.	
Hazards Addressed	All hazards
Lead Agency / Department	Village of Brewster
Supporting Agency / Department	Private partners
Action Location	-
Summary of Original Problem	The Village lacks proper sheltering facilities. They have been considering some possible locations, but they have capacity issues (septic and sewer), and/or the two empty schools (Garden Street and St. Lawrence) which are currently partially used.
Summary of Solution (Project)	Continue to explore viable sheltering options within the Village; upgrade viable facilities as needed to support sheltering needs and requirements which may include securing available grant funding
Action Category	SIP, ES
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	The Village coordinates with the County for this.

V. Brewster-5—River Bank Erosion – Village-Wide	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Village of Brewster
Supporting Agency / Department	NYC DEP; NYS DEC
Action Location	-
Summary of Original Problem	There is erosion along brooks in the Village due to high water level.
Summary of Solution (Project)	Regular inspections and mitigate pre-storm events through vegetation and debris management. Review design capacity and determine necessary renovations, which will likely include replacements of gabion walls in certain locations.
Action Category	NSP, NR
Current Status – Please select one:	Discontinued – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Village ensures debris removal is performed routinely.

V. Brewster-6—Brewster Flood Vulnerability	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Village of Brewster
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Buildings in the vicinity of Marvin Avenue experience basement flooding due to the low elevation and stormwater events. Other portions of the Village are floodprone and include critical facilities.
Summary of Solution (Project)	The Village will support property owners efforts to address the flooding issue, including permitting and inspection. For critical facilities in the floodplain, the Village will notify existing owners of the vulnerability and distribute information about mitigation options.
Action Category	SIP, PP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Village is completing retention wall and culvert replacement to reduce flooding in this area that was caused by a culvert collapse.

V. Brewster-7—Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities	
Hazards Addressed	All hazards
Lead Agency / Department	PCBES
Supporting Agency / Department	Village of Brewster; NYSDHSES
Action Location	-
Summary of Original Problem	Putnam County's LEPC is inactive and there is a desire to better integrate capacities and train municipal staff on hazard mitigation and floodplain management.
Summary of Solution (Project)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically: •Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation. •Workshops and Seminars to build local capabilities in floodplain management and disaster recovery potentially to include: o NFIP Community Rating System (CRS) o Benefit-Cost Analysis (BCA) o Substantial Damage Estimating (SDE) o NFIP Elevation Certificates (EC) o Certified Floodplain Manager (CFM) Training and Certification o County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures
Action Category	EAP, PI
Current Status – Please select one:	Discontinued – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

3.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Village of Brewster identified the following mitigation efforts completed since the last HMP:

- Culvert replacement on Oak Street and retaining wall on Marvin Street
- Culvert replacement on Green Parking Lot

3.7.3 Identified Issues

The Village of Brewster has identified the following vulnerabilities within their community for mitigation strategy development:

- A number of critical and essential facilities within the Village are vulnerable to power outages, which are becoming increasingly frequent as storms become more frequent and intense. The following facilities were identified as critical facilities without backup power:
  - Public Works Garage and Police Department (208 Main Street)
  - Putnam Community Foundation – 24 Senior Apartments (above 50 Main Street)

  - Mayor Mitchell Court – 24 Senior Apartments
  - 9 minor sewer lift stations
  - Medical Clinic (155 Main) – Federal qualified Health Care Facility
- The Village's water pump stations lack a backup power source. Brewster has a public water system that serves nearly 2,400 people. Additionally, the well fields have a prior contamination issue, and remedial measures included the installation of a pump for treated groundwater. In the case of a power outage, both the water pump station and remediation pump would cease working.
- The Village does not currently have any identified temporary sheltering facilities for Code Red and Code Blue events due to the regulations that are needed.
- A private mobile tower (WPML524), owned by the City of New York, is located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.

3.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Brewster participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Brewster 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 Village priorities.

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 3-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-BrewsterV-01. Generators for Critical Facilities

Lead Agency:	Critical Facility Managers	
Supporting Agencies:	Engineer, Village Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	A number of critical and essential facilities within the Village are vulnerable to power outages, which are becoming increasingly frequent as storms become more frequent and intense. The following facilities were identified as critical facilities without backup power: • Public Works Garage and Police Department (208 Main Street) • Putnam Community Foundation – 24 Senior Apartments (above 50 Main Street) • Mayor Mitchell Court – 24 Senior Apartments • 9 minor sewer lift stations • Medical Clinic (155 Main) – Federal qualified Health Care Facility	
Description of the Solution:	The Village will conduct a generator study at each facility to determine the correct sized generator needed at each facility. The Village will then acquire the funding for the purchase and installation of back-up power at the facilities.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4	
Benefits:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities and ensuring the power is reinstated rapidly will provide needed potable water for populations.	
Impact on Future Development:	This action results in protection of critical facilities that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Microgrid	Costly and difficult to implement.
	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.

Action 2027-BrewsterV-02. Water Pump Stations

Lead Agency:	Pump Stations Managers	
Supporting Agencies:	Engineer, Village Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Village's water pump stations lack a backup power source. Brewster has a public water system that serves nearly 2,400 people. Additionally, the well fields have a prior contamination issue, and remedial measures included the installation of a pump for treated groundwater. In the case of a power outage, both the water pump station and remediation pump would cease working.	
Description of the Solution:	Provide two emergency power transfer switches, excavation, cabling and labor to enable connection to a generator (alternate power supply). The two locations are separated by approximately 500 feet. The remote-control house manages the well pumps. For emergency transfer switch #1; Install 1 600 AMP Emergency transfer switch outdoors at the pumphouse. Excavate and pour a suitable foundation and structural frame to hold the NEMA 4X lockable cabinet adjacent to the pumphouse.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4	
Benefits:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities and ensuring the power is reinstated rapidly will provide needed potable water for populations.	
Impact on Future Development:	This action results in protection of critical facilities that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Microgrid	Costly and difficult to implement.
	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.

Action 2027-BrewsterV-03. Code Red and Code Blue Coordination

Lead Agency:	Critical Facility Managers	
Supporting Agencies:	Engineer, Village Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☒Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Village does not currently have any identified temporary sheltering facilities for Code Red and Code Blue events due to the regulations that are needed.	
Description of the Solution:	The Village will coordinate with the County for Code Red and Code Blue events and will ensure they advertise to Village residents about the identified locations. The senior centers in the Village would be a good option for sheltering, but are not yet equipped with backup power and are privately owned.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Village and County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4	
Benefits:	Code Red and Code Blue shelters are a proactive, life-saving measure that protects vulnerable populations, ensures rapid access to safe shelter, and strengthens municipal emergency response. They are especially valuable in cities with high homelessness rates, as they can save lives and reduce long-term public health costs.	
Impact on Socially Vulnerable Populations:	Emergency locations with generators for emergency heating and cooling shelter protect those that are vulnerable to power outages and extreme temperatures.	
Impact on Future Development:	This action results in protection of critical facilities that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Use neighboring County	May be located to far
	Use neighboring Municipality	May not have room for Village residents

Action 2027-BrewsterV-04. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Village Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	A private mobile tower (WPML524), owned by the City of New York, is located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.	
Description of the Solution:	The Village will encourage the facility manager to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s). There is a design in place to put in a bridge/culvert which will reduce flood risk.	
Estimated Cost:	Low	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of a critical facility in the Village.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect a critical facility, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Relocate facilities	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Table 3-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-BrewsterV-01	Generators for Critical Facilities	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
2027-BrewsterV-02	Water Pump Stations	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
2027-BrewsterV-03	Code Red and Code Blue Coordination	1	0	1	1	1	0	1	1	1	1	1	1	1	1	**12**	High
2027-BrewsterV-04	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

4. TOWN OF CARMEL

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

4.1 HAZARD MITIGATION PLANNING TEAM

The Town of Carmel identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments.

Table 4-1 summarizes the Town officials who participated in the development of the annex. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 4-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Michael Cazzari, Supervisor Address: 60 McAlpin Ave Phone Number: 845-628-1500 ext. 138 Email: msc1S@townofcarmelny.gov	Name/Title: Richard Franzetti, PE, Town Engineer Address: 60 McAlpin Ave Phone Number: 845-628-1500 ext. 181 Email:rjf@townofcarmelny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Richard Franzetti, PE, Town Engineer Address: 60 McAlpin Ave Phone Number: 845-628-1500 ext. 181 Email:rjf@townofcarmelny.gov	
Additional Contributors	
Name/Title: Michael Stern, Highway Superintendent Method of Participation: Reviewed annex and provided information necessary for annex development.	
Name/Title: Ed Spadaro, Building Inspector Method of Participation: Reviewed annex and provided information necessary for annex development.	
Name/Title: Nina Kallmeyer, Director of Recreation Method of Participation: Reviewed annex and provided information necessary for annex development.	
Name/Title: Kevin Kernan, Chief of Staff Method of Participation: Reviewed annex and provided information necessary for annex development.	

4.2 COMMUNITY PROFILE

4.2.1 Community Classifications

Table 4-2 summarizes classifications for community programs available to Carmel.

Table 4-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	No	-	-
NYSERDA Clean Energy Community	Yes	Not Designated	November 16, 2022
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

4.2.2 Community Profile

The Town of Carmel is located on the southern border of Putnam County The Town also includes three hamlets, Carmel, Mahopac and Mahopac Falls.

Table 4-3 through Table 4-6 note land area, population, and building stock information for the Town of Carmel.

Table 4-3. Total Land Area in the Town of Carmel

Jurisdiction	Total Land Area	
	Acres	Square Miles
Carmel (T)	23,025.4	36.0

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 4-4. Population Estimates in the Town of Carmel

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
33,576	34.4%	33,837	34.5%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 4-5. Vulnerable Populations in the Town of Carmel

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
6,694	19.8%	1,358	4.0%	517	1.5%	3,607	10.7%	1,498	4.4%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 4-6. General Building Stock in the Town of Carmel

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
12,221	$9,049,629,618	10,140	$5,493,409,567	1,926	$2,708,617,991	64	$170,974,989	91	$676,627,071

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

4.3 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 Carmel's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

4.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Carmel are shown in Figure 4-1 and Figure 4-2. 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 Carmel has significant exposure.

Figure 4-1. Carmel Hazard Area Map #1

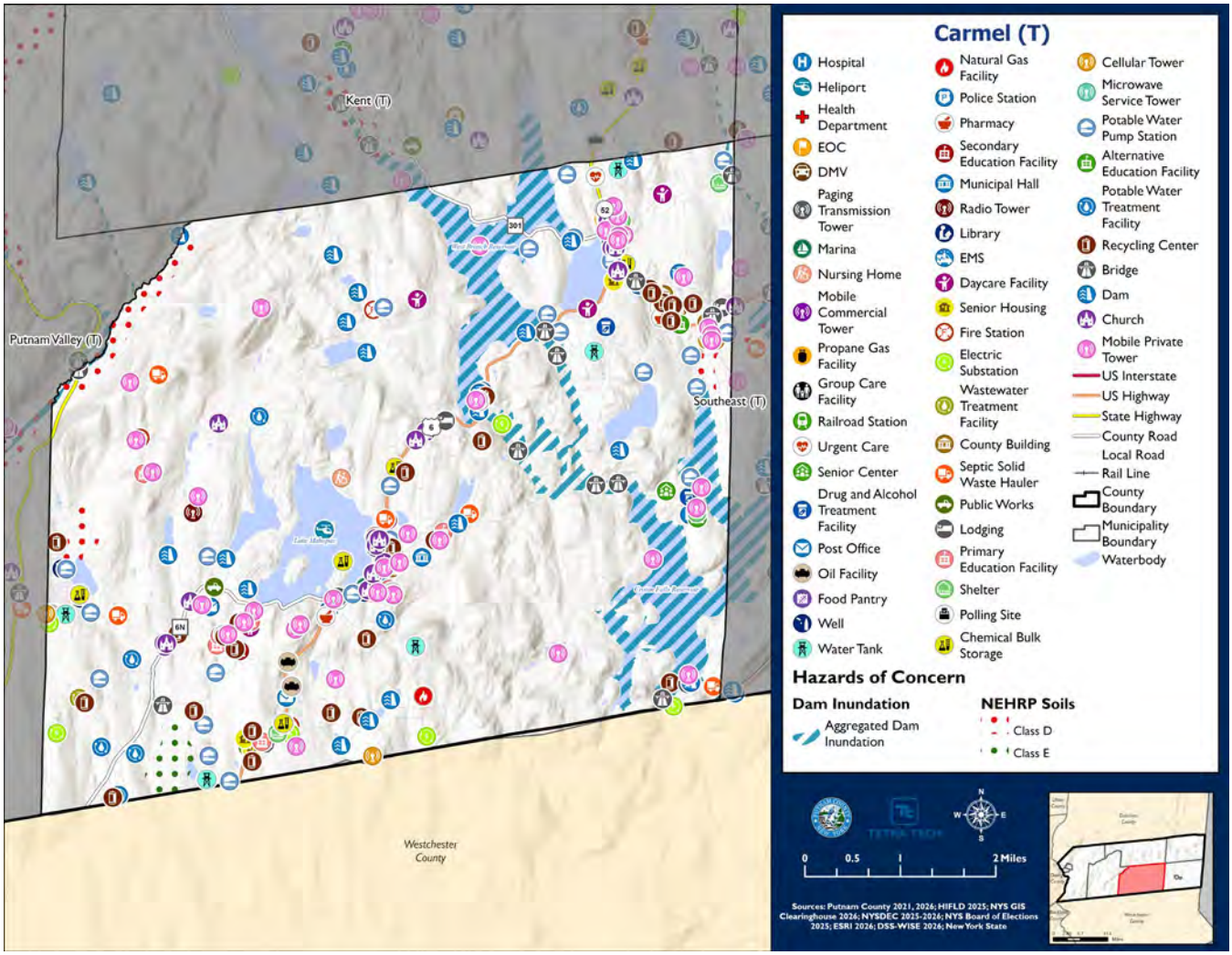
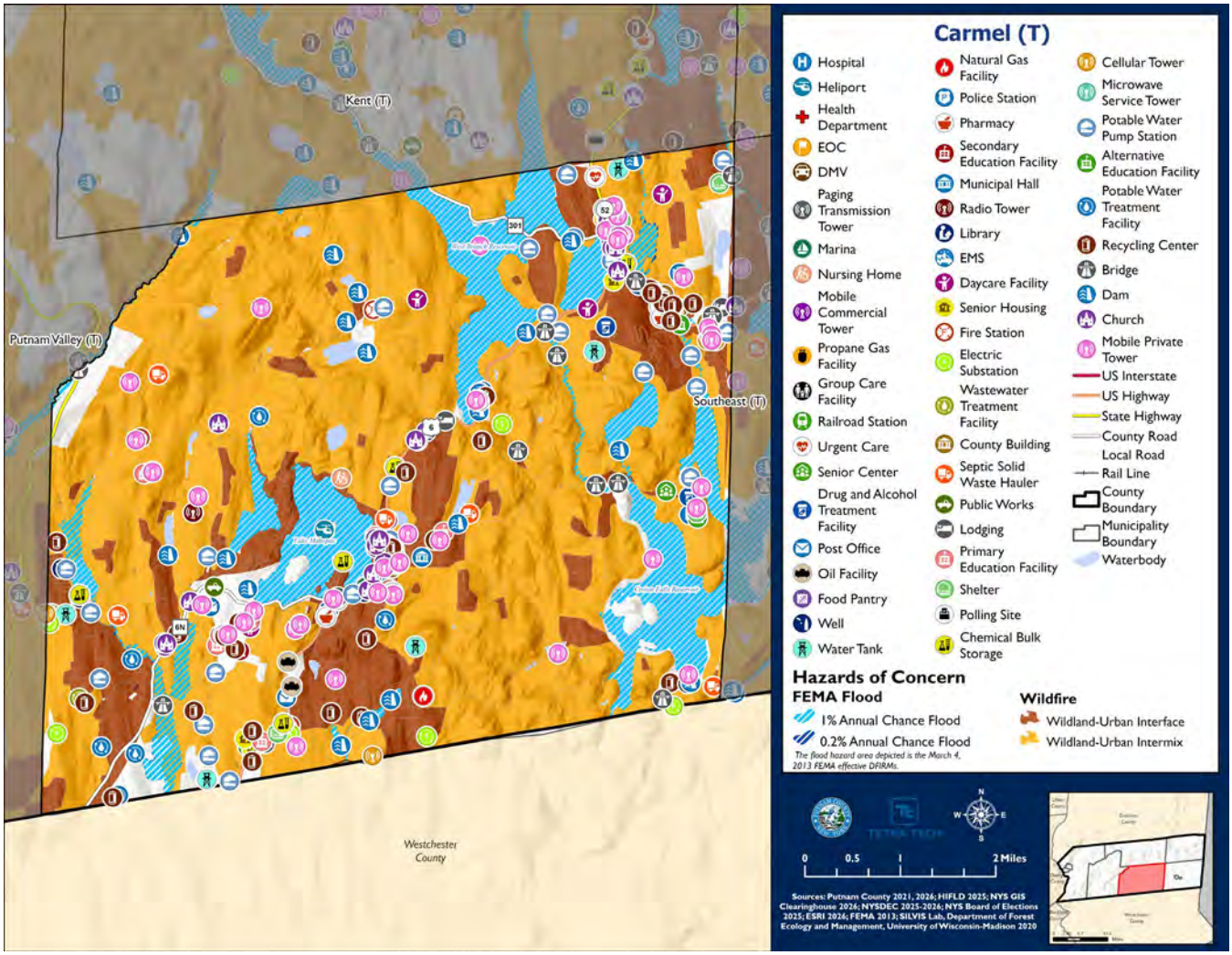


Figure 4-2. Carmel Hazard Area Map #2



4.3.2 Previous Event History

The history of natural and non-natural hazard events in Carmel is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 4-7 and Table 4-8 provide details on the loss and damage in Carmel during hazard events since the last hazard mitigation plan update.

Table 4-7. Presidential Disaster Declarations History in Carmel

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Carmel
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	Due to the COVID-19 pandemic the Town of Carmel provided management, control and reduction of immediate threats to public health and safety with the purchase of cleaning supplies for the disinfection of Town facilities and provided for the purchase and distribution of Personal Protective Equipment (PPE) for disinfecting and the first responders at Carmel Police Department, Town Hall and other Town facilities
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	The Highway Department and Town Operators worked significant overtime due to multiple downed trees due to high winds and floodwaters overtopping roadways, and damaging multiple control panels and pumps at various Town Water and Sewer facilities located int the Town of Carmel
August 21-24, 2021	EM-3565-NY	Hurricane Henri	No damages or losses
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	Town Operators worked significant hours and overtime due to high winds and floodwaters damaging multiple pumps and other viable necessary equipment at various Town Water and Sewer facilities located int the Town of Carmel
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	During the Incident period from July 9 through July 10, 2023, the Highway Department worked significant overtime due to the storm which had high winds and continuous rain resulted in heavy floods. Roads were undermined and/or flooded, streamed overflowed causing various wash outs

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 4-8. Hazard Event History in Carmel

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Carmel
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and a downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	Tree downed on US 6, but the road is a State road.
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	No damages or losses
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	No damages or losses

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Carmel
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No damages or losses
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	Highway responded as necessary to several locations for tree removal
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	No damages or losses
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	Highway responded as necessary to several locations for tree removal. Some flooding reported.

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

4.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 4-9 includes an inventory of critical facilities and infrastructure for the Town of Carmel.

Table 4-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Recycling Center Carmel (T)	Recycling Center	Y	Y	2027-CarmelT-01	-
Recycling Center Carmel (T)	Recycling Center	Y	Y	2027-CarmelT-01	-
Recycling Center Carmel (T)	Recycling Center	Y	Y	2027-CarmelT-01	-
Recycling Center Carmel (T)	Recycling Center	Y	Y	2027-CarmelT-01	-
Recycling Center Carmel (T)	Recycling Center	Y	Y	2027-CarmelT-01	-
Rite-Aid Pharmacy	Pharmacy	Y	Y	2027-CarmelT-01	-
The Arc of New York School	Alternative Education Facility	Y	Y	2027-CarmelT-01	-

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Arms Acres Outpatient Clinic	Drug and Alcohol Treatment Facility	Y	Y	2027-CarmelT-01	-
Putnam County Humane Society	County Building	Y	Y	2027-CarmelT-01	-
Putnam County Board of Elections	County Building	Y	Y	2027-CarmelT-01	-
SD4 Pump Station	Potable Water Pump Station	Y	Y	2027-CarmelT-01	-
SD2 Kelly Road Pump	Potable Water Pump Station	Y	Y	2027-CarmelT-01	-
SD2 Putnam Plaza Pump Station	Potable Water Pump Station	Y	Y	2027-CarmelT-01	-
Massaro	Heliport	Y	Y	2027-CarmelT-01	-
City of New York - WPML525	Mobile Private Tower	Y	Y	2027-CarmelT-01	-
City of New York - WPIB472	Mobile Private Tower	Y	Y	2027-CarmelT-01	-
City of New York - WPTF852	Mobile Private Tower	Y	Y	2027-CarmelT-01	-
City of New York-WQCI937	Mobile Private Tower	Y	Y	2027-CarmelT-01	-
Mahopac Marina - WRYJ793	Mobile Private Tower	Y	Y	2027-CarmelT-01	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Seven bridges and five dams were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

4.3.4 Local Hazard Impacts Assessment

Representatives from the Town of Carmel Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 4-10.

Table 4-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	There are 3 HHPDs in the Town. Although EAPs are up to date, the risk is still present.
Disease Outbreak	Some impacts were felt during the COVID-19 pandemic.
Drought	The Town has 13 water districts which supply water across the jurisdiction. The Town's Water Code provides regulations for water supply emergencies and issues.
Earthquake	Minimal structural shaking.
Extreme Temperatures	Health, safety and wellbeing of residents

Hazard Name	Local Impacts: People, Community Services, Local Economy
Flood	Lake Secor has vegetative growth issues which result in flooding. Culverts in Town are undersized and could use improvements to minimize flood risk. Many of the roads in Town have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt.
Harmful Algal Blooms	Lake Casse is a recreational lake frequently used in the summertime. There have been occurrences of harmful algal blooms on the lake.
Severe Storm	Trees are downed due to high winds from storms
Severe Winter Storm	Trees are downed due to snow and ice accumulation from winter storms
Terrorism	No large impacts, but water districts could be at risk
Wildfire	Wildfires have historically been on the smaller side in Town and have occurred primarily on State lands. Mutual aid agreements are in place for response.

4.3.5 Vulnerable Community Assets

Representatives from the Town of Carmel Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 4-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 4-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Not applicable	**Area: Concentration of Local Businesses, Major Employers**	Brewster Road (Route 6) from Seminary Hill Road into Connecticut
Area: Concentration of Residences	Lake Secor historically floods due to vegetation overgrowth within and along the outlet stream. This then causes flooding of properties and closure of roadways adjacent to the lake.	**Local Roads, Highways, Culverts, Bridges**	Lake Secor will have excess water and floods the adjacent properties and Lake Shore Drive E. Increased development and impermeable surfaces have caused flooding on Memory Lane. Many of the roads in Town have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt.
Municipal Buildings	The Justice Center requires upgrades in order to function as a shelter.	**Medical Centers (non-hospital)**	No known issues
College/University	Not applicable	**Place of Worship**	There are several churches in Town but no known issues.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	The Justice Center requires upgrades in order to function as a shelter.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	Not applicable

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Cultural/Historic Buildings/Sites	No known issues	**Schools (K-12)**	No known issues
Elder-care Facilities	There are elder-care facilities in Town but no known issues.	**Utilities**	Trees are downed from severe summer and winter storms which can also knock down power lines
Fire/Police Stations	No known issues	**Wastewater Treatment Plants**	Town has 8 sewer districts
Gas Stations, Grocery Stores, Supermarkets	No known issues	**Water: Drinking Water Resources**	Town has 13 water districts
Hospitals	No known issues	**Other**	Not applicable

4.3.6 Dams

Table 4-12 includes all dams in the Town of Carmel. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 4-12. Dams Located in Carmel

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-1069	Long Pond Dam	TR-WEST BRANCH RESERVOIR	TOWN OF CARMEL	Local Government	Recreation	Low Hazard Dam
231-1406	Upper Teakettle Spout Lake Dam	TR-PLUM BROOK	TOWN OF CARMEL	Local Government	Recreation	Intermediate Hazard Dam
231-1600	Upper Lake Road Dam	TR-WEST BRANCH RESERVOIR	LAKE HAVEN ASSOCIATION	Private	Recreation	Low Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-1797	Lake Casse Dam	TR-CROTON FALLS RESERVOIR	TOWN OF CARMEL	Local Government	Recreation	Intermediate Hazard Dam
231-5139	Willow Pond Subdivision Dam	TR-W BRANCH WEST RESERVOIR	Not Found	Not Found	Other	Low Hazard Dam
231-5376	Dixon Lake Road Dam	-	TOWN OF CARMEL	Local Government	Other	Low Hazard Dam
231-4610	Lake Gleneida Dam	TR-W BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Recreation	Low Hazard Dam
231-4611	Lake Gilead Dam	TR-W BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Recreation	Low Hazard Dam
231-4783	Glencoma Lake Dam	PLUM BROOK	THOMAS KILKENNY	N/A	Recreation	Low Hazard Dam
231-4784	Teakettle Spout Lake Dam	PLUM BROOK	TOWN OF CARMEL	Local Government	Fire Protection, Stock, Or Small Farm Pond, Recreation	Low Hazard Dam
231-0480	Croton Falls Dam	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0511A	West Branch Dam	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0511B	Carmel Auxiliary Dike	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0755	Palmer Lake Dam	MICHAEL BROOK	RALPH S PALMER	N/A	Recreation	Low Hazard Dam
213-0481	Kirk Lake Dam	TR-MUSCOOT RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Recreation, Water Supply - Secondary	Intermediate Hazard Dam
213-4462	Lake Mahopac Dam	MUSCOOT RIVER	TOWN OF CARMEL	Local Government	Recreation	Intermediate Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-2220	Lake Macgregor Dam	TR-MUSCOOT RIVER	Putnam County Department of Public Works	Local Government	Recreation	Intermediate Hazard Dam
231-5926	Dratfield Dam	Trib - Coltron River	James and Chiara Dratfield	Private	Recreation	Low Hazard Dam

Information about dam risk in the Town of Carmel is detailed below.

Dams identified in the NYS DEC data base are not accurate. Lake Gleneida Dam is a sluiceway, not a dam. Dratfield Dam is not located in the Town of Carmel.

Croton Falls Dam, West Branch Dam, and Carmel Auxiliary Dike are all high hazard and have the potential to impact people, property, and environment downstream.

4.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 4-13 identifies the preliminary hazard ranking for Carmel, whether the Town agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 4-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	Medium	There are 3 HHPDs in the Town. Although EAPs are up to date, the risk is still present.	Medium
Disease Outbreak	Medium	Agree	-	-	Medium
Drought	High	Disagree	Medium	The Town has 13 water districts which supply water across the jurisdiction. The Town's Water Code provides regulations for water supply emergencies and issues.	Medium
Earthquake	Low	Agree	-		Low

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Extreme Temperatures	Medium	Agree	-		Medium
Flood	Low	Disagree	Medium	Areas of the Town have repeatedly flooded roadways during periods of heavy rain.	Medium
Harmful Algal Blooms	Medium	Agree	-		Medium
Severe Storm	High	Agree	-		High
Severe Winter Storm	High	Agree	-		High
Terrorism	Low	Agree	-		Low
Wildfire	High	Disagree	Medium	Wildfires have historically been on the smaller side in Town and have occurred primarily on State lands. Mutual aid agreements are in place for response.	Medium

4.4 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 4-14 through Table 4-17.

4.4.1 Development and Permitting

Table 4-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes, Engineering, Building, Planning, Zoning, ECB
What is your process for tracking building permits?	Digital system
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes
Does your community have a buildable land inventory? If yes, please describe.	No, may be developed as part of the comprehensive plan

Table 4-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020	Permit information was not provided by the Town for inclusion in this plan.			
Total Permits				
Permits within SFHA				

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2021				
Total Permits				
Permits within SFHA				
2022				
Total Permits				
Permits within SFHA				
2023				
Total Permits				
Permits within SFHA				
2024				
Total Permits				
Permits within SFHA				
2025				
Total Permits				
Permits within SFHA				

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

Table 4-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
The Town did not identify any recent major development or infrastructure from 2020 to present					

Table 4-17. 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 Zones*	Description / Status of Development
Centennial Golf Subdivision Toll Brothers	residential	15	44.-2-2 3	Wildfire Intermix Hazard Area	Approved by Board Committee
Carmel Residential	residential	33	55.14-1-35	Wildfire Intermix Hazard Area	Anticipated - No Approval to Date

4.5 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 4-1 is responsible for maintaining this information.

4.5.1 NFIP Statistics

Table 4-18 summarizes the NFIP policy and claim statistics for the Town of Carmel.

Table 4-18. Carmel NFIP Summary of Policy and Claim Statistics

NFIP Community Number	360669#
FEMA 2020 NFIP Data	
# Policies	73
# Claims (Losses)	122
Total Losses Claimed	$288,727
# Repetitive Loss Properties (NFIP definition)	10
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	14
Repetitive Loss Events	6
Net Building Payment	$63,093
Net Contents Payment	$11,665
Total Net Payment	$74,758

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 2020, 2026

Note: "-" = information unavailable

4.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 4-19.

Table 4-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Lake Secor has vegetative growth issues which result in flooding. Culverts in Town are undersized and could use improvements to minimize flood risk. Many of the roads in Town have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt. Increased development and impermeable surfaces have caused flooding on Memory Lane.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	Name/Title: Richard Franzetti PE Address: 60 McAlpin Ave Phone Number: 845-628-1500 EXT 181 Email:rjf@townofcarmelny.gov

NFIP Topic	Comments
	Yes – other roles include Town Engineer, Superintendent of Water (11 districts) and sewer (8 districts), Stormwater Management Officer, consultant to the Planning Board Yes for training
What local department is responsible for floodplain management?	The Town of Carmel Town Engineer or any other individual duly appointed by Resolution of the Town Board of the Town of Carmel is hereby appointed local administrator to administer and implement this chapter by granting or denying floodplain development permits in accordance with its provisions.
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2013
What is the date that your flood damage prevention ordinance was last amended?	§ 86, Adopted January 9, 2013.
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 4, 2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	The extent of the Town's NFIP services include the review of submittals to the Planning Board, Environmental Conservation Board, and Building Department and comparing these submittals against FEMA flood maps. The applicant is requested to fill out the Town of Carmel's permit applications. If there is any encroachment of the building into the floodplain, the applicant will be required to modify their application.
What are the barriers to running an effective NFIP program in your community, if any?	Not applicable
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	No
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	SUBSTANTIAL DAMAGE- Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	SUBSTANTIAL IMPROVEMENT- Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before the start of construction of the improvement. The term includes structures which have incurred substantial damage, regardless of the actual repair work performed.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	No
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	Unknown

NFIP Topic	Comments
Does the community maintain elevation records? If yes, please describe.	No
Describe any areas of flood risk with limited NFIP policy coverage.	Unknown
How does the community teach property owners or other stakeholders about the importance of flood insurance?	Not performed
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	Hard copy maps, downloaded version of maps, FEMA's National Flood Hazard Layer (NFHL) Viewer; NYSDEC GIS data
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, site plan review

4.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Carmel 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 Carmel to identify opportunities for integrating mitigation concepts into ongoing Town procedures.

4.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 4-20 and Table 4-21 detail the available planning and regulatory capabilities of the Town.

Regulatory Capabilities

Table 4-20. Regulatory Capabilities in Carmel

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	NYS Uniform and Energy Code 2020; Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the “2015 I-Codes”), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017).. Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries.	The Uniform Code (19 NYCRR Parts 1219 to 1229)	Building Department
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	No	-	-	-
Environmental Protection Ordinance	No	-	-	-
Flood Damage Prevention Ordinance	Yes	A community must adopt a Flood Damage Prevention Ordinance to participate in the National Flood Insurance Program	§ 86, Adopted January 9, 2013.	Egnineering
Growth Management	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	Yes	This requires urbanized areas (local governments) to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events to waterbodies to the "maximum extent practicable". The goal of the program is to improve water quality and recreational use of waterways. A Municipal Separate Storm Sewer Systems Permit, GP-0-15-003 is required.	EPA Phase II Stormwater Rule and §156 X and XII	Engineering
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	-	-	-
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a)The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a	Planning Board
Stormwater Management Code	Yes	Codes Rules and Regulations of the State of New York, Title 6. Department of Environmental Conservation, Chapter X. Division of Water Resources, Subchapter A. General Article 3. State Pollutant Discharge Elimination System, Part 750. State Pollutant Discharge Elimination System(SPDES) Permits. New York Environmental Conservation Law, Article 17, Titles 7, 8 and Article 70. New development and redevelopment projects that result in a land disturbance of one acre or greater, including projects less than one acre if they are part of a larger common plan of development or sale or if controlling such activities in a particular watershed is require a permit by the Department	§156 X and XII	Town
Subdivision Code	Yes	Subdivision is defined in the State enabling Statutes as: the division of any parcel of land into a number of lots, blocks, or sites as specified i a local ordinance, law or regulation, with or without streets or highways, for the purpose of sale, transfer of ownership, or development. There is not a requirement by NYS for subdivisions. Each municipality is permitted to further define subdivision for its own purposes in connection with its subdivision review procedure. The enabling statutes provide that a plat showing a division of land which is subject to a municipality's subdivision regulations, may not also be subject to review under its site plan review authority. (general city law s. 32 & 33, Town Law s. 276 & 277, Village Law s. 7-728 & 7-730).	Chapter 131, Adopted June 9, 1972	Local Planning Board
Wellhead Protection	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Zoning/Land Use Code	Yes	Article IX, Section 2, of the State Constitution and by the various state enabling statutes. In New York, the zoning enabling acts continue to require that zoning be undertaken “in accord with a well-considered plan”11 or “in accordance with a comprehensive plan.”12 Unless the town, city or village has adopted a comprehensive plan document using the more recently-enacted statutes (described later herein), local officials must refer to the extensive body of case law to determine how zoning can meet the more general “comprehensive plan” requirement.**May be impacted by State wetland regulations which protect wetlands greater than 12.4 acres and established buffer zones. Regulated at local level	Chapter 156 Repealed and Replaced March 5, 2025.	Planning Board and Building Department

Planning Capabilities

Table 4-21. Planning Capabilities in Carmel

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	Yes	Downtown Mahopac Revitalization -Swan Cove” – Resolution Declaring Notice of Intent of Town Board to Serve as SEQR Lead Agency Downtown Mahopac Revitalization-Swan Cove adopted on July 2, 2025.	Downtown Mahopac Revitalization - Swan Cove	Town Board
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	Optional under NYS Law, municipality may adopt a comprehensive plan or proceed through a planning process which has evolved based on case law. (Per State Legislature General City Law section 28a, Town Law s. 272a, Village Law s. 7-722) **May be impacted by State wetland regulations which protect wetlands greater than 12.4 acres and established buffer zones. Regulated at the local level	Town of Carmel 2024-2035 Comprehensive Plan adopted November 6, 2024.	Town Board
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	Yes	A local government can decide to adopt its capital plan pursuant to General Municipal Law Section 99-g.	General Municipal Law Section 99-g.	Town Board

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B. The plan is developed and maintained by the New York State Office of Emergency Management and agencies that comprise the NYS Disaster Preparedness Commission (DPC).The Town of Carmel has a CEMP and it is maintained by the Town Supervisor.	NYS Executive Law, Article 2B	Supervisor
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	Yes	The State Pollutant Discharge Elimination System (SPDES) permit program is a primary way the DOW implements its watershed protection and restoration activities.	§86	Engineering
Habitat Conservation / Wildlife Management Plan	Yes	Laws related to habit protection and biodiversity control the use and application of certain pesticides, demolition projects and clearing of vegetated areas. Identifying certain critical habitat areas could be included in the Comprehensive Plan. Critical Habitat is a part of certain State and Federal Permitting. The State had a Wildlife Action Plan requires to maintain eligibility for the State Wildlife Grant Program. The purpose of the Environmental Conservation Board (ECB) of the Town of Carmel is to protect, preserve, properly maintain and require prudent use of the wetlands, bodies of water and watercourses and their associated wildlife within the Town of Carmel.	§ 89	Planning
Local Waterfront Revitalization Plan	No	-	-	-
Open Space Plan	Yes	Planning boards prepare or oversee the preparation of local comprehensive plans, which should include an open space element. The primary purpose of a local open space plan is to cause the important open lands in the community to be conserved for open space uses.	NYS Constitution - Article 9; Statute of Local Governments. Section 10 (7)	ECB
Post-Disaster Recovery Plan	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Public Health Plan	No	-	-	-
Sheltering Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	The Town has an active stormwater management program, which addressed both stormwater quality, as well as quantity which often has relevance to localized flooding issues. In addition to several completed stormwater management projects that have served to address localized flooding problems, the Town has included several planned stormwater management projects, including those to increase stormwater detention throughout the community. Stormwater management practices have been integrated into the Town Zoning Regulations.	§156 X and XII	Engineering
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

4.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 4-22 details the available administrative and technical capabilities of the Town.

Table 4-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	No	-
Construction/Building/Code Enforcement Department	Yes	Building Department
Economic Development Commission/Committee	No	-

Capability Type	In Place in Municipality? Yes or No	Comments
Emergency Management/Public Safety Department	Yes	Supervisor/Engineering
Environmental Commission/Specialist	No	-
Grant Writer	Yes	Town Board
Maintenance Programs to Reduce Risk	Yes	Town Highway
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	Town Board/Highway
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	Supervisors' Office
Planning Board	Yes	The Planning Board is tasked with guiding the physical, social, and economic growth of a community. It acts primarily to manage land use, balance developmental needs with environmental and public safety concerns, and advise elected officials on community development.
Planning Department	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	No	-
Planner or Engineer with knowledge of land development and land management practices	Yes	Engineering/Planning – outside planning consultant
Planners or engineers with an understanding of natural hazards	Yes	Engineering/Planning – outside planning consultant
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	Building/Engineering/Planning
Professionals trained in conducting damage assessments	Yes	Engineering/Building
Public Works/Highway Department	Yes	Highway Department
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	No	-
Surveyor(s)	No	-

Capability Type	In Place in Municipality? Yes or No	Comments
Zoning Board of Appeals	Yes	The Zoning Board evaluates requests to deviate from local land-use laws.
Other	No	-

4.6.3 Fiscal Capability

Table 4-23 summarizes financial resources available to Carmel.

Table 4-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement 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 (non-FEMA) funding programs	Yes, USDOJ and USDHS for assistance in ensuring public safety.
FEMA funding programs	Yes, for assistance with disaster recovery.
Other State funding programs	Yes, DASNY, CHIPS, JCAP, CREST provides programs that support local infrastructure and community projects
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Yes, Local Funding from State, County for assistance in ensuring public safety.

4.6.4 Education and Outreach Capability

Table 4-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 4-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	Yes

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Hazard awareness campaigns, such as school and community programs and events	No
Hazard mitigation information available on your website	No
Local News	No
Natural disaster/safety programs in place for schools	No
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No
Public information officer or communications office	No
Social media for hazard mitigation education and outreach	Yes – Facebook, Instagram, Youtube
Warning systems for hazard events	Yes, VMB's/Email Notification/Code Red

4.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 4-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 4-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Strong
Earthquake	Weak
Extreme Temperatures	Moderate
Flood	Moderate
Harmful Algal Blooms	Strong
Severe Storm	Strong
Severe Winter Storm	Strong
Terrorism	Moderate
Wildfire	Moderate

4.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

4.7.1 Past Mitigation Action Status

The tables below indicate progress on the Town's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

T. Carmel-1—Carmel Repetitive Loss	
Hazards Addressed	Flood
Lead Agency / Department	TOC
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Due to frequent flooding events in the Town of Carmel, there are 10 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.
Summary of Solution (Project)	The municipality will conduct an outreach program to all repetitive loss properties. The outreach will inform the property owners of this repetitive loss status and provide mitigation alternatives that the property can do to protect the structure from future flood losses. If the property owner is interested in structural mitigation measures, the municipality will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement the mitigation measure chosen (acquisition, elevation, moving).
Action Category	EAP, PP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-2—Lake Mahopac Dam Repairs	
Hazards Addressed	Lake Mahopac
Lead Agency / Department	TOC
Supporting Agency / Department	-
Action Location	Lake Mahopac
Summary of Original Problem	The New York State Department of Environmental Conservation (NYSDEC) has stipulated an Order on Consent (OOC) that requires an engineering assessment (EA) to meet NYSDEC Dam safety requirements
Summary of Solution (Project)	Perform an environmental assessment and remedy identified deficiencies in the Lake Mahopac Dam.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Completed

T. Carmel-3—Critical Facility Outreach	
Hazards Addressed	Flood
Lead Agency / Department	TOC
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	According to FEMA flood maps for the community, numerous critical facilities are located within the 1% annual chance flood area. During periods of heavy rain or a flood event could cause severe damage to the property.
Summary of Solution (Project)	The municipality will notify the facility owner/operator that the structure is located within a floodplain and provide various floodproofing measures that the owner/operator can implement to protect the structure.
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-4—Dredge Lake Secor Outlet Stream	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Carmel
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Lake Secor historically floods due to vegetation overgrowth within and along the outlet stream. This then causes flooding of properties and closure of roadways adjacent to the lake. These situations lasted for several days during and subsequent to the recent hurricanes.
Summary of Solution (Project)	Dredging of the outlet stream, from the Lake to Secor Road, will increase the hydraulic capacity of the outlet stream, and minimize, if not eliminate, flooding along the lakeshore.
Action Category	SIP, NR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-5—Strategic Roadway Tree Removals / Clearing	
Hazards Addressed	Severe Storm, Severe Winter Storm
Lead Agency / Department	Town of Carmel
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Selective tree cutting to minimize roadway closures during severe storm events, which have become more frequent, severe and unseasonal
Summary of Solution (Project)	Selective tree cutting to minimize roadway closures during severe storm events
Action Category	SIP, NR
Current Status – Please select one:	Discontinue – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Ongoing Capability

T. Carmel-6—Engineering Hazard Evaluations of Town Park District Dams:	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Carmel
Supporting Agency / Department	-
Action Location	Town Park District Dams
Summary of Original Problem	The existing impoundments at Upper & Lower Teakettle, Mahopac and Casse Lakes, which lie within Town Park Districts, require NYSDEC hazard classification and possible upgrades, and development of Emergency Action Plans (EAP). Upon completion of these reports, recommended improvements will be implemented.
Summary of Solution (Project)	The Engineering evaluations will establish the adequacy of the spillways of each dam, as well as upgrades necessary to safely pass the DEC-mandated Design storm event so as to avoid catastrophic dam failure.
Action Category	SIP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-7—Memory Lane Drainage Improvements:	
Hazards Addressed	Flood; Severe storms
Lead Agency / Department	Town of Carmel
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Replacement/upgrade of existing roadway drainage piping, to eliminate roadway over-topping/washout in extreme storm events
Summary of Solution (Project)	Increasing the size and capacity of the cross-culvert under Memory Lane will minimize roadway over-topping and possible roadway closure
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Completed

T. Carmel-8—Designate shelters for vulnerable populations	
Hazards Addressed	All hazards
Lead Agency / Department	Town of Carmel - Supervisor
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Additional shelters are needed to house residents during hazard events.
Summary of Solution (Project)	The Town will designate additional shelters to support residents.
Action Category	EAP, ES
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-9—Road Resurfacing	
Hazards Addressed	All hazards
Lead Agency / Department	Town of Carmel – Highway Department
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Roads throughout the Town are in varying shape due to weathering and use.
Summary of Solution (Project)	Resurface Town streets based on priority/need
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-10—Public Safety/Justice Center/Community Center	
Hazards Addressed	All hazards
Lead Agency / Department	Town of Carmel – Highway Department and Engineering
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Justice Center requires upgrades in order to function as a shelter.
Summary of Solution (Project)	Upgrade Public Safety/Justice Center/Community Center building in order to function as a shelter during hazard events.
Action Category	SIP, ES
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not appliable
If discontinue, explain why	Not applicable

T. Carmel-11—Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities	
Hazards Addressed	All hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	-
Action Location	EAP, PI
Summary of Original Problem	The Town is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings.
Summary of Solution (Project)	In conjunction with nearby communities and/or the County, the Town can participate in re-established Local Emergency Planning Committees (LEPCs) and workshops and seminars for both the public and municipal staff.
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not appliable
If discontinue, explain why	Not applicable

T. Carmel-12—High Hazard Dam Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Carmel
Supporting Agency / Department	NYSDEP
Action Location	-
Summary of Original Problem	The Croton Falls Dam, West Branch Dam, Carmel Auxiliary Dam, and Lake Mahopac Dam are located within the Town of Carmel and are classified as "high hazard" Class C dams.
Summary of Solution (Project)	The Town of Carmel will collaborate with the NYCDEP on necessary EAP updates, as well as inspections and engineering assessments of the above dams. If significant increased risk is found at the Dam, the Town and NYCDEP will work together to develop a plan to update and improve the conditions of the dam.
Action Category	EAP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Carmel-13—Intermediate Hazard Dam Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Carmel
Supporting Agency / Department	NYSDEP
Action Location	-
Summary of Original Problem	The Kirk Lake Dam, Lake MacGregor Dam, Lake Casse Dam, and Upper Teakettle Spout Lake Dam are located within the Town of Carmel and are classified as “intermediate hazard” Class B dams.
Summary of Solution (Project)	The Town will coordinate with the NYSDEC and the dam owners about any changes to the status of the Dam and aid in the development of updated EAPs as necessary.
Action Category	EAP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 20277 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

4.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Town of Carmel identified the following mitigation efforts completed since the last HMP:

- The highway department has several ongoing projects which assist in the mitigation of natural hazards. This projects include the paving of deteriorating roadways, upgrades to drainage on failing roadways, equipment replacement to enable more efficient and safer work, upgrades to traveling hazards (i.e.: widening of intersections and sharp turns for safer roadways and increased sight distance).

4.7.3 Identified Issues

The Town of Carmel has identified the following vulnerabilities within their community for mitigation strategy development:

- There are several critical facilities which are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level. At risk critical facilities include:
  - (5) Recycling Centers
  - Rite-Aid Pharmacy
  - The Arc of New York School
  - Arms Acres Outpatient Clinic
  - Putnam County Humane Society
  - Putnam County Board of Elections
  - SD4 Pump Station
  - SD2 Kelly Road Pump
  - SD2 Putnam Plaza Pump Station
  - Massaro Heliport
  - City of New York Mobile Towers (WPML525, WPIB472, WPTF852, WQCI937)
  - Mahopac Marina Mobile Tower (WRYJ793)
- Due to frequent flooding events in the Town of Carmel, there are 10 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.
- Lake Secor occasionally has excess water and floods the adjacent properties and Lake Shore Drive E, especially during periods of heavy rains from severe storms. Excessive vegetative growth also contributes to flooding from the Lake. Critical sewer infrastructure in area is vulnerable.
- Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Increased development and impermeable surfaces have caused flooding on Memory Lane. Increasing the size and capacity of the cross-culvert under Memory Lane will minimize roadway over-topping and possible roadway closure.
- Lake Casse is a recreational lake frequently used in the summertime. There have been occurrences of harmful algal blooms on the lake. According to the Harmful Algal Bloom Action Plans developed by NYS DEC for other lakes in Putnam County, the significant sources of phosphorus loading in lakes are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in the lakes can impact recreational opportunities and cause a loss of income.

- The Kirk Lake Dam, Lake MacGregor Dam, Lake Casse Dam, and Upper Teakettle Spout Lake Dam are located within the Town of Carmel and are classified as “intermediate hazard” Class B dams. Failures associated with intermediate hazard dams may cause significant damage to property and project operation, but loss of human life is not envisioned. This classification applies to predominantly rural agricultural areas, where dam failure may damage isolated homes, major highways or railroads or cause interruption of service of relatively important public utilities.
- The proper identification and location of dams in a jurisdiction is prudent to understand the risk surrounding dam failure and consequent flood risk from a dam failure. Dams identified in the NYS DEC data base are not accurate for the Town – Lake Gleneida Dam is a sluiceway, not a dam, and Dratfield Dam is not located in the Town of Carmel.
- Many of the roads in Town have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt. Flood prone roads not only interrupt the movement of persons and goods but can lead to isolation issues where first responders are unable to reach their destination and cause evacuation routes to be inaccessible. Flooded road ways may be caused by debris in culverts from severe storms and severe winter storms. There are multiple roads in Town, including those surrounding the Lake Mahopac (Intermediate), Lake Casse (Intermediate), Upper Teakettle (Intermediate), and Teakettle (Low) Dams, which may benefit from flood mitigation strategies, such as the elevation of the roadways or the hardening of the infrastructure surrounding them to reduce likelihood of flooding.
- The existing impoundments at Upper & Lower Teakettle, Mahopac and Casse Lakes, which lie within Town Park Districts, require NYSDEC hazard classification and possible upgrades, and development of Emergency Action Plans (EAP). Upon completion of these reports, recommended improvements will be implemented.
- Following emergencies or disasters, sheltering may be required to house impacted persons. Severe winter storms and severe storms can knock out power, cause downed trees to fall on houses; flooding from severe storms or dam failure can cause damage worse enough to displace households; destruction of property from wildfires and earthquakes can leave families without a home. There is a need to identify additional shelters to house residents during and after hazard events. The Justice Center/Town Hall (60 McAlpin Avenue, Mahopac, NY 10541) is an existing identified facility, but it requires upgrades in order to meet American Red Cross (ARC) criteria to act as a sheltering facility.
- The Town is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.
- The Croton Falls Dam is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, transportation routes including Route 22, Route 202, Route 684, Croton Falls Road, Stoneleigh Avenue, among others, and loss of water supply. During the dam’s last inspection in March 2024, no deficiencies were noted.
- The West Branch Dam is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, a historical landmark, transportation routes including Route 6, meadowlark Drive Colonel Glenn Drive, among others, and loss of water supply. During the dam’s last inspection in March 2025, it was found to be deficiently maintained.
- The Carmel Auxiliary Dike is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, transportation routes including

Route 6, Drewville Road, Crafts Road, among others, and loss of water supply. During the dam's last inspection in March 2025, no deficiencies were noted.

4.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Carmel participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Carmel 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 Town priorities.

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 4-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-CarmelT-01. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are several critical facilities which are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level. At risk critical facilities include: • (5) Recycling Centers • Rite-Aid Pharmacy • The Arc of New York School • Arms Acres Outpatient Clinic • Putnam County Humane Society • Putnam County Board of Elections • SD4 Pump Station • SD2 Kelly Road Pump • SD2 Putnam Plaza Pump Station • Massaro Heliport • City of New York Mobile Towers (WPML525, WPIB472, WPTF852, WQCI937) • Mahopac Marina Mobile Tower (WRYJ793)	
Description of the Solution:	The Town will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s).	
Estimated Cost:	Low	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of several critical facilities in the Town.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate facilities	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-CarmelT-02. Repetitive Loss Properties

Lead Agency:	Engineering	
Supporting Agencies:	Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Due to frequent flooding events in the Town of Carmel, there are 10 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.	
Description of the Solution:	The municipality will conduct an outreach program to all repetitive loss properties. The outreach will inform the property owners of this repetitive loss status and provide mitigation alternatives that the property can do to protect the structure from future flood losses. If the property owner is interested in structural mitigation measures, the municipality will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement the mitigation measure chosen (acquisition, elevation, moving).	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Town's current NFIP capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-CarmelT-03. Dredge Lake Secor Outlet Stream

Lead Agency:	Engineer	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Lake Secor occasionally has excess water and floods the adjacent properties and Lake Shore Drive E, especially during periods of heavy rains from severe storms. Excessive vegetative growth also contributes to flooding from the Lake. Critical sewer infrastructure in area is vulnerable.	
Description of the Solution:	Dredging of the outlet stream, from the Lake to Secor Road, will increase the hydraulic capacity of the outlet stream, and minimize, if not eliminate, flooding along the lakeshore.	
Estimated Cost:	High	
Potential Funding Sources:	NYS DEC, Town Budget	
Implementation Timeline:	5 years	
Goals Met:	1, 3	
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.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
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:	This action improves the Town's reliability in terms of transportation.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate all flood-prone road system	Not feasible
	Fill the lake	Cost prohibitive

Action 2027-CarmelT-04. Undersized Culverts

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Increased development and impermeable surfaces have caused flooding on Memory Lane. Increasing the size and capacity of the cross-culvert under Memory Lane will minimize roadway over-topping and possible roadway closure.	
Description of the Solution:	The Town Engineer will complete an engineering survey of the drainage systems in Town that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town Highway Department will complete the necessary upsizing for the culverts.	
Estimated Cost:	TBD after study is complete	
Potential Funding Sources:	FEMA HMA, CHIPS, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 2027-CarmelT-05. Reduce HAB Occurrences

Lead Agency:	Town Board		
Supporting Agencies:	Putnam County Health, NYS DEC, NYS DOH		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☒Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	Lake Casse is a recreational lake frequently used in the summertime. There have been occurrences of harmful algal blooms on the lake. According to the Harmful Algal Bloom Action Plans developed by NYS DEC for other lakes in Putnam County, the significant sources of phosphorus loading in lakes are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in the lakes can impact recreational opportunities and cause a loss of income.		
Description of the Solution:	The Town will work with Putnam County Health, NYS DEC, and NYS DOH to develop Harmful Algal Bloom Action Plans for various lakes in the Town, and work to accomplish the following actions, as appropriate, to reduce risk: • Construct a wastewater treatment plant and install infrastructure required to connect homes; • Stabilize and reinforce the banks of connecting rivers, creeks, brooks, and streams; • Create riparian buffers along streams to inhibit or restrict nutrient-enriched stormwater runoff and eroded soil from reaching the stream; and • Implement multiple stormwater Best Management Practices (BMPs) to reduce sediment loading into the lakes. This may include the purchase of a street sweeping vacuum truck to prevent sediment and organic debris from entering storm drains, ditches, tributaries, and the lakes.		
Estimated Cost:	High		
Potential Funding Sources:	PCMHAB (NOAA), NWQP (USGS), WEP (USDA), NYS DEC, Town Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 3		
Benefits:	Lake Casse is best intended for contact recreation (i.e., swimming and bathing), non-contact recreation (i.e., boating and fishing), aesthetics, and support of aquatic life. Addressing the HAB occurrences in the Lake can contribute to a safer recreational environment.		
Impact on Socially Vulnerable Populations:	Addressing the HAB occurrences in the Lake can contribute to a safer recreational environment.		
Impact on Future Development:	Not applicable		
Impact on Critical Facilities/Lifelines:	While Lake Casse is not a critical facility or a lifeline, the Lake is a source of income for the Town during the spring and summer seasons though beach goers, fishing licensing, and boating.		
Impact on Capabilities:	Not applicable		
Climate Change Considerations:	Increased occurrences in extreme heat can contribute to the growth of excess nutrients in lake environments. Anticipated increases in heavy rains can force additional runoff from surrounding properties toward and into Casse Lake.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low
Alternative	Action	Evaluation	
	No action	Current problem persists	

	No longer permit recreational use on lakes in the Town	Loss of income for the Town
	Institute ban on agricultural practices above the grades of all lakes	Loss of income for agriculture sector

Action 2027-CarmelT-06. Intermediate Hazard Dam Outreach

Lead Agency:	Highway Department		
Supporting Agencies:	Town Administration, County BES, NYS DEC, Dam Owners		
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The Kirk Lake Dam, Lake MacGregor Dam, Lake Casse Dam, and Upper Teakettle Spout Lake Dam are located within the Town of Carmel and are classified as “intermediate hazard” Class B dams. Failures associated with intermediate hazard dams may cause significant damage to property and project operation, but loss of human life is not envisioned. This classification applies to predominantly rural agricultural areas, where dam failure may damage isolated homes, major highways or railroads or cause interruption of service of relatively important public utilities.		
Description of the Solution:	The Town will coordinate with the NYS DEC, Putnam County and the private dam owners about any changes to the status of the Dam and aid in the development of updated EAPs as necessary. The Town will work with dam owners to ensure inspections and safety procedures are up to date. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Dam Owner will pursue funding support, permit approval from NYS DEC, and implement the cost-effective measures.		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget		
Implementation Timeline:	5 years		
Goals Met:	1, 2, 4, 6		
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.		
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.		
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.		
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 and strengthen the structural integrity of dam, as needed.		
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
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.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Utilize information from NYS DEC	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 2027-CarmelT-07. NYS DEC Dam Inventory Update

Lead Agency:	Engineer	
Supporting Agencies:	County BES, NYS DEC	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The proper identification and location of dams in a jurisdiction is prudent to understand the risk surrounding dam failure and consequent flood risk from a dam failure. Dams identified in the NYS DEC data base are not accurate for the Town – Lake Gleneida Dam is a sluiceway, not a dam, and Dratfield Dam is not located in the Town of Carmel.	
Description of the Solution:	The Town will communicate with NYS DEC to adjust list of dams which are currently identified within the jurisdiction. Adjustments will be made to both privately and publicly owned dams.	
Estimated Cost:	Low	
Potential Funding Sources:	Town Budget, NYS DEC	
Implementation Timeline:	2 years	
Goals Met:	2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Utilize data from NID	May not be accurate
	Walk jurisdictional boundaries to identify dams	Private dam locations may be inaccessible

Action 2027-CarmelT-08. Floodprone Roads

Lead Agency:	Highway Department	
Supporting Agencies:	Engineering	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Many of the roads in Town have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt. Flood prone roads not only interrupt the movement of persons and goods but can lead to isolation issues where first responders are unable to reach their destination and cause evacuation routes to be inaccessible. Flooded road ways may be caused by debris in culverts from severe storms and severe winter storms. There are multiple roads in Town, including those surrounding the Lake Mahopac (Intermediate), Lake Casse (Intermediate), Upper Teakettle (Intermediate), and Teakettle (Low) Dams, which may benefit from flood mitigation strategies, such as the elevation of the roadways or the hardening of the infrastructure surrounding them to reduce likelihood of flooding.	
Description of the Solution:	The Town will develop specific mitigation solutions for flood-prone road systems after conducting a flood study. Possible solutions may include: • Elevation of roadways • Installation or improvement of drainage systems • Regrading of roadway and soils • Resurfacing or reshaping roadways	
Estimated Cost:	TBD after mitigation technique is chosen	
Potential Funding Sources:	FEMA HMA, Town Budget, CHIPS	
Implementation Timeline:	Within 5 years	
Goals Met:	1	
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.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
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:	This action improves the Town's reliability in terms of transportation.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate all flood-prone road system	Not feasible
	Raise all flood prone roads	Cost prohibitive

Action 2027-CarmelT-09. Engineering Hazard Evaluations of Town Park District Dams

Lead Agency:	Engineer	
Supporting Agencies:	NYS DEC, Dam Owners	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The existing impoundments at Upper & Lower Teakettle, Mahopac and Casse Lakes, which lie within Town Park Districts, require NYSDEC hazard classification and possible upgrades, and development of Emergency Action Plans (EAP). Upon completion of these reports, recommended improvements will be implemented.	
Description of the Solution:	The Engineering evaluations will establish the adequacy of the spillways of each dam, as well as upgrades necessary to safely pass the DEC-mandated Design storm event so as to avoid catastrophic dam failure.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, NYS DEC, Town Budget, Dam Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-CarmelT-10. Shelter Identification and Upfits

Lead Agency:	Town Supervisor	
Supporting Agencies:	Town Board, American Red Cross, County BES	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☒Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	Following emergencies or disasters, sheltering may be required to house impacted persons. Severe winter storms and severe storms can knock out power, cause downed trees to fall on houses; flooding from severe storms or dam failure can cause damage worse enough to displace households; destruction of property from wildfires and earthquakes can leave families without a home. There is a need to identify additional shelters to house residents during and after hazard events. The Justice Center/Town Hall (60 McAlpin Avenue, Mahopac, NY 10541) is an existing identified facility, but it requires upgrades in order to meet American Red Cross (ARC) criteria to act as a sheltering facility.	
Description of the Solution:	The Town will evaluate existing Town-owned and maintained properties to identify which properties meet American Red Cross sheltering facility standards. If any identified sheltering locations do not meet ARC standards, the Town will work to upfit the facilities so the criteria is met.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HSGP, County BES, Town Budget	
Implementation Timeline:	5 years	
Goals Met:	1, 4	
Benefits:	Providing a sheltering location within the Town borders can assist in providing a “sense of normalcy” during an otherwise chaotic time. Sheltering locations keep individuals and families out of harm in a safe location.	
Impact on Socially Vulnerable Populations:	Vulnerable populations will have a location to shelter if impacted by a disaster or an emergency. Providing this location in Town assist in providing a “sense of normalcy”.	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	This action will expand the capabilities of critical facilities and community lifelines by adhering to American Red Cross sheltering regulations and standards.	
Impact on Capabilities:	This action will expand the capabilities of critical facilities and community lifelines by adhering to American Red Cross sheltering regulations and standards.	
Climate Change Considerations:	Projections indicate an uptick in the occurrence of heavy rains during severe storms, which can lead to various types of flooding, including riverine, flash, and dam failure. Power outages and downed trees or power lines can damage houses and property during earthquakes, severe storms, severe winter storms, or earthquakes.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Utilize County shelters	May not be accessible to residents during or following a disaster due to travel restrictions
	Ignore American Red Cross standards or requirements	Shelters may not have assistance from American Red Cross staff when opened

Action 2027-CarmelT-11. Risk Reduction Initiative

Lead Agency:	Putnam County	
Supporting Agencies:	Town Staff	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Town is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.	

Description of the Solution:	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically:
	• Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation.
	• Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include:
	  ◦ NFIP Community Rating System (CRS)
	  ◦ Benefit-Cost Analysis (BCA)
	  ◦ Substantial Damage Estimating (SDE)
	  ◦ NFIP Elevation Certificates (EC)
	  ◦ Certified Floodplain Manager (CFM) Training and Certification
	• County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures	

Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the Town's overall preparedness for emergency events, increase knowledge of the various hazards which can impact the Town, and inform staff of how to maintain eligibility for the NFIP. Providing an opportunity for staff and officials to become further educated on floodplain management practices and standards can aid in the development of plans and procedures in a way that is conscious of the flood hazard.	
Impact on Socially Vulnerable Populations:	Town staff will become familiar with how to assist displaced persons following an emergency event. Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where at risk populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
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 the wildfire hazard. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways to prepare for, plan for, and prevent interruptions in service as a result of a flood.	
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. Officials that attend trainings will have a more confident understanding of floodplain management principles and the basics of NFIP requirements and standards.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Take FEMA IS courses		Will increase knowledge, but the information is generalized and not county- or town-specific
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Action 2027-CarmelT-12. Croton Falls Dam Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYDEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Croton Falls Dam is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, transportation routes including Route 22, Route 202, Route 684, Croton Falls Road, Stoneleigh Avenue, among others, and loss of water supply. During the dam's last inspection in March 2024, no deficiencies were noted.	
Description of the Solution:	The Municipal Engineer will work with the NYC DEP Dams East of the Hudson River to complete an updated engineering study of Croton Falls Dam. The existing dam assessment report, dated April 2024, indicates the dam did not have any deficiencies; however, the following observations were made: • The low-level outlet appeared to be in good condition, however there was concrete deterioration near the intake pipe and two areas with soil erosion present at the time of the inspection. • The left most blow-out pipe is missing two of the metal bars. • The downstream face of the masonry wall has moderate amounts of concrete deterioration, spalling, and exposed rebar. • The downstream face of the service spillway was too difficult to properly inspect due to the spillway's flow. The Town will also request information and input from its Highway department and the County regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will consider assisting the NYC DEP Dams East of the Hudson River to pursue funding support, permit approval from NYSDEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)

CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Decommission Dam		High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures		Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-CarmelT-13. West Branch Dam Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYDEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The West Branch Dam is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, a historical landmark, transportation routes including Route 6, meadowlark Drive Colonel Glenn Drive, among others, and loss of water supply. During the dam's last inspection in March 2025, it was found to be deficiently maintained.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River, Inc. to complete, or share, an engineering study of the West Branch Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-CarmelT-14. Carmel Auxiliary Dike Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYDEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Carmel Auxiliary Dike is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, transportation routes including Route 6, Drewville Road, Crafts Road, among others, and loss of water supply. During the dam's last inspection in March 2025, no deficiencies were noted.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River to complete, or share, an engineering study of the Carmel Auxiliary Dike to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Table 4-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-CarmelT-01	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-CarmelT-02	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	0	1	1	0	1	**11**	High
2027-CarmelT-03	Dredge Lake Secor Outlet Stream	1	1	1	1	0	0	1	1	0	1	1	1	0	0	**8**	Medium
2027-CarmelT-04	Undersized Culverts	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-CarmelT-05	Reduce HAB Occurrences	1	0	1	1	1	0	1	1	1	0	1	1	0	1	**10**	Medium
2027-CarmelT-06	Intermediate Hazard Dam Outreach	1	1	1	1	0	0	0	1	1	0	1	1	1	0	**9**	Medium
2027-CarmelT-07	NYS DEC Dam Inventory Update	1	1	1	1	0	1	1	1	1	0	0	1	1	0	**10**	Medium
2027-CarmelT-08	Floodprone Roads	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-CarmelT-09	Engineering Hazard Evaluations of Town Park District Dams	1	1	1	1	0	0	1	0	1	0	0	1	1	0	**8**	Medium
2027-CarmelT-10	Shelter Identification and Upfits	1	0	0	1	1	0	0	1	0	1	1	1	1	0	**8**	Medium
2027-CarmelT-11	Risk Reduction Initiative	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2027-CarmelT-12	Croton Falls Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-CarmelT-13	West Branch Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-CarmelT-14	Carmel Auxiliary Dike Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

5. VILLAGE OF COLD SPRING

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

5.1 HAZARD MITIGATION PLANNING TEAM

The Village of Cold Spring identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from all Village departments.

Table 5-1 summarizes the Village officials who participated in the development of the annex. Additional documentation of the Village's planning activities through Planning Partnership meetings is included in Volume I.

Table 5-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Marjorie E. Gage, Village Clerk Address: 85 Main Street, Cold Spring, NY 10516 Phone Number: 845-265-3611, ext. 9 Email: vcsclerk@coldspringny.gov	Name/Title: Kathleen E. Foley, Mayor Address: 85 Main Street, Cold Spring, NY 10516 Phone Number: 845-265-3611, ext. 9 Email: Mayor@coldspringny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Greg Wunner, Code Enforcement Officer Address: PO Box 155 Cold Spring, New York 10516 Phone Number: 845-265-5020 Email: code-enforcement@philipstown.com	
Additional Contributors	
Name/Title: Matthew Jackson, Officer-in-Charge, Cold Spring Police Department Method of Participation: Provided key insights into previous event history, impacts to critical facilities and community assets, Village capabilities, and previous action status.	
Name/Title: Matthew Steltz, Fire Chief, Cold Spring Fire Company Method of Participation: Provided key insights into previous event history, vulnerable assets, and wildfire impacts	
Name/Title: Abighail McKinney, Clerk to the Zoning Board Method of Participation: Provided information on growth and development trends in the Village.	
Name/Title: Matt Kroog, Water & Wastewater Superintendent Method of Participation: Provided key insights into previous event history, impacts to critical facilities and community assets, Village capabilities, and previous action status.	

5.2 COMMUNITY PROFILE

5.2.1 Community Classifications

Table 5-2 summarizes classifications for community programs available to Cold Spring.

Table 5-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	January 2026
NYSDEC Climate Smart Communities	Yes	Bronze	-
NYSERDA Clean Energy Community	Yes	4-Star	October 1, 2024
Other: Organizations with mitigation focus (advocacy group, non-government)	Yes	PACE University Climate Resilient Development Workshop Series	June 2025

N/A = Not applicable

5.2.2 Community Profile

The Village is located in western Putnam County, along the Hudson River, surrounded by the Town of Philipstown to the north and south, and the Village of Nelsonville to the east.

Table 5-3 through Table 5-6 note land area, population, and building stock information for the Village of Cold Spring.

Table 5-3. Total Land Area in the Village of Cold Spring

Jurisdiction	Total Land Area	
	Acres	Square Miles
Cold Spring (V)	380.1	0.6

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 5-4. Population Estimates in the Village of Cold Spring

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
1,986	2.0%	1,863	1.9%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 5-5. Vulnerable Populations in the Village of Cold Spring

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
427	22.9%	90	4.8%	70	3.8%	154	8.3%	84	4.5%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 5-6. General Building Stock in the Village of Cold Spring

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
761	$474,899,526	596	$248,084,161	139	$139,669,849	6	$8,097,775	20	$79,047,742

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

5.3 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 Cold Spring's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

5.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Cold Spring are shown in Figure 5-1 and Figure 5-2. 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 Cold Spring has significant exposure.

Figure 5-1. Cold Spring Hazard Area Map #1

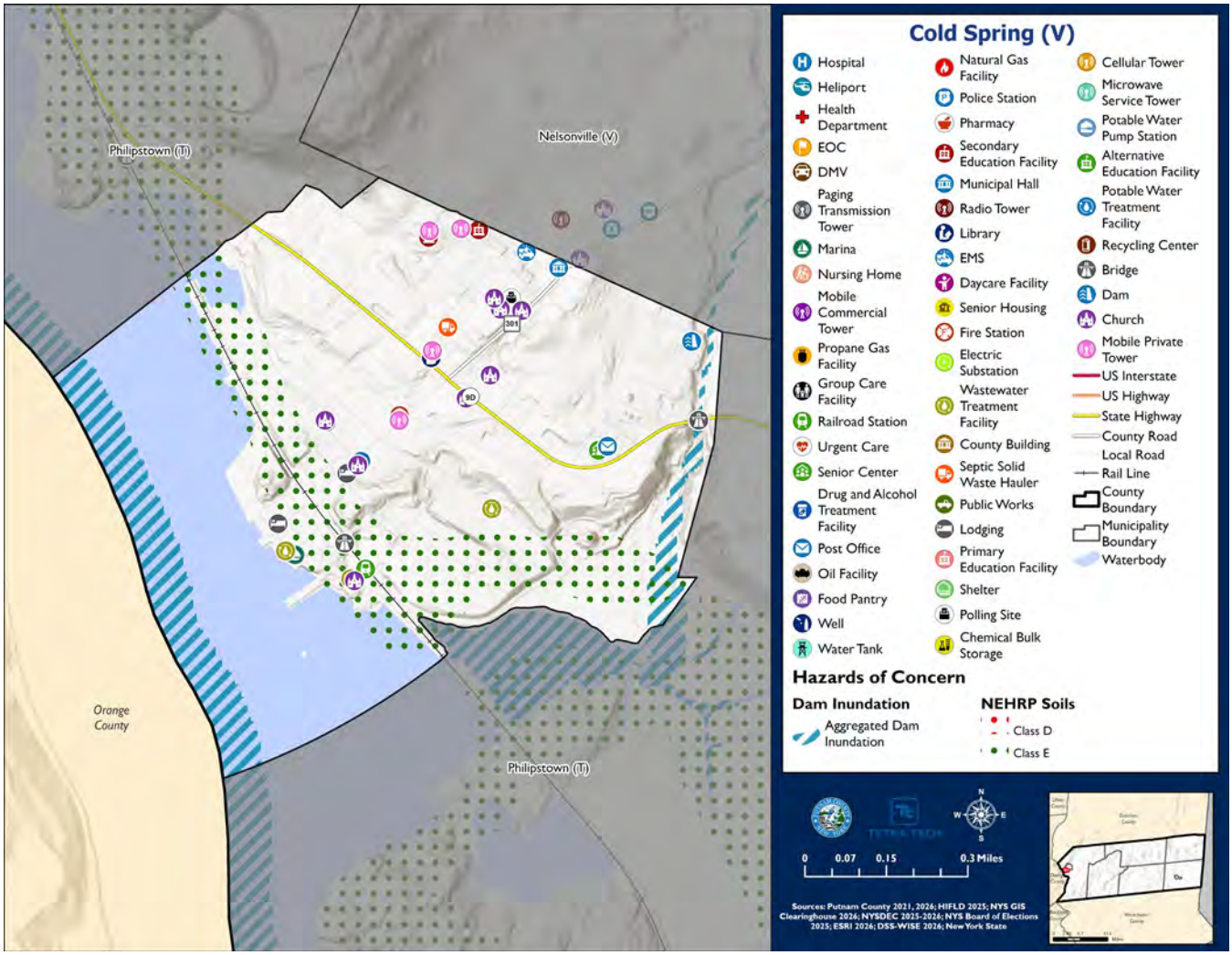
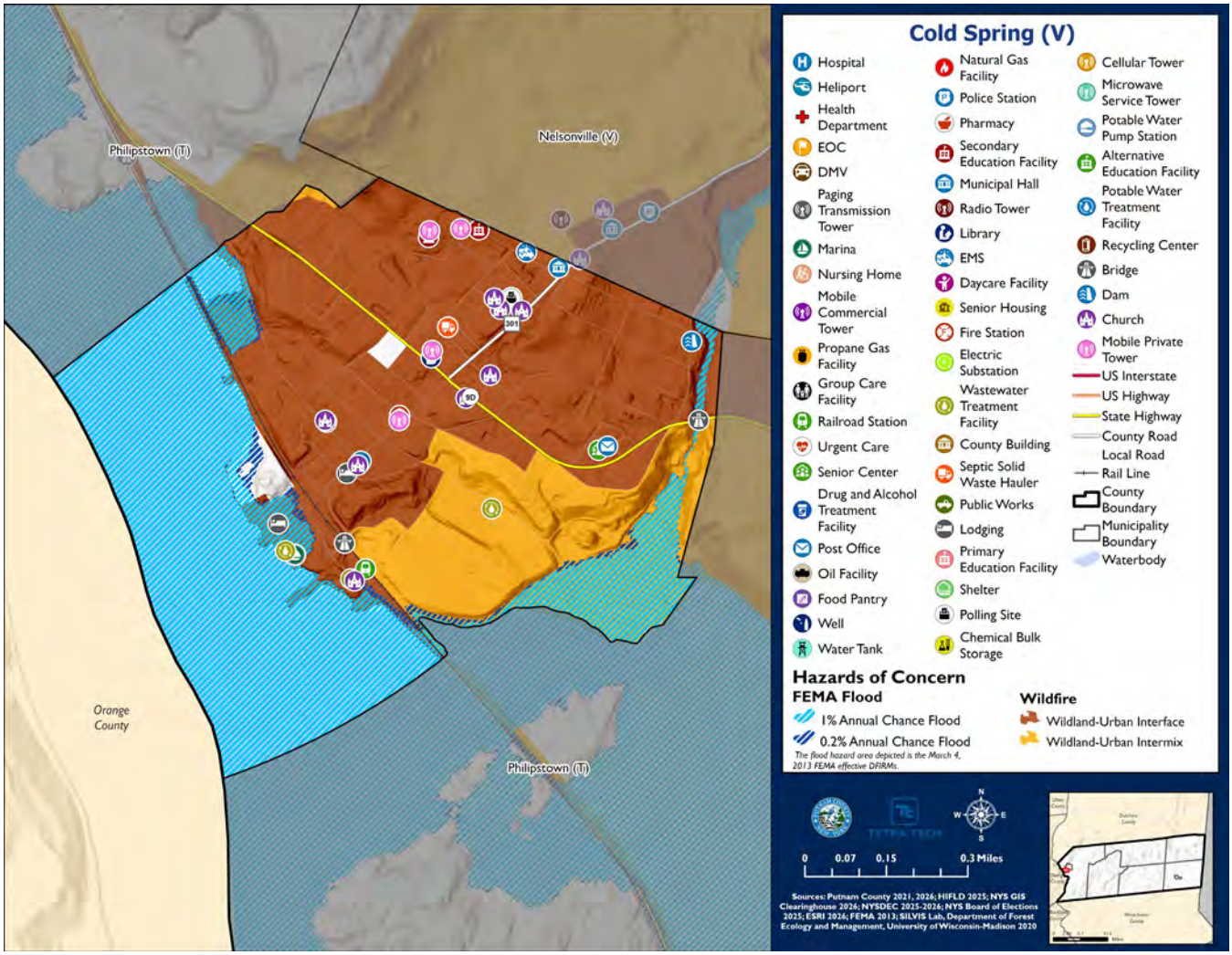


Figure 5-2. Cold Spring Hazard Area Map #2



5.3.2 Previous Event History

The history of natural and non-natural hazard events in Cold Spring is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 5-7 and Table 5-8 provide details on the loss and damage in Cold Spring during hazard events since the last hazard mitigation plan update.

Table 5-7. Presidential Disaster Declarations History in Cold Spring

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Cold Spring
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	No damages or losses incurred by the Village
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	Damages incurred from Tropical Storm Isaias amounted to $11,739.19.

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Cold Spring
August 21-24, 2021	EM-3565-NY	Hurricane Henri	No damages or losses incurred by the Village
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	No damages or losses incurred by the Village
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	Village had multiple flooding locations and damages including: Main Street from Cedar to the shoreline of the Hudson River. Academy Street culvert, Cedar Street in entirety, Mountain and Fishkill, Fair Street, Fish Street, West Street, North Street, Market Street, Village Pier, Back Brook (various locations along its entire route through the Village), Visitors Center, Wastewater treatment plant protective fencing, backup generator failure at pedestrian tunnel for Metro-North. Emergency protective measures and debris removal was conducted throughout the Village. Failure of Cedar Street /Nelsonville Woods culvert caused most subsequent downstream flooding, as it overwhelmed the Back Brook water shed and its existing stormwater infrastructure. Numerous private properties along Back Brook were impacted, but no individual relief was provided by FEMS.

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 5-8. Hazard Event History in Cold Spring

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Cold Spring
April 13, 2020	$50,000	A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	No known impacts or damages to Village.
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	No known impacts or damages to Village.

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Cold Spring
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	No known impacts or damages to Village.
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No known impacts or damages to Village.
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of the village on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	No known impacts or damages to Village.
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	No known impacts or damages to Village.
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	The Village reported tree cleanup

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

5.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 5-9 includes an inventory of critical facilities and infrastructure for the Village of Cold Spring.

Table 5-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Hudson House River Inn	Lodging	Y	Y	2027-ColdSpringV-01	-
Cold Spring Marina	Marina	Y	Y	2027-ColdSpringV-01	-
Wastewater Treatment Pump	Wastewater Treatment Facility	Y	Y	2027-ColdSpringV-01	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: One bridge was identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

5.3.4 Local Hazard Impacts Assessment

Representatives from the Village of Cold Spring Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 5-10.

Table 5-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	The Village has five drinking water impoundments. Two are rated as high hazard (the Upper and Lower Reservoir), and the DEC has noted deterioration of spillway and dam walls at the Foundry Brook impoundment at the Water Treatment Plant on Fishkill Road. Using valve system, water levels can be lowered in advance of storms in all locations but one, Jaycox Pond. There, beaver dams help to maintain drinking water impoundments. That location is monitored daily and the beaver dam dismantled as needed to lower water levels at this location.
Disease Outbreak	Metro-North connectivity to New York City, as well as massive amounts of tourism from all points create additional concerns of contagion spread.
Drought	Emergency water declarations and conservation orders have been issued three summers in a row. Use of water for visitation purposes a significant concern.
Earthquake	Village experienced two earthquakes in the past 5 years, both resulted in emergency dam inspections.
Extreme Temperatures	County has made emergency declarations. Putnam County opens a cooling center for Seniors at the Friendship Center in the Village. The Village has no large, conditioned space to host cooling center other than Village Hall, which cannot be opened without security; the Village does not have the resources to provide. The Recreation Center for Town of Philipstown is a Red-Cross designated shelter.
Flood	Two types of flooding in the Village: inundation from rainfall and steep slopes and tidal river rise.
Harmful Algal Blooms	Protocols are in place for preventing and/or managing blooms within the drinking water impoundment system.
Severe Storm	Village power is typically restored within hours, but there have been some isolated incidents where power is out for days.
Severe Winter Storm	Village has incurred numerous events that resulted in over $100,000 for one storm alone. (January 25-28th 2026 was the snowfall and cleanup was at least a week.) Multiple storms occurred after this which resulted in additional clean up.
Terrorism	Village is classified as a soft target. Most impacted area would be Main Street due to high concentration of residents and businesses (moderate risk). Metro-North train Station is transportation hub. Hudson Highlands State Park Preserve, which abuts the Village to the north and east, produces large seasonal visitor volume with limited access routes to the area. West Point is directly across the Hudson River, and therefore incidents affecting this area may threaten the Village. Waterfront has public gathering and critical utilities. Large public gatherings are hosted throughout the Village with limited ingress/egress routes. The Village's five drinking water impoundments and water treatment plant are of concern. Village currently has protests every weekend from 10-11am in the center of the Village (concern of counterprotests and potential violence), and the Village Pier is increasingly referenced as a gathering point for demonstrations.

Hazard Name	Local Impacts: People, Community Services, Local Economy
	Large-scale public events are hosted at the private property owned by St Mary in the Highlands at Main and Route 9D. Drone has been spotted over the wastewater treatment plant and is going through proper emergency protocol. Water superintendent spotted drone and reported it. Cyberterrorism is an increasing concern and risk. Access to IT infrastructure is secure, but threats are constantly shifting. There is increased vehicle and pedestrian traffic in the Village from March through late November, and major holidays, primarily due to tourism and the draw of the neighboring New York State Hudson Highlands Park Preserve. Increases risk for vehicular crashes in crowds.
Wildfire	There is not a wildfire problem in the village itself, but the community is surrounded by state park. The Cold Spring Fire Company responds to incidents in the Hudson Highlands Parks Preserve first typically – in mutual aid with surrounding jurisdictions and NYS Parks. Encourage talks with NYS Parks to establish self-supported fire/EMS and/or provide budgetary and resource support for the Village. High volume of hikers/pedestrians on Parks trails create overcrowding; can become problematic if an emergency occurs. While Cold Spring Fire Company is responding in the State Parks, the Village is vulnerable and reliant on mutual aid from other, farther away mutual aid departments.

5.3.5 Vulnerable Community Assets

Representatives from the Village of Cold Spring Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 5-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 5-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Water Code allows for food producing plants to be watered while water emergencies are en force.	**Area: Concentration of Local Businesses, Major Employers**	Main Street commercial corridor (B1) and Chestnut Street Route 9D Business Corridor (B2) Major employers are Haldane Central School District and New York Presbyterian Medical offices.
Area: Concentration of Residences	All of the Village consists of dense housing and dense commercial areas. Back Brook/Steep Slope Flooding impacts: Cedar Street, Mountain Avenue, Locust Ridge, State Route 301/Main Street in its entirety, Fishkill Avenue, Academy Street, Chestnut Street/Morrison Avenue (State Route 9D), Kemble Avenue, Wall Street, Rock Street, Garden Street, Church Street, Northern Avenue, Fair Street, Fish Street, Spring Brook Condos (Back	**Local Roads, Highways, Culverts, Bridges**	Back Brook/Steep Slope Flooding: Cedar Street, Mountain Avenue, Fishkill Avenue, Locust Ridge, State Route 301/Main Street in its entirety, Academy Street, Chestnut Street/Morris Avenue (State Route 9D), Kemble Avenue, Wall Street, Rock Street, Garden Street, Church Street, Northern Avenue, Fair Street, Fish Street, Spring Brook Condos (Back Brook runs right this development), Haldane Central School has impacts to facilities.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
	Brook runs through this development), Haldane Central School has impacts to facilities. Riverfront Flooding: West Street, North Street, Fish Street, Main Street, Market Street, New Street, Waterfront Park (Village) and Dockside Park (New York State Parks), Village marina (a former manufactured gas plant site). Housing in waterfront area is very dense and heavily impacted by tidal flooding as well as steep slope runoff. The area includes the Metro-North Station and Tracks, Mayors Park, Cold Spring Pier/Dock (built as a containment structure for contamination that could not be removed during West Point Foundry/Marathon Battery Superfund Cleanup).		Riverfront Flooding: West Street, North Street, Fish Street, Main Street, Market Street, New Street, Waterfront Park (Village) and NYS Dockside Park (New York State Parks), Village marina. Housing in this waterfront is very dense and heavily impacted by Tidal floodings as well as steep slope runoff. Metro-North Station and Tracks, Mayors Park, Cold Spring Pier/Dock (built as a containment structure for contamination that could not be removed during West Point Foundry/Marathon Battery Superfund Cleanup). Railroad overpass at Lunn Terrace is the only roadway connection between the upper and lower village. The structure has major spalling on the underside. Concern with large/oversized vehicles causing additional damage to the structure. This is the only means of access to tidal flood-prone areas in the residential, commercial, and recreation areas in the lower Village.
Municipal Buildings	Municipal Building at 85 Main Street, which contains the Police Department, has leaky roof, basement flooding, and needs electrical and mechanical systems upgrade. Village cannot get a generator on facility until roof is repaired – causes concerns regarding continuity of government and public safety during power outages and loss of connectivity. Village has a grant and has completed a conditions assessment; portion of roof needs to be redesigned. Water and Wastewater Plants both have backup power, as does the Cold Spring Fire Company. Generator has been brought above ground at Wastewater, but the plant overall is still prone to both tidal and steep slope flooding.	**Medical Centers (non-hospital)**	Not in a direct flood path – no known flooding impacts, but would be impacted by restricted access/evacuation route along Route 9D.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
College/University	Not applicable	**Place of Worship**	Methodist Church (also a polling place) at Orchard and Main. Saint Mary in the Highlands on Main Street/Chestnut Street is a central location and is a designated gathering point for Haldane Central School evacuations. Presbyterian Church on Academy Street runs the Philipstown Food Pantry. Immediately adjacent to Back Brook and the Academy Street culvert.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	Waterfront Park, the Village Marina, Mayor's Park, and the Lower Village portion of the B1 district are tidal and steep slope flooding prone. McConville Park is prone to steep slope flooding.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	Access to the Village Highway Garage is via tidal and steep slope flooding prone Fair Street. The garage houses both heavy equipment for roadways and patrol vehicles and critical equipment for the Cold Spring Police Department. There is insufficient interior storage for these assets so some are stored outside and become weathered. Highway Garage roof is leaky and the facility has no generator.
Cultural/Historic Buildings/Sites	Almost the entire Village is designated as a local and state historic district; Main Street and adjacent properties are nationally designated. There are several individual national landmarks, including the West Point Foundry Preserve, the Chapel of our Lady Restoration, and the Grove/Lente House. The entire Village is within a SASS as well as the Maurice D Hinchey Hudson River Valley National Heritage Area. Within restricted airspace surrounding West Point.	**Schools (K-12)**	Haldane Central School property is within Back Brook watershed and the catchment area of the Cedar Street culvert and is impacted by steep slope runoff, as is the Main campus. The campus's stormwater system ties into the Village's stormwater system near the football field at Route 9D (the Back Brook system) The Montessori School on Kemble Avenue has experienced road flooding in heavy rain events, as well as roadway and culvert wash out. There is a daycare on the Route 9D evacuation corridor near Benedict Avenue.
Elder-care Facilities	Chestnut Ridge on Route 9D, across from New York Presbyterian, is designated senior and low income housing. There are mobility concerns for some residents should evacuation be	**Utilities**	Not applicable – power generation and distribution is by Central Hudson.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
	necessary. Directly across Route 9D is 55+ housing in the Butterfield Development.		
Fire/Police Stations	One of each, both need structural work. Police is within municipal building and is on second floor with no elevator. Police Department does not have a separate generator – they only have enough power supply to shut equipment down. Connectivity stability is a frequent problem for Village Hall and Police Department; Village working with Optimum but finding little improvement. Fire Company has backup power.	**Wastewater Treatment Plants**	Tidal and steep slope flood prone. Has above-ground generator but that is also flood prone. Pump stations (West Street) (Market Street) – have tidal and steep slope flooding concerns. Both are alarmed. West Street has a stand-alone generator; Market has a tow-behind generator.
Gas Stations, Grocery Stores, Supermarkets	Two gas stations and one grocery store, one gas station is within the Back Brook floodplain at Main and Route 9D, near underground culverts for Back Brook.	**Water: Drinking Water Resources**	Steep slope flooding prone. Backup power is in place at Water Treatment Plant.
Hospitals	None; only medical offices on Route 9D evacuation corridor.	**Other**	Metro-North pedestrian underpass is extremely flood prone from steep slope runoff. Village received FEMA funding following July 2023 storms and is planning to install flood doors.

5.3.6 Dams

Table 5-12 includes all dams in the Village of Cold Spring. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 5-12. Dams Located in Cold Spring

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-5308	West Point Foundry Preserve Dam	-	SCENIC HUDSON INC.	Private	Other	Low Hazard Dam

Identified information about dam risk in the Village, or to dams owned by the Village, are noted below:

The Village has five drinking water impoundments that are located outside the Village, within the Town of Philipstown: Upper Reservoir, Lower Reservoir, Jaycox Pond, the Coffer Dam, and the Foundry Brook dam. Upper Reservoir and Lower Reservoirs are Class C High Hazard dams, as rated by the DEC. The Village has acquired needed property around the Upper Reservoir and is in the design phase for repairs needed there. Have a WQIP grant of $2.5M toward repairs estimated at $8-9M. The Lower Reservoir is being monitored and will be repaired after Upper Reservoir is completed; funding is needed. DEC performed annual inspections in June 2026.

Foundry Brook Dam has spillway and wall deterioration. Funding for design and repair needed.

The Village signed a letter of support for Scenic Hudson to potentially remove the West Point Foundry Preserve Dam and to fortify the stream bed.

NYS DEC information notes the Barrett Pond Dam as being located in the Village – this dam is actually located in the Town of Philipstown, far outside the Village boundary.

5.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 5-13 identifies the preliminary hazard ranking for Cold Spring, whether the Village agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 5-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	High	Upper and Lower Reservoirs are Class C High Hazard dams as determined by DEC. Repair design underway for upper only, and that timeline extends into 2029.	High
Disease Outbreak	Medium	Agree	-	Connectivity to major metropolitan area with international airports and water ports.	Medium
Drought	High	Agree	-	-	High
Earthquake	Low	Disagree	Medium	Have experienced two since 2024; both warranted emergency dam inspections.	Medium
Extreme Temperatures	Medium	Disagree	High	The Village's population is experiencing multiple high heat events lasting for multiple days	High
Flood	Low	Disagree	High	See all of the documentation above	High
Harmful Algal Blooms	Medium	Agree	-	-	Medium
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Disagree	Medium	The Village is located within the restricted airspace of West Point, between two major Hudson River bridge crossings, and has high visitor/crowd volumes	Medium
Wildfire	High	Agree	-	-	High

5.4 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 5-14 through Table 5-17.

5.4.1 Development and Permitting

Table 5-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	The Town of Philipstown issues building permits on behalf of the Village through a shared services agreement.
What is your process for tracking building permits?	Excel spreadsheet
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes

Topic	Comment
Does your community have a buildable land inventory? If yes, please describe.	Noted in comprehensive plan; only one large-scale developable lot is available (11 acre parcel, a brown field). Highway garage area was identified in the comprehensive plan as a location for potential future development; however, the location is currently an occupied parcel in use by the Village.

Table 5-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2021				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	1	1
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	1	1	2
Permits within SFHA	0	0	0	0
2024				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2025				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0

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

Table 5-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Butterfield Realty	New single-family home	1	63 Paulding Ave	N/A	Permit issued
Butterfield Realty	New single-family home	1	61 Paulding Ave	N/A	Permit issued
Dennis Squilla	New single-family home	1	8 East Belvedere	N/A	Permit issued
Fair Street Culvert	Infrastructure - Culvert	1	Fair Street	N/A	Completed

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Mountain & Fishkill Ave Culvert	Infrastructure - Culvert	1	Intersection of Mountain and Fishkill Avenues	N/A	Completed

Table 5-17. 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 Zones*	Description / Status of Development
Kearney Realty Development	Mixed-use	N/A	Corner of Kemble Avenue and The Boulevard	N/A	Application expected
Bill McComish	Multi-family	3 or 4	29-31 Rock Street	N/A	To be before Planning Board

5.5 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 5-1 is responsible for maintaining this information.

5.5.1 NFIP Statistics

Table 5-18 summarizes the NFIP policy and claim statistics for the Village of Cold Spring.

Table 5-18. Cold Spring NFIP Summary of Policy and Claim Statistics

NFIP Community Number	360670#
FEMA 2020 NFIP Data	
# Policies	21
# Claims (Losses)	29
Total Losses Claimed	$1,906,668
# Repetitive Loss Properties (NFIP definition)	10
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	16
Repetitive Loss Events	7
Net Building Payment	$1,128,265
Net Contents Payment	$45,870
Total Net Payment	$1,174,135

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 2020, 2026

Note: "-" = information unavailable

5.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 5-19.

Table 5-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Hudson River waterfront and Back Brook watershed drainage areas.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	Agreement in place with the Town of Philipstown Building Inspector to perform NFIP Administrative duties.
What local department is responsible for floodplain management?	The Building Inspector is appointed Local Administrator to administer and implement floodplain management by granting or denying floodplain development permits in accordance with local ordinance provisions.
Are there any certified floodplain managers on staff in your jurisdiction?	The Code Enforcement Officer is the certified floodplain manager
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2013, Chapter 52 of the Village Code, Floodplain Management
What is the date that your flood damage prevention ordinance was last amended?	2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Application and Permit Review, Inspections
What are the barriers to running an effective NFIP program in your community, if any?	Increased staffing and financial resources would improve effectiveness and proactivity.
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	No. Training received through NYS.
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	"SUBSTANTIAL DAMAGE" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

NFIP Topic	Comments
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	"SUBSTANTIAL IMPROVEMENT" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either: • any project for improvement of a structure to comply with existing state or local building, fire, health, sanitary or safety code specifications which are solely necessary to assure safe living conditions; or • any alteration of a "Historic Structure," provided that the alteration will not preclude the structure's continued designation as a "Historic Structure."
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	3
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	No
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	All those along Back Brook, from Cedar Street to Fair Street, as described above.
Does the community maintain elevation records? If yes, please describe.	On a case-by-case basis as part of building permit review process, as necessary
Describe any areas of flood risk with limited NFIP policy coverage.	Unknown
How does the community teach property owners or other stakeholders about the importance of flood insurance?	This is typically done through the lender/mortgage company
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	Municipal overlay maps
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 considers these efforts as part of a Site Plan Review; the Village is exploring a stream management ordinance for Back Brook.

5.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Cold Spring 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 and in the lives of residents. 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 Cold Spring to identify opportunities for integrating mitigation concepts into ongoing Village procedures.

5.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 5-20 and Table 5-21 detail the available planning and regulatory capabilities of the Village.

Regulatory Capabilities

Table 5-20. Regulatory Capabilities in Cold Spring

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	NYS Uniform and Energy Code 2020; Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the “2015 I-Codes”), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017). Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries.	The Uniform Code (19 NYCRR Parts 1219 to 1229)	Building Inspector
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B.	NYS Executive Law, Article 2B.	Local OEM

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019	Title 6 NYCRR Part 617	-
Flood Damage Prevention Ordinance	Yes	Village Code Chapter 52: A. regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities; B. require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; C. control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters; D. control filling, grading, dredging and other development which may increase erosion or flood damages; E. regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands, and; F. qualify and maintain for participation in the National Flood Insurance Program.	Chapter 52 Federal Participation in the NFIP State: Community Risk and Resiliency Act (CRRA)	Historically supported through Town of Philipstown Building Inspector
Growth Management	-	Included in Zoning, Code Chapter 134	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes	The steep slope ordinance is designed to limit or control development on or near steep slopes to protect public safety, prevent environmental damage, and preserve natural landscapes. The ordinance prevents erosion and landslides by reducing disturbance to unstable terrain.	Chapter 106, Steep Slope Ordinance	Historically supported through Town of Philipstown Building Inspector
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a). The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	Chapter 134, Section 12	Planning Board
Stormwater Management Code	Yes	Codes Rules and Regulations of the State of New York, Title 6. Department of Environmental Conservation, Chapter X. Division of Water Resources, Subchapter A. General Article 3. State Pollutant Discharge Elimination System, Part 750. State Pollutant Discharge Elimination System (SPDES) Permits. New York Environmental Conservation Law, Article 17, Titles 7, 8 and Article 70. New development and redevelopment projects that result in a land disturbance of one acre or greater, including projects less than one acre if they are part of a larger common plan of development or sale or if controlling such activities in a particular watershed is require a permit by the Department	Title 6, Ch. X,17-7,8,70	Local
Subdivision Code	Yes	It is declared to be the policy of the Planning Board to consider land subdivision plats as part of a plan for the orderly, efficient and economical development of the village. This means, among other things, that land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood or other menace and that proper provision shall be made for drainage, water supply, sewerage and other needed improvements.	Chapter 111 and Chapter 134	Planning Board
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	Chapter 134 is adopted for the purposes set forth in § 7-704 of Article 71 of the Village Law and in the interest of the protection and promotion of the public health, safety and welfare. It shall be deemed also to specifically include the following purposes; A. To recognize that the land within the confines of the Village of Cold Spring has been largely developed, but that the remaining vacant land, if improperly controlled, could drastically alter the character of the community to the detriment of all people residing therein. B. To recognize that the capacity of the sewer and water systems is limited and that uncontrolled building would impose an intolerable burden upon said public facilities.	Chapter 134	Zoning Board of Appeals

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		C. To recognize that the traffic capacity of village streets is limited and that proper control of parking and traffic is of paramount importance for adequate transportation and safety from fire and public dangers. D. To recognize that the Village of Cold Spring is situated in a location of unique beauty and that all planning and zoning must have as one of its goals the development of a village that will blend and harmonize with the surrounding countryside, thereby making a more pleasant, relaxed and healthful community for all. E. To recognize that while the Village of Cold Spring is primarily a residential community, provision also must be made for business and industry.		

Planning Capabilities

Table 5-21. Planning Capabilities in Cold Spring

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	Developing a climate adaptation plan beginning Fall of 2026.	-	Village Board
Comprehensive Plan	Yes	Village of Cold Spring Comprehensive Plan adopted 01-10-12. The Goals of the Plan are as follow; Goal 1: Preserve and enhance the small town, historic, neighborly, diverse and safe character of Village life. Goal 2: Take full advantage of our location on the Hudson River. Goal 3: Protect the natural environment and conserve energy. Goal 4: Enhance the economic vitality of the Village. Goal 5: Ensure that community facilities and services meet the Village's needs and are efficient and affordable. Goal 6: Control property taxes. Goal 7: Integrate new development with the traditional Village.	Village of Cold Spring Comprehensive Plan December 2011, adopted January 2012	Comprehensive Plan Special Board; Village Board
Continuity of Operations Plan	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Capital Improvement Plan	Yes	1-3, 3-5, 5-10 year plans	Capital Improvement Plan	Village Board
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The Putnam County CEMP was prepared by county officials working cooperatively with state, federal, and private agencies in a planning effort coordinated by NYS DHSES. The plan was designed to reduce or prevent emergency/disaster situations that the county is predisposed to and enhance the adeptness of response and recovery operations.	Putnam County CEMP; January 2020	Putnam County Bureau of Emergency Services
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	No	-	-	-
Habitat Conservation / Wildlife Management Plan	No	-	-	-
Local Waterfront Revitalization Plan	No	Village intends to apply for funding in 2026.	-	Village Board, likely development of a Special Board
Open Space Plan	No	There is an agreement (2018) between NYS Parks and Cold Spring for Dockside Park, in which the Village manages the park and has permitting control over events .	Dockside Park Management Agreement, 2018	Village
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	Yes	The 2025 Putnam County CHA is intended to provide Putnam residents and stakeholders with an accessible topline description of Putnam-specific CHA findings. It includes a description of community characteristics, focus areas, and resources to address the identified focus areas. Focus areas were determined through a systematic review of all the primary and secondary data included in the above-mentioned assessments. The 2025 Mid-Hudson Valley Regional Community Health Assessment (CHA) provides a comprehensive overview	2025 Putnam County Community Health Assessment 2025 Mid-Hudson Region Community Health Assessment	Putnam County Department of Health

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		of the health status, needs, and priorities across the seven Mid-Hudson counties—Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester. This systematic process was a joint effort across the seven counties to collect, analyze, and interpret data on health outcomes, behaviors, and social determinants of health. It serves as a foundation for coordinated public health action by identifying key challenges and guiding local health departments, hospitals, and community partners in planning evidence-based strategies.		
Sheltering Plan	No	In the case of a hazard event, Philipstown's schools, fire department, and recreation center may be able to be used for sheltering. The Philipstown Rec Center is the closest Red Cross designated shelter.	-	Town of Philipstown
Stream Corridor Management Plan	No	Village would like to pursue developing this plan (Back Brook, Foundry Brook)	-	-
Stormwater Management Plan	No	-	-	-
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	Yes	As threats are identified/revealed, a TAM notification is dispersed through law enforcement agencies.	-	Local, County, State, Regional Law Enforcement Agencies
Transportation Plan	Yes	In 2024-2025, the Village participated in a NYMTC Community Planning Workshop. The program provides technical assistance to municipalities in line with the Moving Forward regional transportation plan. The workshops target municipalities and New York City community boards in the NYMTC planning area. Workshop topics and locations are established through NYMTC's member agencies using the Coordinated Development Emphasis Areas identified in NYMTC's Regional Transportation Plan and the congested roadway corridors and bottleneck locations in NYMTC's 2021 Congestion Management Process Status Report as targeting mechanisms. Workshop topics can cover various issues, including expanding non-motorized transportation, transit-oriented development, parking management, safety audits, reduced traffic congestion, and improved access to public transit.	Community Planning Workshop, January 2025	NYMTC

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Watershed Management of Protection Plan	No	-	-	-
Other: Emergency Action Plan	Yes	The Dam Emergency Action Plan (EAPs) serve to protect lives and reduce property damage in the event of a dam failure or operational incident. The plan identifies potential emergency conditions at a dam, outlines the areas that could be affected, and specifies pre-planned actions to minimize loss of life, property damage, infrastructure loss, and disruption of water resources.	Cold Spring Dam (upper) EAP, July 2023 Cold Spring Dam (lower) EAP, July 2023 Foundry Brook Dam EAP, October 2016	Village

5.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 5-22 details the available administrative and technical capabilities of the Village.

Table 5-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	Yes	Contract with James J. Hahn Engineering, LLC
Construction/Building/Code Enforcement Department	Yes	Village has its own Building Clerk within its Clerk Staff, but has an IMA with the Town of Philipstown for Code Enforcement
Economic Development Commission/Committee	No	-
Emergency Management/Public Safety Department	Yes	Fire, PD – EMS through Town of Philipstown
Environmental Commission/Specialist	Yes	Tree Advisory Board; Town of Philipstown has a Natural Resources Officer and a Conservation Board. Village and Town each have their own Climate Smart Task Force
Grant Writer	Yes	Contract periodically
Maintenance Programs to Reduce Risk	Yes	Tree management; stream bed clearance where access is available to Village through ownership or easement; highway department maintains Village roads
Mitigation Planning Committee	Yes	Village Board, other Village stakeholders (Police, Fire, Highway, Water)
Mutual Aid Agreements	Yes	Fire, Code Enforcement, Village provides water quality testing for Garrison Landing Water District, Countywide Mutual Aid Agreement for equipment/labor on roadway projects

Capability Type	In Place in Municipality? Yes or No	Comments
Open Space Board/Committee	Yes	Tree Advisory Board; Recreation Committee - comprised of five members who are appointed by the Mayor and the Board of Trustees to manage and maintain all Village parks, playgrounds and recreational facilities. Village and Town have a Climate Smart Task Force.
Personnel skilled or trained in website development	Yes	Contracted primarily, but the Village Clerk/Treasurer is trained.
Planning Board	Yes	The Village Planning Board is comprised of five members appointed by the Mayor and Board of Trustees to review all site plans and subdivision proposals with regard to land use or change of land use. The board also provides opinions to the Zoning Board of Appeals and reviews zoning variances.
Planning Department	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	Consulting Engineer and Water & Wastewater Superintendent
Planner or Engineer with knowledge of land development and land management practices	Yes	The Village uses contract planners on a project-specific basis and has a standing contract with James J. Hahn Engineering.
Planners or engineers with an understanding of natural hazards	Yes	The Village uses contract planners on a project-specific basis. James J. Hahn Engineering.
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	The Village uses contract planners on a project-specific basis. James J. Hahn Engineering.
Professionals trained in conducting damage assessments	Yes	Code Enforcement from Town and/or James J. Hahn Engineering
Public Works/Highway Department	Yes	The Highway Department performs road maintenance on Village roadways and maintains Village grounds.
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	Yes	Collaborative efforts from Village staff and Board of Trustees
Surveyor(s)	Yes	Contracted on an as-needed basis
Zoning Board of Appeals	Yes	The Zoning Board of Appeals consists of five (5) members. The Board has power to decide any question involving the interpretation of the Zoning Code, including determination of the exact location of any district Boundary and to issue special use permits.
Other: Architectural and Historic District Review Board	Yes	The Architectural and Historic District Review Board consists of five (5) members, all of which are residents of the Village of Cold Spring and at least three (3) are residents of the Historic District. The Board has the authority to promulgate rules and regulations as may be necessary for the conduct of its business, including development of Design Standards; Retain or employ professional consultants or other personnel as may be necessary to assist it in carrying out its duties; conduct surveys and investigations, prepare maps, reports and recommendations in connection with its advisory

Capability Type	In Place in Municipality? Yes or No	Comments
		authority relating to the planning, development and administration of the Village landmarks; review proposed Alterations to designated properties; recommend changes to the Village Code; recommend proposals for acquisition; and other tasks deemed applicable by the Mayor and Board of Trustees.

5.6.3 Fiscal Capability

Table 5-23 summarizes financial resources available to Cold Spring.

Table 5-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes – levy fees for water/wastewater (raised a little bit each year in the past 5 years)
Impact fees for homebuyers or developers of new development/homes	Yes – parking waivers in the B1 district
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 (non-FEMA) funding programs	No
FEMA funding programs	Yes
Other State funding programs	CHIPS, WQIP, Hudson River Estuaries (DEC)
Open Space Acquisition funding programs	No
Other	No

5.6.4 Education and Outreach Capability

Table 5-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 5-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	Not formally, but as news occurs it is posted on the Village website and is emailed to those who have signed up for electronic notices.
Hazard awareness campaigns, such as school and community programs and events	Developing a training on flood readiness for the community as part of the 2026 Climate Adaptability Study funded by Hudson River Estuaries.
Hazard mitigation information available on your website	Yes – snow, heat, flood, etc.
Local News	Yes – proclamations for emergencies placed in local papers.
Natural disaster/safety programs in place for schools	"Hold-in-place" drills. The schools have their own notification/alert system to parents.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	The Philipstown Behavioral Health Hub is a local Non-profit which provides resources to the community. There is an office in the Village. The Village works with the Food Pantry on food drives. The Cold Spring Police Department can assist populations and/or direct individuals where to get assistance. Senior Center (run by the County) that offers services to the elderly.
Public information officer or communications office	Village Clerk/Treasurer
Social media for hazard mitigation education and outreach	Yes – Facebook, Instagram, coldspringny.gov
Warning systems for hazard events	Email, social media, website. During and before emergencies there is a dial-in number related to parking. Putnam County 911 dispatch has text warning capacity, as does Haldane Central School.

5.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 5-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 5-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Weak – plans are in place and communication lines are known; however, plans have not been tested full-scale, and outside assistance would be needed for a response.

Hazard	Strong, Moderate, Weak, None, N/A
Disease Outbreak	Weak – Due to public transit and the vulnerable populations, the Village has a below average capability to respond. Outside agency assistance would be required from non-profits, County, and State agencies and entities.
Drought	Strong – have in code a protocol for water conservation, as well as an agreement with the DEP for back-up water supply from the Catskill Aqueduct.
Earthquake	Weak – the hazard does not currently occur frequently and the Village has few capabilities to respond should any damages be incurred. Potential damages to the dams from an earthquake would cause significant impacts.
Extreme Temperatures	Moderate – designated spaces for warming/cooling centers are provided to seniors by Putnam County at the Friendship Center on Route 9D. The Philipstown Recreation Center is utilized as a Red Cross sheltering location but there are no large, supervised gathering space within the Village itself.
Flood	Weak – several locations in the Village are heavily impacted by floods. Outside assistant would be required, as it is likely internal responding agencies would be assisting in a singular location until roads are accessible.
Harmful Park Blooms	Moderate – plans and policies in place to address risks associated with the hazard at reservoirs/dams; state regulates the Hudson River.
Severe Storm	Weak – Outside agency assistance would be required from County and State agencies and entities, and perhaps non-profits. Outside assistant would be required, as it is likely internal responding agencies would be assisting in a singular location until roads are able to be accessible.
Severe Winter Storm	Weak – Outside agency assistance would be required from County and State agencies and entities, and perhaps non-profits. Outside assistant would be required, as it is likely internal responding agencies would be assisting in a singular location until roads are able to be accessible.
Terrorism	Weak – Outside agency assistance would be required from non-profits, County, and State agencies and entities. Outside assistance would be required, as it is likely internal responding agencies would be assisting in a singular location until roads are accessible.
Wildfire	Moderate – Village capabilities exist and are strong internally; however, due to existing agreements, the Fire Department is generally the first responding agency to incidents in surrounding communities, including State Park lands, which can stretch assets thin if response is needed elsewhere at the same time.

5.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

5.7.1 Past Mitigation Action Status

The tables below indicate progress on the Village's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

V. Cold Spring-1—Relocation of West Street Pump Station	
Hazards Addressed	Flood, Severe Storm, Severe Winter Storm, Climate Change
Lead Agency / Department	Village of Cold Spring Clerk / Treasurer
Supporting Agency / Department	-
Action Location	West Street Pump Station
Summary of Original Problem	Relocate West Street Pump Station to higher ground.
Summary of Solution (Project)	-
Action Category	-
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	FEMA funded, project is complete

V. Cold Spring-2—Market Street Pump Station Mitigation	
Hazards Addressed	Flood, Severe Storm, Severe Winter Storm, Climate Change
Lead Agency / Department	Village of Cold Spring Clerk / Treasurer
Supporting Agency / Department	-
Action Location	Market Street Pump Station
Summary of Original Problem	Install backup power and elevate vulnerable electrical utilities – project currently in progress using a generator received from Sandy. Engineering is complete
Summary of Solution (Project)	-
Action Category	-
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	FEMA funded, project is complete

V. Cold Spring-3— Waterfront Property Flood and Storm Surge Mitigation	
Hazards Addressed	Flood, Severe Storm (storm surge), Severe Winter Storm (storm surge), Climate Change
Lead Agency / Department	Mayor
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Properties along waterfront are vulnerable to storm surge flooding. Flooding during Irene and Sandy flooded basements and some first floors. All basements in the area are flood susceptible, and many have utilities and oil tanks in the basement
Summary of Solution (Project)	• Install an electrical design disconnect to de-energize this area prior to inundation • Work with property owners to elevate utilities which are often in basements • Assure the ground level oil and LPG tanks are properly secured Work with property owners to elevate or relocate basement oil tanks to at least ground level, and properly secure.
Action Category	-
Current Status – Please select one:	In Progress
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Problem Revisions: Properties along waterfront are vulnerable to storm surge flooding as well as steep slope flooding. Flooding during Hurricanes Irene and Sandy, as well as the July 2023 Superstorm flooded basements and some first floors. All buildings in the area are flood susceptible, and many have utilities and oil tanks in the basement. Solution Revisions: • Provide public education on flood safety and preparedness • Investigate an electrical design disconnect to de-energize this area prior to inundation • Work with property owners to elevate utilities and oil tanks which are often in basements • Assure the ground level oil and LPG tanks are properly secured • Update LWRP to reflect changing storm scenarios since 2011 • Model and analyze river rise predictions and planned withdrawal options Lead: Highway Department Supporting: Water & Wastewater, Police, DEC, DOS, Town of Philipstown Code Enforcement Location: Hudson River Waterfront from river's edge to Metro-North Tracks
If discontinue, explain why	Not applicable

V. Cold Spring-4— Back Brook Stormwater and Flood Management	
Hazards Addressed	Flood, Severe Storm, Climate Change
Lead Agency / Department	Mayor
Supporting Agency / Department	water / wastewater engineer
Action Location	Back Brook
Summary of Original Problem	Flooding along Back Brook which originates on the northeast border with Nelsonville and runs through town, partially underground.
Summary of Solution (Project)	Flooding along Back Brook can be essentially eliminated if the drains on the NE end are cleaned and maintained. The Village may want to inspect the underground sections for blockages and damage. The Village has an ongoing program to maintain this area, including maintaining proper flow along Back Brook.
Action Category	-
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Problem: Flooding along Back Brook which originates on the northeast border with Nelsonville and runs through multiple Village neighborhoods, both day lit and underground. Solution: Retention and detention of steep slope runoff needed in the Nelsonville woods and on the Haldane Central School Property; multiple culvert and wing wall locations need to be upsized (currently a mix ranging from 10” to 42”); alternative stormwater routing must be considered. Back Brook tributaries needs hardening or channeling in some locations; daylighting potentially appropriate in some locations. Stream bed protection overlay district needed to bring consistent management of Back Brook; fines established and enforced for brush and other dumping. Lead: Highway Department Supporting: Water & Wastewater Department; DEC; Philipstown Natural Resources Office; Town of Philipstown Code Enforcement Location: Back Brook
If discontinue, explain why	Not applicable

V. Cold Spring-5— Dam Upgrades	
Hazards Addressed	Flood, Severe Storm, Earthquake, Climate Change
Lead Agency / Department	Mayor
Supporting Agency / Department	water / waste water engineer; working with NYS DEC
Action Location	-
Summary of Original Problem	Dams in Philipstown are a real concern. The hazard of dam failure really the damage it would cause. They have a water supply backup plan with the NYSDEC, so loss of water is not their vulnerability. The Town of Philipstown at Fishkill Road and Foundry Pond Road would suffer the worst damages. The Village owns three dams which currently have some deficiencies, and a fourth (Jaycox Pond) which is not of a concern.
Summary of Solution (Project)	They are working on getting dams into compliance. They have a temporary backup water connection to the aqueduct. Once they establish a permanent hookup (they are in the design phase, waiting for NYSDEC sign off on the engineering design). Once they get approval and complete the connection, they can lower the lakes and complete the repair work. They have done what they can (removal of trees, etc.). Currently the Village has completed agreements with NYS DEC and is going through the permitting process
Action Category	-
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Problem: The Village of Cold Spring has five drinking water impoundments, all of which are within the Town of Philipstown; Village owns or has easements to actual impoundments. The dams are old, two dating to the Civil War, and three need structural work. Upper and Lower Reservoir are Class C High Hazard Dam, and the Foundry Brook dam has structural and spillway deficiencies. Solution: In 2022, the Village reconnected to the DEP's Catskill Aqueduct, ensuring a supply of backup drinking water while Upper Reservoir lowered for repair. Engineering designs underway for Upper Reservoir and partial funding secured via the WQIP program. The Village is applying for construction grants. Project expected to extend into 2029. Once completed, the Village can work on the Lower Reservoir and Foundry Brook impoundments. Lead: Water & Wastewater Superintendent Supporting: Consulting Engineers, DEC, DEP Location: Upper Reservoir, Lower Reservoir, Jaycox Pond, Coffer Dam, Foundry Brook Dam
If discontinue, explain why	Not applicable

V. Cold Spring-6— Undergrounding Utilities	
Hazards Addressed	Severe Storm, Severe Winter Storm, Climate Change
Lead Agency / Department	Village Mayor
Supporting Agency / Department	working along with electric utilities
Action Location	-
Summary of Original Problem	Vulnerable overhead power lines
Summary of Solution (Project)	Evaluate feasibility and cost/benefits of undergrounding utilities when the Village does major subsurface work along roads and sidewalks (e.g. in downtown section).
Action Category	-
Current Status – Please select one:	Discontinue – No Longer Feasible
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Unlikely to secure permissions from Central Hudson to move forward with the project. This project would result in major construction needs in the Village, which would disrupt transportation, business, and require major changes and disruptions of extant underground infrastructure.

V. Cold Spring-7—Promote and support non-structural flood hazard mitigation alternatives	
Hazards Addressed	Flood, Severe Storm, Climate Change
Lead Agency / Department	Village NFIP FPA
Supporting Agency / Department	support from NYS DHSES and FEMA
Action Location	-
Summary of Original Problem	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), 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. Specifically identified are properties in the following areas: • Main Street • West Street • New Street
Summary of Solution (Project)	-
Action Category	-
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Problem: 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), 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. Specifically identified are properties in the following areas: • Hudson River Waterfront to the MTA tracks (West of Lunn neighborhood) • Properties along the length of Back Brook from Cedar Street to the River Solution: Climate Adaptability Study for the Back Brook watershed being undertaken starting Fall 2026; identify local regulatory tools available to mitigate flood hazards from steep slope flooding and tidal surge flooding. Update Local Waterfront Revitalization Plan to account for changed flooding patterns since last update in 2011.
If discontinue, explain why	Not applicable

V. Cold Spring-8—Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	supported by relevant local department leads
Action Location	
Summary of Original Problem	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically: •Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation. (PCBES-1). •Workshops and Seminars to build local capabilities in floodplain management and disaster recovery (PCBES-11), potentially to include: o NFIP Community Rating System (CRS) o Benefit-Cost Analysis (BCA) o Substantial Damage Estimating (SDE) o NFIP Elevation Certificates (EC) o Certified Floodplain Manager (CFM) Training and Certification
Summary of Solution (Project)	
Action Category	
Current Status – Please select one:	Discontinued – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

5.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Village of Cold Spring identified the following mitigation efforts completed since the last HMP:

- The Village completed two FEMA projects to dramatically upsize culverts.
- The Back Brook floodplain is being analyzed to look at retaining water at the top of the impacted area and identifying methods to redirect flood waters and control stormwater flows through residential and commercial properties.
- The Village is currently developing a climate adaptability study for the Back Brook watershed (Fall 2026).
- The Village Plans to update its LWRP to include Hudson River shoreline resilience and tidal flooding mitigation.

5.7.3 Identified Issues

The Village of Cold Spring has identified the following vulnerabilities within their community for mitigation strategy development:

- The Hudson House River Inn, Cold Spring Marina, and Wastewater Treatment Pump are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.

- The Village does not have a comprehensive education and outreach program which addresses all identified hazards of concern; however, the information should be updated to include mitigation strategies to reduce long-term risk to the general public and properties. There is a need to educate the community, residents, and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods. A special focus should be on educating individuals who do not drive, and rely on public and private transportation, on what to do in the event of an emergency.
- There are currently few publicly accessible routes to Back Brook; nearly all properties bordering the Brook are privately owned. Properties abutting and near the Back Brook have been impacted by repetitive flooding. The Village would needs access rights/easements for ongoing maintenance of the entire streambed and planning for flood mitigation measures.
- Though wildfire is a relatively small issue in the Village, it is bordered by the Hudson Highland State Park, where wildfires occasionally occur. The Cold Spring Fire Company (CSFC) is typically the first to respond due to mutual aid agreements with surrounding jurisdictions. CSFC does not receive any compensation from responding to the incidents in State lands, and when the Company is on the mountain, the Village itself is vulnerable and reliant upon mutual aid from agencies farther away.
- The Village Highway Department and Village Hall, which houses Village operations, including the Police Department, located at 85 Main Street, and the Cold Spring Fire Company (154 Main Street) require backup power to ensure continuity of operations. High winds associated with severe storms and severe winter storms are known to cause utility failures, which would impact the continuity of operations at these critical facilities. Rising water levels from floods could impact these facilities; back-up generators would permit any influx of water to be removed from the facilities via pumping systems. Should power loss occur during extreme temperatures, the back-up generator will ensure utilities in the buildings are operable.
- The railroad overpass at Lunn Terrace, which is the responsibility of the Village, has major spalling on the underside causing metal flakes, chips, or chunks to fall off. The location of the railroad is along the Hudson River. There are concerns large/oversized vehicles traversing over the railroad on Lunn Terrace may be causing additional damage to the structure. Lunn Terrace is the only means of access to floodprone areas on Lower Main, Market, Fish, North, and New Streets.
- Ensuring the continuity of operations during a disaster or emergency is prudent to keeping essential functions operable for residents in the Village. The Village does not have a continuity of operations plan to identify core operations so critical public or business services do not stop.
- The five Village drinking water impoundments (Upper Reservoir, Lower Reservoir, Jaycox Pond, the Coffer Dam, and Foundry Brook dams) in the Town of Philipstown are of concern. The Village owns or has easements to actual impoundments. The Upper and Lower Reservoir are old, dating to the Civil War, and three need structural work. Upper and Lower Reservoir are Class C High Hazard Dam, and the Foundry Brook dam has structural and spillway deficiencies. Dam failures may cause significant damage to property and the potential loss of human life. Dam failures may damage isolated homes outside the Village, neighborhoods within the Village, major highways or railroads or cause interruption of service of important public utilities.
- Due to frequent flooding events in the Village, there are 10 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.
- The Cold Spring Upper Reservoir Dam is a Class C High Hazard Dam that is located on Foundry Brook at the Cold Spring Reservoir, within the Town of Philipstown, on Lake Surprise Road. The is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, and Fishkill Road, among others. Impacts from a failure at the Cold Spring Upper Reservoir Dam could trigger a failure at the Cold Spring Lower Reservoir Dam due to the

increased pressure from building water – these impacts would flood downstream from Foundry Brook toward Lake Surprise, inundating the recreational areas and residential and commercial properties downstream. During the dam's last inspection in January 2025, it was found to be structurally unsound; property has been acquired by the Village to access the Upper Reservoir with heavy machinery, and as of Fall 2026 engineering design for repairs is underway. Partial grant funding has been secured for the at least $8-9M project.

- The Cold Spring Lower Reservoir Dam is a Class C High Hazard Dam that is located on Foundry Brook at the Cold Spring Reservoir, within the Town of Philipstown, on Lake Surprise and Foundry Pond Roads. The dam is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, and Fishkill Road, among others. Impacts from a failure at the Cold Spring Upper Reservoir Dam would escalate any impacts already felt by a failure at the Cold Spring Lower Reservoir Dam. These impacts would flood residential and commercial properties downstream. During the dam's last inspection in July 2024, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine engineering solutions. Funding is needed for evaluation, design, and construction.
- Bull Hill (aka Mt. Taurus, within the Hudson Highlands Park Preserve) has a steep slope, causing heavy rains to flow over the terrain, impacting the Village of Cold Spring, primarily through the compounding flooding of the Back Brook. Several roads are impacted by this steep slope flooding, including Cedar Street and Half Moon Ridge. Cedar Street is one of the two entrance/egress points for Haldane Central School. Philipstown Volunteer Ambulance Corps (PVAC), which is located at 14 Cedar Street, is also impacted by this flooding. Half Moon Ridge is a road branched off Cedar Street, which leads to private residencies. Flooding along Back Brook originates on Cold Spring's northeast border with Nelsonville, and adjacent to the Hudson Highlands Park Preserve; it is conveyed both under and above ground by varying sizes of culverts, in varying condition.
- Properties along waterfront are vulnerable to storm surge flooding as well as steep slope flooding. Flooding during Hurricanes Irene and Sandy, as well as the July 2023 Superstorm flooded basements and some first floors. All buildings in the area are flood susceptible during high tide periods, and many have utilities and oil tanks in the basement.
- The Foundry Brook may flood from heavy rains associated with severe storms and from snowmelt, impacting the following areas: Bank Street, Peekskill Road, Bear Mountain-Beacon Highway (Route 9D). Foundry Brook always flows through the Cold Spring Cemetery, which is just outside of the Village's border in Nelsonville.
- The culvert on Cedar Street is undersized at 18" and connects to a 10" clay culvert running under private property. Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of stormwater. Water and debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Philipstown Volunteer Ambulance Corps (PVAC), which is located at 14 Cedar Street, is near the undersized culvert on Cedar Street.
- Route 9D is the only north/south evacuation route for the Village. Recent flooding in July 2026 shut portions of that route down; concurrent flooding on Route 9 shut down the other nearby north/south evacuation route through the bordering Town of Philipstown, leaving no re-route option from Route 9D. Any fires spurring in the State lands bordering the Village which would require evacuation would rely on Route 9D for evacuation, as it sends populations away from impacted areas.
- Existing floodplain maps are outdated and do not accurately recognize the steep slope flood threat in the Village. Correctly displaying the areas at risk to the flood hazard is not only critical to visually show the risk,

but to support grant applications for funding to mitigate the flood risk at identified locations within or around the floodplain.

- Dams identified to be in the Village utilizing the New York State Division of Environmental Conservation is inaccurate, as it indicated the Barrett Pond Dam being located in the Village instead of correct location of the Town of Philipstown. Accurately identifying the location of dams is crucial to ensuring dam safety measures are dispersed to potentially impacted individuals.

5.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Cold Spring participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Cold Spring 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 Village priorities.

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 5-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-ColdSpringV-01. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers		
Supporting Agencies:	Village Board		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The Hudson House River Inn, Cold Spring Marina, and Wastewater Treatment Pump are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.		
Description of the Solution:	The Village will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s).		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program		
Implementation Timeline:	Within 5 Years		
Goals Met:	1, 2		
Benefits:	Ensures continuity of operations of several critical facilities in the Village.		
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at-risk populations rely on.		
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.		
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.		
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.		
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of heavy rainfall events.		
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☒High	☐Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area	
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.	

Action 2027-ColdSpringV-02. Comprehensive Outreach Program

Lead Agency:	Village Board of Trustees and Mayor	
Supporting Agencies:	County BES, County Health, NYS DHSES	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Village does not have a comprehensive education and outreach program which addresses all identified hazards of concern; however, the information should be updated to include mitigation strategies to reduce long-term risk to the general public and properties. There is a need to educate the community, residents, and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods. A special focus should be on educating individuals who do not drive, and rely on public and private transportation, on what to do in the event of an emergency.	
Description of the Solution:	Create and update outreach materials, or utilize those from Putnam County and/or NYS DHSES, on hazard risks and methods of mitigation measures. Methods of distribution may include Village events, newsletters, social media, website, and having the materials on display for the public at Village libraries and offices. Outreach materials will be specified with education and information for each individual hazard of concern.	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, County Budget	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 4	
Benefits:	This action will create a 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.	
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 Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	Businesses, which may be considered critical facilities or lifelines, would be better 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 create a new capability for the Village.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the County
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance

Action 2027-ColdSpringV-03. Back Brook Accessibility

Lead Agency:	Village Board	
Supporting Agencies:	Zoning Board, Engineer, Private Property Owners, NYS DEC	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are currently few publicly accessible routes to Back Brook; nearly all properties bordering the Brook are privately owned. Properties abutting and near the Back Brook have been impacted by repetitive flooding. The Village would needs access rights/easements for ongoing maintenance of the entire streambed and planning for flood mitigation measures.	
Description of the Solution:	The Village will investigate the legality into establishing policies or regulations to gain a route of public access to all of Back Brook. Potential solutions may include establishing an easement or purchasing private property for the Village to own.	
Estimated Cost:	Medium	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	5 years	
Goals Met:	1, 3	
Benefits:	This action would give the Village access to all of Back Brook to mitigate flood impacts from the Brook to private and public properties.	
Impact on Socially Vulnerable Populations:	Privately owned property would potentially have fewer flood impacts if the Village was granted access to the Brook to perform mitigation measures, as permitted by NYS DEC.	
Impact on Future Development:	Future development along or near Back Brook would have fewer impacts from the flood hazard.	
Impact on Critical Facilities/Lifelines:	Not applicable	
Impact on Capabilities:	This action would enhance the Village's capabilities of reducing flood impacts.	
Climate Change Considerations:	Climate change projections indicate increased risk of flooding from more frequent heavy rain occurrences.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Enter onto private property with agreements or permissions	Legal issues
	Build easement without agreements	Legal issues

Action 2027-ColdSpringV-04. Wildfire Mutual Aid Discussions

Lead Agency:	Cold Spring Fire Company	
Supporting Agencies:	New York State Parks, NYS DEC Division of Forest Protection, Village Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	Though wildfire is a relatively small issue in the Village, it is bordered by the Hudson Highland State Park, where wildfires occasionally occur. The Cold Spring Fire Company (CSFC) is typically the first to respond due to mutual aid agreements with surrounding jurisdictions. CSFC does not receive any compensation from responding to the incidents in State lands, and when the Company is on the mountain, the Village itself is vulnerable and reliant upon mutual aid from agencies farther away.	
Description of the Solution:	The Village will engage with NYS DEC Division of Forest Protection and New York State Parks to have open discussions regarding the existing mutual aid agreement and relief provided by the Cold Spring Fire Company on State lands. Discussions may include topics on the updating of mutual aid agreements, State-funded trainings for CSFC, and cost-offsets for responses on State lands.	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	3 years	
Goals Met:	4	
Benefits:	This action encourages more open dialogue regarding current agreements and arrangements for wildfire and wildland fire responses from CSFC on NYS DEC and NYS Parks maintained lands.	
Impact on Socially Vulnerable Populations:	Populations with property bordering the Hudson Highland State Park will have continued protections from first responders for wildfire incidents.	
Impact on Future Development:	Property bordering the Hudson Highland State Park will have continued protections from first responders for wildfire incidents.	
Impact on Critical Facilities/Lifelines:	This action will strengthen the safety and security lifeline.	
Impact on Capabilities:	This action pertains to wildfire and wildland fire response capabilities. The action seeks to strengthen these capabilities through open discussions and expanded fiscal and human resources from New York State Parks.	
Climate Change Considerations:	Projected instances of drought and prolonged periods without substantial rain or ground saturation can spur wildfires by being used as wildfire fuel.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Stop responding to wildfire incidents at bordering State Parks	Would have potentially negative impacts on the community, leaving structures and property at risk
	Exit from the mutual aid agreement	Would have potentially negative impacts on the community, leaving structures and property at risk

Action 2027-ColdSpringV-05. Generators at Critical Facilities

Lead Agency:	Highway Department	
Supporting Agencies:	Village Board, Consulting Engineers	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☒Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Village Highway Department and Village Hall, which houses Village operations, including the Police Department, located at 85 Main Street, require backup power to ensure continuity of operations. High winds associated with severe storms and severe winter storms are known to cause utility failures, which would impact the continuity of operations at these critical facilities. Rising water levels from floods could impact these facilities; back-up generators would permit any influx of water to be removed from the facilities via pumping systems. Should power loss occur during extreme temperatures, the back-up generator will ensure utilities in the buildings are operable.	
Description of the Solution:	Repair and reinforce roof and Village Hall, upgrade electrical system. Determine the required generator capacity to support the critical facilities. The Village will then purchase and install the generators and all necessary electrical hookup components. The installation of the back-up emergency generators will ensure continuity of operations for the critical facilities and their operations during each identified hazard of concern. With expectations to provide essential services during times of emergency and otherwise, having a back-up power source is crucial. Long-term risks are mitigated through an emergency generator by reducing the likelihood of impacts from power outages, allowing essential services to continue.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Village Budget.	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4	
Benefits:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	This action results in protection of critical facilities that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Microgrid	Costly and difficult to implement.

	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.

Action 2027-ColdSpringV-06. Lunn Terrace Railroad Overpass Replacement

Lead Agency:	Highway	
Supporting Agencies:	Village Board, Metro-North, Consulting Engineers	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The railroad overpass at Lunn Terrace, which is the responsibility of the Village, has major spalling on the underside causing metal flakes, chips, or chunks to fall off. The location of the railroad is along the Hudson River. There are concerns large/oversized vehicles traversing over the railroad on Lunn Terrace may be causing additional damage to the structure. Lunn Terrace is the only means of access to floodprone areas on Lower Main, Market, Fish, North, and New Streets.	
Description of the Solution:	In partnership with the Metropolitan Transportation Authority (MTA), identify the source cause of the spalling on the railroad tracks. Once identified, evaluate the appropriate measure to resolve the spalling which may include rail grinding to smooth out minor surface defects, welding any areas of buildup to rebuild the missing metal profile, or replace the entire overpass. The MTA and the Village should evaluate load capacity and structural condition to ensure the means of egress remains open in the event of a flood.	
Estimated Cost:	High	
Potential Funding Sources:	Metropolitan Transportation Authority, FEMA HMA, Federal and State Transportation funds.	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4	
Benefits:	This action reduces flood risk on Lunn Terrace and ensures the intersection with the MTA railroad is not only safe to cross by addressing spalling but seeks to address flooding concerns.	
Impact on Socially Vulnerable Populations:	Populations with property on Market, North, New, and Main Streets, which utilize Lunn Terrace as a means of egress would have continued use of the roadway.	
Impact on Future Development:	Future development on Market, North, New, and Main Streets, which utilize Lunn Terrace as a means of egress would have continued use of the roadway.	
Impact on Critical Facilities/Lifelines:	This action supports the strengthening of the transportation lifeline by ensuring the condition of the Metropolitan Transportation Authority railroad overpass on Lunn Terrace. It is the only vehicular access between the upper and lower Village.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	Climate change projections indicate increased risk of flooding from more frequent heavy rain occurrences.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission railroad	Disruptive to commodities; outside of Village jurisdiction
	Remove and do not replace overpass	Disruptive to commodities

Action 2027-ColdSpringV-07. Continuity of Operations Plan

Lead Agency:	Village Board	
Supporting Agencies:	County BES, NYS DHSES, FEMA, Town of Philipstown	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	Ensuring the continuity of operations during a disaster or emergency is prudent to keeping essential functions operable for residents in the Village. The Village does not have a continuity of operations plan to identify core operations so critical public or business services do not stop.	
Description of the Solution:	With assistance from Putnam County, and using resources from the County, DHSES, and FEMA, the Village will develop a Continuity of Operations (COOP). This plan will act as a roadmap for the Village to continue its essential functions during a wide range of emergencies, such as natural disasters, cyberattacks, or power failures.	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget	
Implementation Timeline:	3 years	
Goals Met:	2, 4	
Benefits:	The Continuity of Operations Plan (COOP) will ensure that essential functions of the Village continue during and after a disruption caused by emergencies, whether manmade, natural, or technological.	
Impact on Socially Vulnerable Populations:	Populations would have accessibility to needed resources during disasters or emergency events.	
Impact on Future Development:	An adopted COOP plan strengthens municipal resilience, supporting sustainable growth and future development by ensuring operational stability during disruptions.	
Impact on Critical Facilities/Lifelines:	The COOP plan prioritizes continuity for critical facilities, minimizing downtime and safeguarding essential infrastructure during hazard events.	
Impact on Capabilities:	Collaborating with partnering agencies to create a COOP plan enhances the Village's emergency preparedness and response capabilities, ensuring coordinated and efficient recovery efforts.	
Climate Change Considerations:	Changing physical and social climates have resulted in the identification of a need to institute a plan to ensure operations are continued in the event of an emergencies. Future projections, especially in regards to climate, indicate need to strengthen preparedness.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Rely on federal procedures	May not be locally pertinent information or procedures for the Village.
	Rely on state procedures	May not be locally pertinent information or procedures for the Village.

Action 2027-ColdSpringV-08. Village Water Impoundments

Lead Agency:	Water & Wastewater	
Supporting Agencies:	Village Board, Consulting Engineers, NYS DEC, NYC DEP, Village of Nelsonville, Town of Philipstown	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The five Village drinking water impoundments (Upper Reservoir, Lower Reservoir, Jaycox Pond, the Coffer Dam, and Foundry Brook dams) in the Town of Philipstown are of concern. The Village owns or has easements to actual impoundments. The Upper and Lower Reservoir are old, dating to the Civil War, and three need structural work. Upper and Lower Reservoir are Class C High Hazard Dam, and the Foundry Brook dam has structural and spillway deficiencies. Dam failures may cause significant damage to property and the potential loss of human life. Dam failures may damage isolated homes outside the Village, neighborhoods within the Village, major highways or railroads or cause interruption of service of important public utilities.	
Description of the Solution:	In 2022, the Village reconnected to the DEP's Catskill Aqueduct, ensuring a supply of backup drinking water while Upper Reservoir lowered for repair. Engineering designs are underway for the Upper Reservoir Dam, and partial funding has been secured via the WQIP program. The Village is applying for construction grants for additional funding. The project for the Upper Reservoir Dam is expected to extend into 2029. Once completed, the Village will examine the Lower Reservoir Dam and Foundry Brook Dam impoundment to identify work needed and complete project scoping activities.	
Estimated Cost:	High	
Potential Funding Sources:	Village Budget, Dam Owners, NYS DEC, HHPA, FEMA HMA	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams, preserve surface-source drinking water supply, and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located and those downslope.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dams	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource. Loss of surface-source drinking water supply.
	Elevate nearby structures	Very high cost and likely not feasible for residential or commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-ColdSpringV-09. Repetitive Loss Properties

Lead Agency:	Code Enforcement	
Supporting Agencies:	Village Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Due to frequent flooding events in the Village, there are 10 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.	
Description of the Solution:	The municipality will conduct an outreach program to all repetitive loss properties. The outreach will inform the property owners of this repetitive loss status and provide mitigation alternatives that the property can do to protect the structure from future flood losses. If the property owner is interested in structural mitigation measures, the municipality will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement the mitigation measure chosen (acquisition, elevation, moving).	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Village Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Village's current NFIP capabilities.	
Climate Change Considerations:	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 Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-ColdSpringV-10. Cold Spring Upper Reservoir Dam Rehab

Lead Agency:	Water & Wastewater	
Supporting Agencies:	Consulting Engineer, Putnam County BES, NYS DEC, NYC DEP, Village Board	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Cold Spring Upper Reservoir Dam is a Class C High Hazard Dam that is located on Foundry Brook at the Cold Spring Reservoir, within the Town of Philipstown, on Lake Surprise Road. The is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, and Fishkill Road, among others. Impacts from a failure at the Cold Spring Upper Reservoir Dam could trigger a failure at the Cold Spring Lower Reservoir Dam due to the increased pressure from building water – these impacts would flood downstream from Foundry Brook toward Lake Surprise, inundating the recreational areas and residential and commercial properties downstream. During the dam's last inspection in January 2025, it was found to be structurally unsound; property has been acquired by the Village to access the Upper Reservoir with heavy machinery, and as of Fall 2026 engineering design for repairs is underway. Partial grant funding has been secured for the at least $8-9M project.	
Description of the Solution:	Engineering designs are underway for the Upper Reservoir Dam, and partial funding has been secured via the WQIP program. The Village is applying for construction grants for additional funding. The project for the Upper Reservoir Dam is expected to extend into 2029.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, NYS DEC, Village Budget	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live within the dam inundation areas, increase the resilience of responding agencies, and preserve surface-source drinking water.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be made for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource. Loss of surface-source drinking water supply.
	Elevate nearby structures	Very high cost and likely not feasible for residential and commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-ColdSpringV-11. Cold Spring Lower Reservoir Dam Rehab

Lead Agency:	Water & Wastewater	
Supporting Agencies:	Consulting Engineer, Putnam County BES, NYS DEC, NYC DEP, Village Board	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Cold Spring Lower Reservoir Dam is a Class C High Hazard Dam that is located on Foundry Brook at the Cold Spring Reservoir, within the Town of Philipstown, on Lake Surprise and Foundry Pond Roads. The dam is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, and Fishkill Road, among others. Impacts from a failure at the Cold Spring Upper Reservoir Dam would escalate any impacts already felt by a failure at the Cold Spring Lower Reservoir Dam. These impacts would flood residential and commercial properties downstream. During the dam's last inspection in July 2024, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine engineering solutions. Funding is needed for evaluation, design, and construction.	
Description of the Solution:	A consulting Engineer will complete an engineering study of the Cold Spring Dam (lower) to identify any potential needs for retrofits or improvements. The Village will also share information from the report with the Town of Philipstown, Putnam County, NYS DEC, and other pertinent partners. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Village of Cold Spring will search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, NYS DEC, Village Budget	
Implementation Timeline:	5-10 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be made for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource. Loss of surface-source water supply.
	Elevate nearby structures	Very high cost and likely not feasible for residential or commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-ColdSpringV-12. Back Brook Flood Mitigation

Lead Agency:	Highway Department	
Supporting Agencies:	Water & Wastewater Department; NYS DEC; New York State Parks, Philipstown Natural Resources Office; Town of Philipstown Code Enforcement, Haldane Central School District	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Bull Hill (aka Mt. Taurus, within the Hudson Highlands Park Preserve) has a steep slope, causing heavy rains to flow over the terrain, impacting the Village of Cold Spring, primarily through the compounding flooding of the Back Brook. Several roads are impacted by this steep slope flooding, including Cedar Street and Half Moon Ridge. Cedar Street is one of the two entrance/egress points for Haldane Central School. Philipstown Volunteer Ambulance Corps (PVAC), which is located at 14 Cedar Street, is also impacted by this flooding. Half Moon Ridge is a road branched off Cedar Street, which leads to private residencies. Flooding along Back Brook originates on Cold Spring's northeast border with Nelsonville, and adjacent to the Hudson Highlands Park Preserve; it is conveyed both under and above ground by varying sizes of culverts, in varying condition.	
Description of the Solution:	The Village, in cooperation with the Village of Nelsonville, the Town of Philipstown, the Haldane Central School District and New York State Parks, will take several courses of action to reduce the flood risk in areas surrounding the Back Brook, including: • Install retention and detention locations for steep slope runoff in the Nelsonville woods and on the Haldane Central School Property • Identify culvert and wing wall locations needing to be upsized • Consider alternative stormwater routing • Harden streambeds in the Back Brook, with permitting from NYS DEC as required • Enforce consistent stream bed protection overlay district management of Back Brook • Establish and enforce fines for brush and other dumping in the Back Brook	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Village Budget, NYS DEC, NYS Parks	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.	
Impact on Critical Facilities/Lifelines:	The stabilization measures will permit roads to remain open as a transportation route.	
Impact on Capabilities:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Elevate nearby roads	Cost prohibitive
	Acquire all properties which flood	Cost prohibitive

Action 2027-ColdSpringV-13. Waterfront Flood Mitigation

Lead Agency:	Highway Department	
Supporting Agencies:	Water & Wastewater, Police, NYS DEC, NYS DOS, Town of Philipstown Code Enforcement, New York State Parks	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Properties along waterfront are vulnerable to storm surge flooding as well as steep slope flooding. Flooding during Hurricanes Irene and Sandy, as well as the July 2023 Superstorm flooded basements and some first floors. All buildings in the area are flood susceptible during high tide periods, and many have utilities and oil tanks in the basement.	
Description of the Solution:	The Village will take several courses of action to reduce the flood risk along the waterfront area, including: • Provide public education on flood safety and preparedness • Investigate an electrical design disconnect to de-energize this area prior to inundation • Work with property owners to elevate utilities and oil tanks which are often in basements • Assure the ground level oil and LPG tanks are properly secured • Update LWRP to reflect changing storm scenarios since 2011 • Model and analyze river rise predictions and planned withdrawal options	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Village Budget, NYS DEC	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties. Property owners will be educated further regarding flood risk and implement measures to reduce compounded flood risks.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events. Property owners will be educated further regarding flood risk and implement measures to reduce compounded flood risks.	
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.	
Impact on Critical Facilities/Lifelines:	Not applicable	
Impact on Capabilities:	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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Elevate nearby roads	Cost prohibitive
	Acquire all properties which flood	Cost prohibitive

Action 2027-ColdSpringV-14. Cedar Street Culvert

Lead Agency:	Highway Department	
Supporting Agencies:	Engineer	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The culvert on Cedar Street is undersized at 18” and connects to a 10” clay culvert running under private property. Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of stormwater. Water and debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding and impacting the integrity of the drainage system. Philipstown Volunteer Ambulance Corps (PVAC), which is located at 14 Cedar Street, is near the undersized culvert on Cedar Street.	
Description of the Solution:	A climate adaptability study and consulting engineers will identify the proper size necessary to provide stormwater capacity and complete the necessary upsizing for the Cedar Street culvert.	
Estimated Cost:	TBD after study is complete	
Potential Funding Sources:	FEMA HMA, CHIPS, NYS DEC, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. PVAC and Haldane Central School will have easier access and fewer closures.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 2027-ColdSpringV-15. Village Evacuation Routes

Lead Agency:	Highway Department	
Supporting Agencies:	Mayor, Putnam County BES, NYS DHSES, NYS DOT, Putnam County DPW	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	Route 9D is the only north/south evacuation route for the Village. Recent flooding in July 2026 shut portions of that route down; concurrent flooding on Route 9 shut down the other nearby north/south evacuation route through the bordering Town of Philipstown, leaving no re-route option from Route 9D. Any fires spurring in the State lands bordering the Village which would require evacuation would rely on Route 9D for evacuation, as it sends populations away from impacted areas.	
Description of the Solution:	The Village will look to reduce long term risk by working with County and State representatives to evaluate and identify appropriate evacuation routes for the Village. Evacuations may be required due to flooding impacts and encroaching wildfires.	
Estimated Cost:	Low	
Potential Funding Sources:	Village Budget, EMGP, County Budget, State Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2	
Benefits:	Evaluating evacuation routes with surrounding jurisdictions ensures continuity during implementation. Furthermore, identifying routes which are not impacted, or have limited impact, to hazards, such as flood, prevent additional loss or damages.	
Impact on Socially Vulnerable Populations:	Having pre-determined evacuation routes can assist at risk populations in preparing themselves and those within their community to evacuate in a safe, timely fashion.	
Impact on Future Development:	Future development would need to be built with access to the identified evacuation routes.	
Impact on Critical Facilities/Lifelines:	Identifying evacuation routes can assist in smooth transportation operations across multiple jurisdictions.	
Impact on Capabilities:	This action will produce a planning capability for the Village, making it more resilient.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Do not consult surrounding municipalities	Evacuation routes may go against one another
	Do not publicize routes	Residents will not be aware of the evacuation routes

Action 2027-ColdSpringV-16. FEMA FIRM Mapping Updates

Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Village Administration, Putnam County, NYS DEC, NYS DHSES, FEMA	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Existing floodplain maps are outdated and do not accurately recognize the steep slope flood threat in the Village. Correctly displaying the areas at risk to the flood hazard is not only critical to visually show the risk, but to support grant applications for funding to mitigate the flood risk at identified locations within or around the floodplain.	
Description of the Solution:	The Village will actively participate in the remapping process. This participation will include providing data and information to support map revisions, identifying areas of flooding concern, providing review of preliminary maps, and adopting updated flood damage prevention local laws when the FIRMs are finalized.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, State Budget, County Budget, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 5	
Benefits:	Updating FIRMs will provide a more complete picture of the floodplain and the overall flood hazard in the Village and County. This will inform other sectors of the community, including land use, development, permitting, and codes and standards.	
Impact on Socially Vulnerable Populations:	An analysis of the floodplain will inform future community development and land use and prevent vulnerable populations from residing in areas of heightened flood risk. Make flood insurance accessible to more vulnerable homeowners.	
Impact on Future Development:	Updated FIRMs will decide which populations and structures will require flood insurance to be built in areas of flood hazard.	
Impact on Critical Facilities/Lifelines:	Creation of updated floodplain maps will inform efforts to increase the resilience of critical infrastructure that is present in those areas, including transportation routes, water treatment plants, and other utility services. This will also aid in preventing future development of infrastructure in these areas.	
Impact on Capabilities:	An understanding of the floodplain will allow for the development of processes, plans, training and staff placement to address flooding issues in the areas of greatest concern before they occur.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Village creates its own flood maps	Time consuming, cost prohibitive, may not be recognized as official documentation in grant applications
	FEMA updates maps without Village input	Required changes for areas of flooding may not be incorporated

Action 2027-ColdSpringV-17. NYS DEC Dam Inventory Updates

Lead Agency:	Water and Wastewater	
Supporting Agencies:	NYS DEC, NYS DHSES, Mayor	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Dams identified to be in the Village utilizing the New York State Division of Environmental Conservation is inaccurate, as it indicated the Barrett Pond Dam being located in the Village instead of correct location of the Town of Philipstown. Accurately identifying the location of dams is crucial to ensuring dam safety measures are dispersed to potentially impacted individuals.	
Description of the Solution:	The Village will work with the County and NYS DEC to ensure the NYS DEC data base is reflective of the current information concerning the dams in the Village. All of the Village owned drinking water impoundments are outside of the Village, within the Town of Philipstown.	
Estimated Cost:	Low	
Potential Funding Sources:	NYS DEC, Village Budget, Property Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 6	
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.	
Impact on Socially Vulnerable Populations:	This action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to at risk populations exists.	
Impact on Future Development:	This action accounts for future development that may be impacted by the inundation area of the Village dams within the Town of Philipstown. Only one dam is located within the Village, and it is owned by Scenic Hudson. Scenic Hudson has applied for a grant to dismantle the dam and harden the Foundry Brook stream bed within their property.	
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will create an understanding of the appropriate location for identified dam.	
Impact on Capabilities:	This action will ensure a resource for the Village, and that of the State, is accurate.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Utilize information from the National Inventory of Dams	Not all dams are listed on the inventory
	Rely on Private Property owners	Private property owners may be unsure of who to contact

Table 5-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-ColdSpringV-01	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-ColdSpringV-02	Comprehensive Outreach Program	1	1	1	1	1	1	0	1	1	1	1	1	0	1	**12**	High
2027-ColdSpringV-03	Back Brook Accessibility	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-ColdSpringV-04	Wildfire Mutual Aid Discussions	1	1	1	1	1	1	0	0	1	0	0	1	1	0	**9**	Medium
2027-ColdSpringV-05	Generators at Critical Facilities	1	1	1	1	1	1	0	1	1	1	1	1	1	0	**12**	High
2027-ColdSpringV-06	Lunn Terrace Railroad Overpass Replacement	1	0	1	0	0	0	0	1	0	1	1	1	1	1	**8**	Medium
2027-ColdSpringV-07	Continuity of Operations Plan	1	0	1	1	1	1	0	1	1	1	0	1	1	0	**10**	Medium
2027-ColdSpringV-08	Village Water Impoundments	1	1	1	1	1	0	1	1	1	0	1	1	1	1	**12**	High
2027-ColdSpringV-09	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	0	1	1	0	1	**11**	High
2027-ColdSpringV-10	Cold Spring Upper Reservoir Dam Rehab	1	1	1	1	1	0	1	1	1	0	1	1	1	1	**12**	High
2027-ColdSpringV-11	Cold Spring Lower Reservoir Dam Rehab	1	1	1	1	1	0	1	1	1	0	1	0	1	1	**11**	High
2027-ColdSpringV-12	Back Brook Flood Mitigation	1	1	1	1	0	0	1	1	1	1	1	1	0	1	**11**	High
2027-ColdSpringV-13	Waterfront Flood Mitigation	1	1	1	1	0	0	1	1	1	1	1	1	0	1	**11**	High

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-ColdSpringV-14	Cedar Street Culvert	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-ColdSpringV-15	Village Evacuation Routes	1	1	1	1	0	1	0	1	1	1	1	1	1	0	**11**	High
2027-ColdSpringV-16	FEMA FIRM Mapping Updates	1	1	1	1	1	1	1	1	1	1	1	1	0	0	**12**	High
2027-ColdSpringV-17	NYS DEC Dam Inventory Updates	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**13**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

6. TOWN OF KENT

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

6.1 HAZARD MITIGATION PLANNING TEAM

The Town of Kent identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments.

Table 6-1 summarizes the Town officials who participated in the development of the annex. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 6-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Jaime McGlasson, Town Supervisor Address: 25 Sybil's Crossing, Kent Lakes, NY 10512 Phone Number: (845) 225-3943 Email: jmcglasson@townofkentny.gov	Name/Title: Richard T. Othmer Jr., Highway Superintendent Address: 25 Sybil's Crossing, Kent Lakes, NY 10512 Phone Number: (845) 225-7172 Email: rothmer@townofkentny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Bill Walters, Building Inspector Address: 25 Sybil's Crossing, Kent Lakes, NY 10512 Phone Number: (845) 225-3900 Email: buildinginspector@townofkentny.gov	
Additional Contributors	
Name/Title: Kevin Owens, Chief of Police – Kent PD Method of Participation: Provided information for the development of the jurisdictional annex	

6.2 COMMUNITY PROFILE

6.2.1 Community Classifications

Table 6-2 summarizes classifications for community programs available to Kent.

Table 6-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-

Program	Participating? (Yes/No)	Classification	Date Classified
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	Yes	Bronze	June 21, 2024
NYSERDA Clean Energy Community	Yes	Not Designated	March 30, 2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

6.2.2 Community Profile

The Town of Kent is located in north-central Putnam County, just south of Dutchess County, bordered on the east by Patterson, on the south by Carmel and on the west by Putnam Valley and Philipstown.

Table 6-3 through Table 6-6 note land area, population, and building stock information for the Town of Kent.

Table 6-3. Total Land Area in the Town of Kent

Jurisdiction	Total Land Area	
	Acres	Square Miles
Kent (T)	25,511.7	39.9

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 6-4. Population Estimates in the Town of Kent

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
12,900	13.2%	12,896	13.1%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 6-5. Vulnerable Populations in the Town of Kent

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
2,224	17.2%	815	6.3%	239	1.9%	1,314	10.2%	852	6.6%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 6-6. General Building Stock in the Town of Kent

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
5,760	$3,047,474,569	4,822	$2,155,885,187	817	$563,581,097	12	$32,640,964	109	$295,367,321

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

6.3 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 Kent's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

6.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Kent are shown in Figure 6-1 and Figure 6-2. 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 Kent has significant exposure.

Figure 6-1. Kent Hazard Area Map #1

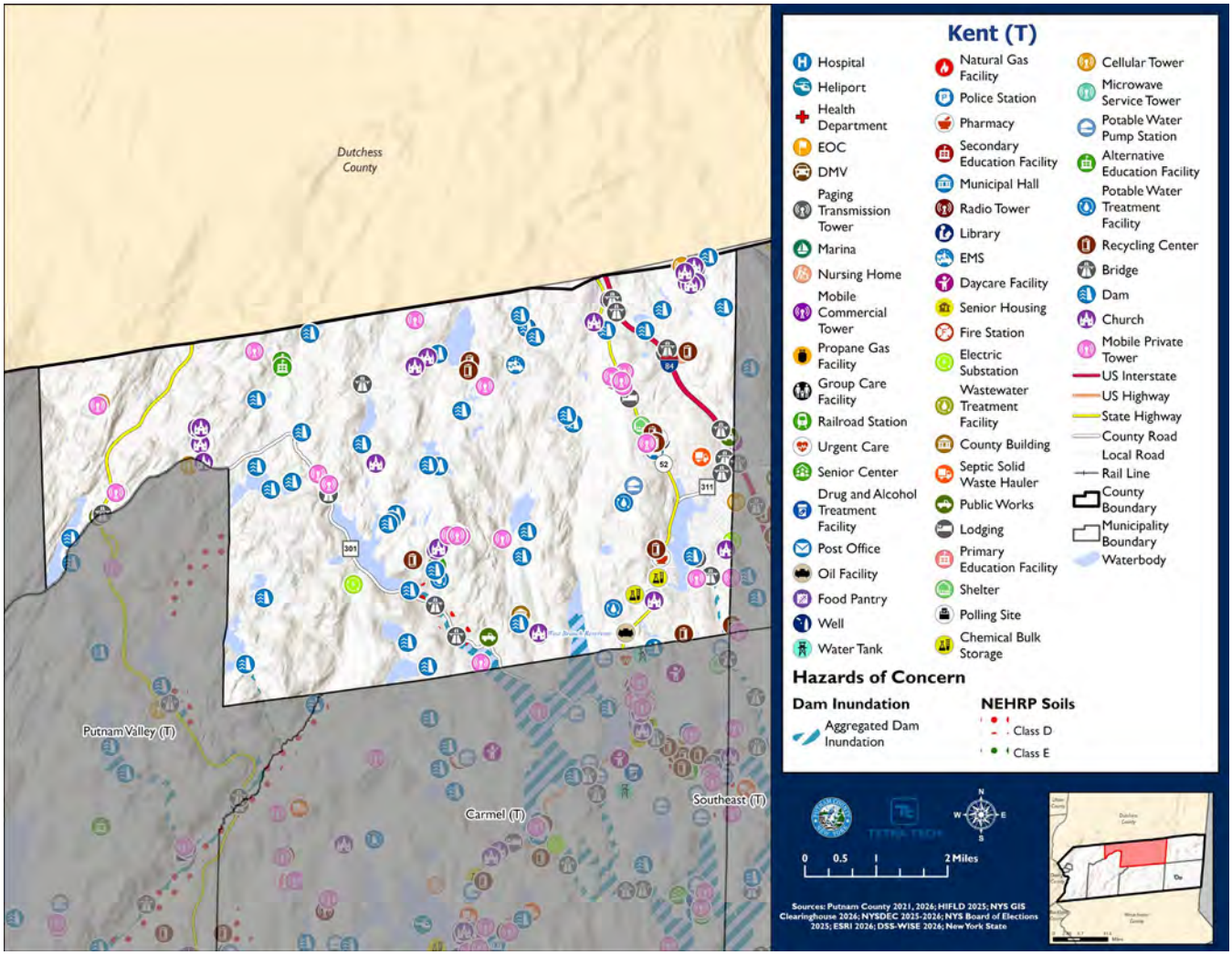
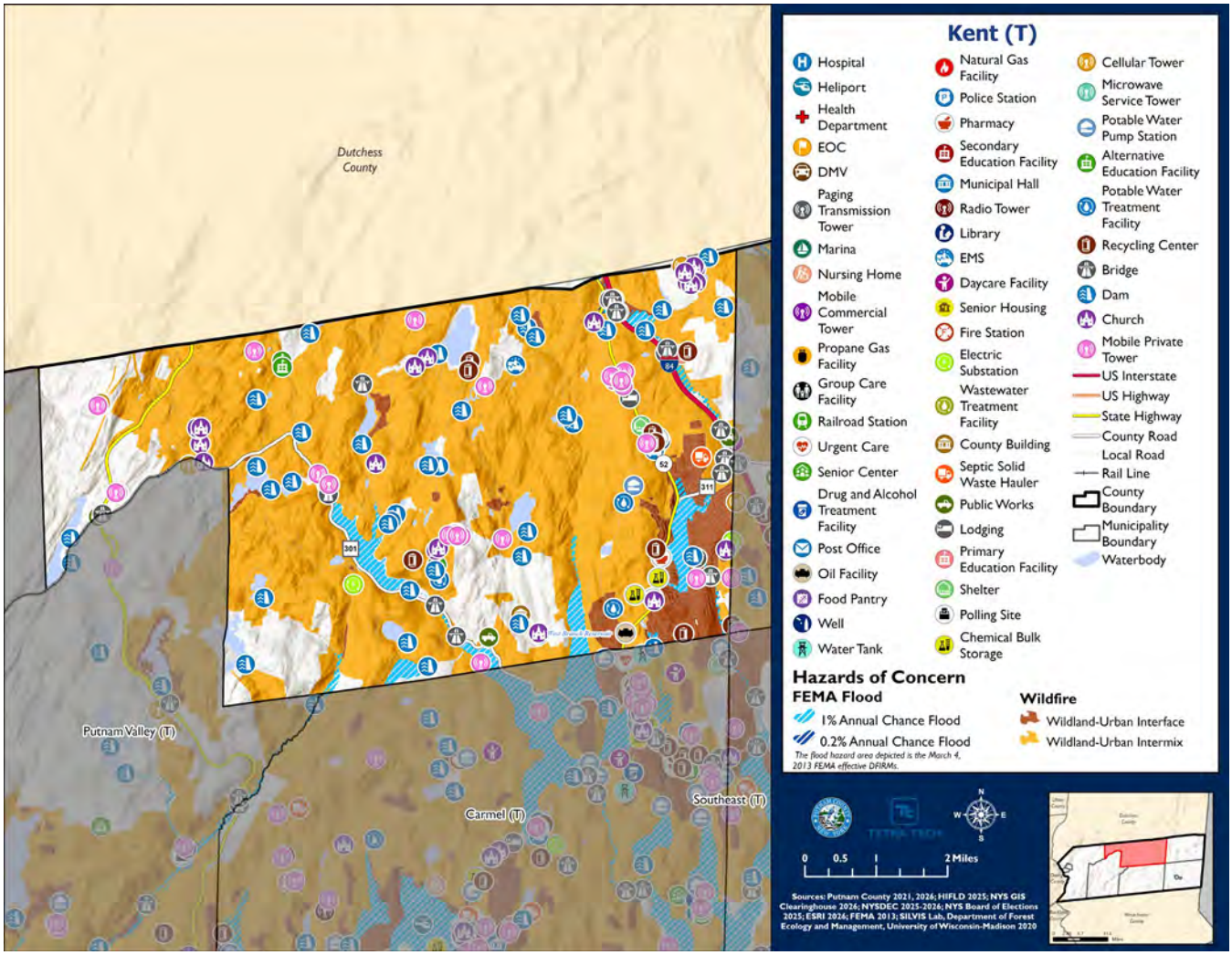


Figure 6-2. Kent Hazard Area Map #2



6.3.2 Previous Event History

The history of natural and non-natural hazard events in Kent is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 6-7 and Table 6-8 provide details on the loss and damage in Kent during hazard events since the last hazard mitigation plan update.

Table 6-7. Presidential Disaster Declarations History in Kent

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Kent
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	Adhered to mandates, social distancing where needed
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	Road erosion, localized flooding

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Kent
August 21-24, 2021	EM-3565-NY	Hurricane Henri	Road erosion, localized flooding
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	Road erosion, localized flooding
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	Road erosion, localized flooding

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 6-8. Hazard Event History in Kent

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Kent
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	No impacts
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	Downed trees, power outage, response from highway personnel.
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	Progress on fixing Long Hill Road was halted and had to restart due to damages incurred. Downed trees and power outages; response from highway personnel.
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No impacts
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	No impacts
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	Downed trees and power outages; response from highway personnel.
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	Downed trees and power outages; response from highway personnel.
October 22 – November 15, 2024	-	The “Golf Ridge Fire” has a listed cause of miscellaneous. A total of 33 acres burned on government property.	Wildfires on DEC land had the response from Kent Highway, costing around $40k. Road

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Kent
			closures, smoke inhalation for responders (a few to the ER).
February 22-23, 2026	-	A major Nor'easter brought near blizzard conditions. Over a foot of snow was reported, with estimates up to 18 inches across the County. Snowfall accumulations reached up to 19 inches in areas of Putnam County.	Snowstorm caved in the roof of the water district facility. A water truck had to be brought in to provide potable water for residents and customers. Individuals were out of water for several days. The Town likely incurred hundreds of thousands of dollars.

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

6.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 6-9 includes an inventory of critical facilities and infrastructure for the Town of Kent.

Table 6-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
City of New York-WPML524	Mobile Private Tower	Y	Y	2027-KentT-01	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Seven bridges and two dams were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

6.3.4 Local Hazard Impacts Assessment

Representatives from the Town of Kent Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 6-10.

Table 6-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	Any failure of the Lake Carmel, Lake Louise, etc. would cause extreme detriment and impacts to persons, property, and infrastructure. Financial constraints for dam upkeep. Lake Carmel dam is at risk of overtopping.
Disease Outbreak	Loss of salary (economic constraints); concerns with the nursing home in Town.

Hazard Name	Local Impacts: People, Community Services, Local Economy
Drought	Severe droughts have cost several thousand dollars, cascading into wildfires. Most residents are on wells.
Earthquake	Nothing detrimental
Extreme Temperatures	Some impacts, but personnel work through the events.
Flood	Roads that flood a lot: Old Forge Road, Churchill Road, Gordon Road, White Pond Colony, Long Hill (paved via FEMA funds), Horton Town Hill. 62 Levington Court (Highway Facility) is impacted by flooding and 21 Smokey Hollow (Substation or Highway). Town Hall (25 Sybil's Crossing) basement floods during heavy rains, which impacts the storage of critical files. Feeder streams reveal themselves during periods of heavy rain.
Harmful Algal Blooms	Phosphorus and other runoff impacts residential lands following heavy rain events. Lake Carmel frequent and annual blooms which impacts recreation and funding. White Pond and Canopus Lake also have blooms.
Severe Storm	Town has experienced long term power outages. Older residents rely on medical equipment which needs electrical. Many residents are on wells have issues with access to potable water when power goes out.
Severe Winter Storm	Town has experienced long term power outages. Older residents rely on medical equipment which needs electrical. Many residents are on wells have issues with access to potable water when power goes out. Roads closures, and downed trees are very common due to the forested and wooded landscape. Elderly populations become shut in – a lot of check-ins. Electric heat is common for residents. Snapped trees and branches from ice accumulation. Salt shortages in Town. Concerns with salt seepage into potable water.
Terrorism	No direct impacts, but residents who commute to the city may be impacted economically.
Wildfire	Town is forested and woodlands. 70% of land is owned by NYS and NYC – Town is expected to put out the fires on impacted lands. Large Mutual Aid in the Town and surrounding jurisdictions.

6.3.5 Vulnerable Community Assets

Representatives from the Town of Kent Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 6-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 6-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	No impacts	**Area: Concentration of Local Businesses, Major Employers**	Route 52 is the main business corridor (from Ludingtonville to Dykeman Road), the road will flood.
Area: Concentration of Residences	Residencies near the Lake Carmel Dam, 7 Hills Lake, South Lake, and Sagamore Lake – many those living downstream. Sedgewick may be more at risk to wildfires, as well as Gypsy Trail Club, Sagamore – most of the	**Local Roads, Highways, Culverts, Bridges**	Old Forge Road, Churchill Road, Gordon Road, White Pond Colony, Long Hill (paved via FEMA funds).

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
	western area of the Town (Gypsy Trail Road westward).		
Municipal Buildings	Horton Town Hill. 62 Levington Court (Highway Facility) is impacted by flooding and 21 Smokey Hollow (Substation or Highway). Town Hall (25 Sybil's Crossing) basement floods during heavy rains, which impacts the storage of critical files. Old Town Hall is susceptible to flooding.	**Medical Centers (non-hospital)**	No impacts.
College/University	No impacts	**Place of Worship**	Available in Town, but not subject to hazard impacts.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	Ryan's Field would be destroyed if the Lake Carmel Dam. Huestis Park also floods (Black Pond and Black Pond Swamp)	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	62 Levington Court (Highway Facility) is impacted by flooding and 21 Smokey Hollow (Substation or Highway). School bus garage in town is on the hill, but rain runoff could make the road treacherous. Parking garage could collapse with heavy snow accumulation or severe storm impacts. Town has four traffic signals.
Cultural/Historic Buildings/Sites	Luddington Mill Center– if heavy rains occur the area floods, as well as the Town museum.	**Schools (K-12)**	Could be used for a sheltering facility, but not currently. Both schools have back-up power.
Elder-care Facilities	Concerns with moving or evacuating residents.	**Utilities**	Transfer station but not impacted.
Fire/Police Stations	Kent FD and Lake Carmel FD has a cliff behind it which could be at risk. Lake Carmel FD is across the street from Kent PD – Kent PD could be impacted from any events at the FD.	**Wastewater Treatment Plants**	One just acquired, no concerns.
Gas Stations, Grocery Stores, Supermarkets	Economic impacts to facility owners; shortages potentially for residents and visitors.	**Water: Drinking Water Resources**	Many residents are on wells have issues with access to potable water when power goes out. Two water districts. Lines are broken, some from severe storm damages. Stormwater runoff runs into the lines and can infiltrate and bring damaging debris. Town is considering digging new wells for the water districts.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Hospitals	No impacts	**Other**	No additional concerns.

6.3.6 Dams

Table 6-12 includes all dams in the Town of Kent. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 6-12. Dams Located in Kent

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
230-2508	M R Thexton Lake Dam	TR-MIDDLE BR CROTON RIVER	Not Found	Not Found	Recreation	Low Hazard Dam
231-0867	Lake Carmel Dam	MIDDLE BRANCH CROTON RIVER	TOWN OF KENT	Local Government	Recreation	High Hazard Dam
231-1113A	Blue Spruce Dam	TR-BOYD CORNERS RESERVOIR	MRS IVAN BENNETT	N/A	Recreation	Low Hazard Dam
231-1475	Upper Lake Nimham Dam	TR-BOYD CORNERS RESERVOIR	TOWN OF KENT	Local Government	Recreation	Low Hazard Dam
231-1563	Rohener Pond Dam	TR-WEST BRANCH RESERVOIR	ALFRED A ROHNER	N/A	Recreation	Low Hazard Dam
231-3003A	Levine Lake Dam A	TR-HORSE POND BROOK	KENTWOOD LAKE PROPERTY OWNERS ASSOCIATION	Private	Fire Protection, Stock, Or Small Farm Pond, Recreation	Low Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-3003B	Levine Lake Dam B (dike)	TR-HORSE POND BROOK	S H LEVINE	N/A	Recreation	Low Hazard Dam
231-3519A	Lower Lake Nimham Dam	BAILEY BROOK	JULIE S. DALE	Private	Recreation	Low Hazard Dam
230-0571	South Lake Dam (middle)	TR-STUMP POND STREAM	Putnam County Department of Public Works	Local Government	Recreation	Intermediate Hazard Dam
230-0575	Drew Lake Dam	STUMP POND STREAM	HENRY JACKSON	N/A	Recreation	Low Hazard Dam
230-0580	Browns Pond Dam	TR-MIDDLE BR CROTON RIVER	Holmes Presbyterian Camp and Conference Center	Private	Recreation	Low Hazard Dam
230-0582	Turner Mill Pond Dam	TR-MIDDLE BR CROTON RIVER	Alfred M. Dileo	Private	Irrigation	Low Hazard Dam
231-5210	Clear Pool Dam	CLEAR POOL LAKE	CLEAR POOL INC.	N/A	Other	Low Hazard Dam
231-5472	Veterans Park Dam	TR-PINE POND	Not Found	Not Found	Other	Low Hazard Dam
231-4120	Little Buck Mountain Pond Dam	BAILEY BROOK	MARTIN L CONRAD	N/A	Recreation	Low Hazard Dam
231-4454	Ivan Bennett Dam	TR-BOYD CORNERS RESERVOIR	MRS IVAN BENNETT	N/A	Recreation	Low Hazard Dam
231-4455	Lower Swimming Pond Dam	BAILEY BROOK	MRS IVAN BENNETT	N/A	Recreation	Low Hazard Dam
231-4500	Barrett Pond Dam	TR-WEST BRANCH RESERVOIR	EMILY BOXER	N/A	Flood Control and Storm Water Management, Recreation	Low Hazard Dam
231-4608	Pine Pond Dam	TR-WEST BRANCH CROTON RIVER	GYPSY TRAIL CLUB INC	Private	Fire Protection, Stock, Or Small Farm Pond, Recreation	Low Hazard Dam
230-5707	South Lake Dam (lower)	TR-STUMP POND STREAM	TOWN OF KENT	Local Government	Recreation	Intermediate Hazard Dam
230-5708	South Lake Dam (upper)	TR-STUMP POND STREAM	Putnam County Department of Public Works	Local Government	Recreation	Intermediate Hazard Dam
231-0529	Boyds Corner Dam	WEST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0564A	White Pond Dam	TR-BOYD CORNERS RESERVOIR	NYS DEC DIVISION OF LANDS & FORESTS	State	Recreation	Intermediate Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-2385	Marcell Roth Lake Dam	TR-PEEKSKILL HOLLOW CREEK	NYS DEC DIVISION OF LANDS & FORESTS	State	Recreation	High Hazard Dam
213-2531	Seven Hills Realty Co Inc Dam	TR-W BRANCH CROTON RIVER	SEVEN HILLS LAKE PROPERTY OWNERS ASSOC., NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government, Private	Recreation	Low Hazard Dam
213-3783	Canopus Lake North End Dam	CANOPUS CREEK	NYS PARKS & RECREATION TACONIC	State	Other, Recreation	Low Hazard Dam
213-4121	Lake Tibet Dam	PEEKSKILL HOLLOW CREEK	TOWN OF KENT	Local Government	Fire Protection, Stock, Or Small Farm Pond, Recreation	Low Hazard Dam
213-1113	Sagamore Lake Dam	WEST BRANCH CROTON RIVER	LAKE SAGAMORE COMMUNITY ASSOCIATION	Private	Recreation	Intermediate Hazard Dam
213-1194	Twin Brooks Dam	BLACK POND BROOK	NORMAN EPSTEIN	N/A	Recreation	Low Hazard Dam
213-1746	Merritt Ryder Lake Dam	TR-BLACK POND BROOK	MERRITT RYDER	N/A	Recreation	Low Hazard Dam
213-2209	Ryder Lake Dam	WEST BRANCH CROTON RIVER	MARIGRACE BLANKS	Private	Recreation	Intermediate Hazard Dam
212-3411	Leland Ryder Lake Dam	BLACK POND BROOK	ESTATE OF LELAND RYDER	Private	Recreation	Low Hazard Dam
213-5819	ADAM POND DAM	-	Not Found	Not Found	Not Found	Low Hazard Dam
230-5906	Westminister Lake Dam	Tr - Middle Branch Croton River	Holmes Presbyterian Camp and Conference Center	Private	Recreation	Low Hazard Dam

Identified information about dam risk in the Town, or to dams owned by the Town, are noted below:

Any failure of the Lake Carmel, Lake Louise, etc. would cause extreme detriment and impacts to persons, property, and infrastructure. Financial constraints for dam upkeep. Lake Carmel dam is at risk of overtopping during heavy rains.

6.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 6-13 identifies the preliminary hazard ranking for Kent, whether the Town agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 6-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	Medium	Due to the HHPDs in the Town, and structural concerns, the Town has decided to increase the ranking.	Medium
Disease Outbreak	Medium	Agree	-	-	Medium
Drought	High	Disagree	Medium	Most of the residents are on private wells. The Town has two water districts and is looking to improve the facilities and infrastructure.	Medium
Earthquake	Low	Agree	-	-	Low
Extreme Temperatures	Medium	Agree	-	-	Medium
Flood	Low	Agree	-	-	Low
Harmful Algal Blooms	Medium	Agree	-	-	Medium
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Agree	-	-	Low
Wildfire	High	Agree	-	-	High

6.4 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 6-14 through Table 6-17.

6.4.1 Development and Permitting

Table 6-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes - Town of Kent Building Department
What is your process for tracking building permits?	Online system of tracking
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes
Does your community have a buildable land inventory? If yes, please describe.	No, The Town is approaching build-out as significant portions of Kent are parkland or are in the NYC watershed. Growth is supported along Route 52 corridor.

Table 6-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	3	0	0	3
Permits within SFHA	0	0	0	0
2022				
Total Permits	9	0	0	9
Permits within SFHA	0	0	0	0
2023				
Total Permits	3	0	0	3
Permits within SFHA	0	0	0	0
2024				
Total Permits	8	0	0	8
Permits within SFHA	0	0	0	0
2025				
Total Permits	10	0	0	10
Permits within SFHA	0	0	0	0

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

Table 6-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
The Town did not identify any recent major development and infrstructure from 2020 to present					

Table 6-17. 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 Zones*	Description / Status of Development
Winkler Farms	Apartments	6	33.16-1-8	Water - wetland	Planning board review

6.5 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 6-1 is responsible for maintaining this information.

6.5.1 NFIP Statistics

Table 6-18 summarizes the NFIP policy and claim statistics for the Town of Kent.

Table 6-18. Kent NFIP Summary of Policy and Claim Statistics

NFIP Community Number	360671#
FEMA 2020 NFIP Data	
# Policies	17
# Claims (Losses)	19
Total Losses Claimed	$28,812
# Repetitive Loss Properties (NFIP definition)	2
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	2
Repetitive Loss Events	1
Net Building Payment	$5,930
Net Contents Payment	$345
Total Net Payment	$6,276

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 2020, 2026

Note: "-" = information unavailable

6.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 6-19.

Table 6-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Route 52 is the main business corridor (from Ludingtonville to Dykeman Road), the road will flood. Roads that flood a lot: Old Forge Road, Churchill Road, Gordon Road, White Pond Colony, Long Hill (paved via FEMA funds), Horton Town Hill. 62 Levington Court (Highway Facility) is impacted by flooding and 21 Smokey Hollow (Substation or Highway). Town Hall (25 Sybil's Crossing) basement floods during heavy rains, which impacts the storage of critical files. Feeder streams reveal themselves during periods of heavy rain.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	The Building Inspector is hereby appointed Local Administrator to administer and implement this local law by granting or denying floodplain development permits in accordance with its provisions
What local department is responsible for floodplain management?	Building Department
Are there any certified floodplain managers on staff in your jurisdiction?	Building inspector
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 39
What is the date that your flood damage prevention ordinance was last amended?	February 6, 2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Permit review, inspections
What are the barriers to running an effective NFIP program in your community, if any?	staff
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	No staff / or time
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	"Substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage", regardless of the actual repair work performed

NFIP Topic	Comments
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	none
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	no
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	None
Does the community maintain elevation records? If yes, please describe.	unknown
Describe any areas of flood risk with limited NFIP policy coverage.	Ludingtonville Rd . Towners Court . town park, winkler farm
How does the community teach property owners or other stakeholders about the importance of flood insurance?	no
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	maps
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?	The Town of Kent's Building Department is responsible for floodplain management and undertakes permit application review.

6.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Kent 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 Kent to identify opportunities for integrating mitigation concepts into ongoing Town procedures.

6.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 6-20 and Table 6-21 detail the available planning and regulatory capabilities of the Town.

Regulatory Capabilities

Table 6-20. Regulatory Capabilities in Kent

Capability Type	In Place in Municipality? Yes or No	Comment	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	NYS Uniform and Energy Code 2020; Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the "2015 I-Codes"), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017).. Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries.	NYS Uniform and Energy Code; Ch. 27, adopted 1/28/2008	Building Department
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	No	-	-	-
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019. A mining moratorium was enacted in 2020 to prevent significant soil removal.	Ch, 88, amended January 2009; Ch. 66. Adopted 4/8/05, amended 1/14/08	Stormwater Management Officer.
Flood Damage Prevention Ordinance	Yes	It is the purpose of this chapter to; A. regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities; B. require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the	Ch. 39, adopted 7/6/87, amended 1/29/13 State mandated freeboard or	Building Department – Building Inspector

Capability Type	In Place in Municipality? Yes or No	Comment	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		time of initial construction; C. control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters; D. control filling, grading, dredging and other development which may increase erosion or flood damages; E. regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands, and; F. qualify and maintain for participation in the National Flood Insurance Program.	BFE+2 for new construction and substantial improvements Ch. 39 in local code	
Growth Management	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	Yes	This requires urbanized areas (local governments) to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events to waterbodies to the "maximum extent practicable". The goal of the program is to improve water quality and recreational use of waterways. A Municipal Separate Storm Sewer Systems Permit, GP-0-15-003 is required.	All in zoning code Ch. 66 adopted 2005, 2008	NYSDEC
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes	This chapter seeks to meet the protection of Steep Slopes and Stormwater Management by achieving the following objectives: (1) Meet the requirements of minimum control measures 4 and 5 of the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02 as hereafter amended or revised; (2) Require land development activities to conform to the substantive requirements of the NYS Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities, as hereafter amended or revised; (3) Preserve steep slopes to the greatest extent practicable and to regulate their use to protect the public interest; (4) Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels	Chapter 66 Steep Slope Protection and Stormwater Management	Planning Board
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	In addition to facing potential liability for failing to disclose under the exceptions to “caveat emptor,” a home seller must make certain	Property Condition Disclosure	NYS Department of State, Real Estate Agent

Capability Type	In Place in Municipality? Yes or No	Comment	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		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.	Act, NY Code - Article 14 §460-467	
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a)The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	Ch. 77, adopted 12/28/78, amended 11/24/2008	Planning Board
Stormwater Management Code	Yes	This chapter seeks to meet the protection of Steep Slopes and Stormwater Management by achieving the following objectives: (1) Meet the requirements of minimum control measures 4 and 5 of the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02 as hereafter amended or revised; (2) Require land development activities to conform to the substantive requirements of the NYS Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities, as hereafter amended or revised; (3) Preserve steep slopes to the greatest extent practicable and to regulate their use to protect the public interest; (4) Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels	Ch. 66. Adopted 4/8/05, amended 1/14/08	Building Department; Highway Dept. Enviro consultant – stormwater reporting
Subdivision Code	Yes	•Chapter 66A, Subdivision of Land. The Planning Board of the Town of Kent is authorized and empowered to approve plats showing lots, with or without streets or highways. It is declared to be the policy of the Town Board to consider subdivisions as part of the orderly and desirable development of land, and to assure that land to be subdivided will produce building sites of such character and area that will permit their development for homes or buildings without danger to health or peril from fire, flood or other menace, while avoiding or minimizing, to the extent practicable, adverse environmental effects.	Ch. 66A, adopted 1/24/2012	Planning Board

Capability Type	In Place in Municipality? Yes or No	Comment	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		•If any portion of the land within the subdivision is subject to periodic inundation or flood hazard caused by stormwater, this portion shall be clearly indicated on any submissions required by these regulations. In cases of doubt, the Planning Board may require the submission of a flood hazard study delineating the limits of the one hundred- year floodplain. Such study shall be conducted by a licensed professional engineer. •Land subject to flooding and land deemed by the Planning Board to be otherwise uninhabitable shall not be platted for residential or commercial occupancy or for any such other use that may increase danger to health, life or property or aggravate the flood hazard. •The lot arrangement shall be such that, in constructing a building in compliance with Chapter 77,35 there will be no foreseeable prohibitions to development based upon soils, topography or other natural conditions, including the presence of regulated wetlands or floodplain areas.		
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	•Chapter 77, Zoning. This chapter is adopted to protect and promote the health, safety, comfort, convenience, economy, aesthetics and general welfare and for the following additional purposes: •To guide the future development of the Town in accordance with the Kent Comprehensive Plan so that the Town may realize its potential as a place to live and to work with the most beneficial and convenient relationships among the residential and commercial districts of the Town and with due consideration to: (a) The character of the district and its peculiar suitability for particular uses. (b) Existing conditions and trends in population economic activity, land use and building development. (c) Conserving the value of buildings and neighborhoods by encouraging the most appropriate use of land throughout the Town; (2) To prevent the pollution of streams, ponds and all other water resources, to prevent floods and to encourage the wise use and sound management of natural resources throughout the Town in order to preserve the integrity, stability and beauty of the community and the value of the land; and; To encourage flexibility in the design of land developments so as to promote the most appropriate use of lands, to	Ch. 77, adopted 12/28/78, amended 11/24/2008	Zoning Board of Appeals

Capability Type	In Place in Municipality? Yes or No	Comment	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		facilitate the adequate and economical provision of streets and utilities and to preserve, to the extent feasible, the natural qualities and functions of open lands. •The review of site plans by the Planning Baard shall include Existing topography and proposed grade elevations at a contour interval of not more than two feet, unless waived by the Planning Board, soil types, wetlands and watercourses, one-hundred-year floodplains, bedrock outcrops, slopes in excess of 10%, and the location of trees with a diameter of eight inches dbh and greater. •The Town has determined that it is necessary to standardize the way in which studies of plant and animal species and their habitat are conducted as part of the environmental impact review of residential and nonresidential development projects. By standardizing the way in which biodiversity assessments are conducted, the Town will be able to develop baseline, site-specific biological information across the diverse land types of the Town that will enhance the Town's ability to make informed planning decisions and maintain biodiversity as growth proceeds. •Proposed development shall be so designed as to provide for proper surface water management through a system of controlled drainage that preserves existing drainage patterns and protects other properties and environmentally sensitive lands.		

Planning Capabilities

Table 6-21. Planning Capabilities in Kent

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	Optional under NYS Law, municipality may adopt a comprehensive plan or proceed through a planning process which has evolved	Kent Comprehensive	Town Board

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		based on case law. (Per State Legislature General City Law section 28a, Town Law s. 272a, Village Law s. 7-722) **May be impacted by State wetland regulations which protect wetlands greater than 12.4 acres and established buffer zones. Regulated at the local level	Plan, adopted 11/2008	
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	Yes	A local government can decide to adopt its capital plan pursuant to General Municipal Law Section 99-g. The Town is working on developing a Capital Plan, which could include funding to support mitigation activities for public property and infrastructure	Annual Budget	Town Board
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B. The plan is developed and maintained by the New York State Office of Emergency Management and agencies that comprise the NYS Disaster Preparedness Commission (DPC)	PCBES; Multiple Plans (Haz-Mat, CEMP); January 2020	BES
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	Yes	• The threats associated with climate change and those accompanying global and technological challenges have the potential to dramatically undermine economic and environmental progress in the Region and beyond. • Although the smallest of the region's counties by area, Putnam County continues to position itself to take better advantage of for tourism and other forms of targeted economic development. As noted in annual updates of the previous CEDS, the largest constraint facing the County is that forty percent of its land is owned by the New York City Department of Environmental Protection as part of the New York City water supply system and 96 percent of the County is in the City's watershed. While many municipalities in the County are struggling to find sufficient infrastructure to support development. Nonetheless, the County reports making significant strides in improving its overall economic competitiveness.	Hudson Valley Region Comprehensive Economic Development Strategy 2019-2023	Hudson Valley Regional Council

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		• For the Hudson Valley Region, one of the types of Resiliency considered was Environmental Resilience and the ability to withstand Natural disasters and the effects of Climate change. The Hudson Valley is all too familiar with natural disasters, the region has seen 7 Federal Disaster Declarations since 2010 but it was Superstorm Sandy that got everyone's attention. The Hudson Valley Regional Council is addressing this issue through education and outreach to communities to give them the tools they need to make decisions about addressing vulnerabilities at all levels.		
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	Yes	• The purpose of this guide is specifically to address the flooding of streams and creeks that affects bridges, roadways and other public infrastructure. • Municipalities are encouraged to take proactive steps to understand and reduce flooding risks by planning emergency response procedures and addressing the causes of flooding and flood risk. This plan outlines procedures and chains of command during any disaster, including flooding, to allow effective, efficient response. Municipalities can work with county agencies, local fire departments, school districts and other entities to develop a plan. • Each Municipality should prepare an Emergency Action Plan (EAP) The purpose of the EAP is to establish procedures to protect life and property. The EAP should contain at a minimum: Emergency Notification Flowchart: Site Description: Emergency Detection, Evaluation and Classification: and Inundation Maps. Other Flood-Smart Strategies and recommended Actions include; Taking stock of infrastructure; Creating a Multi-Hazard Mitigation Plan; Attend Post-Flood Emergency Stream Intervention Training; Slow the flow off Land; Reconsider Land Use Within Floodplains; and Regulate Runoff that Could Worsen Flooding.	Flood Preparedness and Response: A Guide for Municipalities, 2014	Lower Hudson Coalition of Conservation Districts
Habitat Conservation / Wildlife Management Plan	No	-	-	-
Local Waterfront Revitalization Plan	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Open Space Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	Yes	The 2025 Mid-Hudson Valley Regional Community Health Assessment (CHA) provides a comprehensive overview of the health status, needs, and priorities across the seven Mid-Hudson counties. The Community Health Assessment (CHA) is a descriptive summary of a population, its health status, and the distribution of health issues and the factors that impact health. It identifies the population's main health issues and their determinants and summarizes the assets and resources that can be mobilized to address the issues identified. The findings of the CHA inform the collaborative development of the Community Health Improvement Plan (CHIP). The Putnam County 2025-2030 Community Health Improvement Plan covers Putnam County, New York. The community health improvement plan (or CHIP) is a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. In formulating the Putnam County Community Health Improvement Plan (CHIP) 2025—2030, the Putnam County Department of Health (PCDOH) has identified three priorities to be addressed from the New York State Department of Health's Prevention Agenda 2025—2030. They are Poverty, Anxiety and Stress, and Preventive Services.	Multiple Plans; Chapter 10.04 of Putnam County Charter	PC Department of Health
Sheltering Plan	No	No formal shelters exist in the Town, though Town Hall does function as a warming center. As of the time of this plan's writing, the Town is seeking a partnership with a local organization to serve as a warming center of potential shelter.	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	The Putnam County MS4 Coordinating Committee (PCMS4CC) on behalf of five of the East of Hudson Watershed Towns in Putnam County, sought to prepare a capital improvement program (CIP) to address stormwater management for the participating	Stormwater Improvement Study Final Report December 2009	Putnam County Public Works

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		communities. The intent of the Stormwater Improvement Study (Study) was to identify costs and develop preliminary designs for other water quality improvement features which could potentially be installed (retro-fit) within the Study Area.		
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

6.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 6-22 details the available administrative and technical capabilities of the Town.

Table 6-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	No	Contracted as needed
Construction/Building/Code Enforcement Department	Yes	The Building Department issues permits. Code Enforcement enforces the Town Codes to ensure compliance with Town Zoning and other codes.
Economic Development Commission/Committee	No	-
Emergency Management/Public Safety Department	Yes	PD, FD
Environmental Commission/Specialist	Yes	The Kent Conservation Advisory Committee is a volunteer organization that advises the Town Supervisor and Board on environmental issues.
Grant Writer	Yes	Contracted
Maintenance Programs to Reduce Risk	Yes	Roadside mowing, stormwater management program through highway

Capability Type	In Place in Municipality? Yes or No	Comments
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	Fire Department; Own police force
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	Town IT worker- developed by a company (Managed Technologies updates site); posts/videos
Planning Board	Yes	The Kent Planning Board regulates development in the Town.
Planning Department	Yes	Assists Planning Board
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	Wetlands/Stormwater Consultant
Planner or Engineer with knowledge of land development and land management practices	Yes	Planning
Planners or engineers with an understanding of natural hazards	Yes	Planning
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	Planning
Professionals trained in conducting damage assessments	No	The Town worked with the county on damage assessments previously.
Public Works/Highway Department	Yes	The Town of Kent Highway Department is responsible for the maintenance and repair of 216 lane miles of road and 16 bridges throughout the town.
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	Yes	Director of Finance
Surveyor(s)	No	-
Zoning Board of Appeals	Yes	Issues variances to the zoning code, as deemed appropriate.
Other	Yes	Stormwater Management Committee: The mission of the Town of Kent Stormwater Management Committee (hereafter "the SwMC") is threefold: to educate, to initiate, and to oversee the arena of Stormwater Management throughout the Town of Kent. Beautification Committee: The Kent Beautification Committee is dedicated to enhancing the image of Kent and making our town a more aesthetically pleasing community in which to live. The committee will address problem areas that detract from Kent's natural beauty. Beautifying major intersections, controlling litter, writing grants, and completing signage are a few of the goals set forth to fulfill the mission of this committee.

6.6.3 Fiscal Capability

Table 6-23 summarizes financial resources available to Kent.

Table 6-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement 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	No
Other Federal (non-FEMA) funding programs	No
FEMA funding programs	Yes – 3 projects (2018 tornadoes, 2022 Isais, 2023 flooding)
Other State funding programs	BridgeNY (4 projects)
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Multi-Modal Road Infrastructure grants for severely damaged through roads connecting Townships. The Town is submitting one for Horton Town Road this January. Grants received (Discretionary) through assemblywoman and State senator to do roads

6.6.4 Education and Outreach Capability

Table 6-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 6-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	No
Hazard awareness campaigns, such as school and community programs and events	Yes, Kent Conservation Advisory

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Hazard mitigation information available on your website	Yes, Portal on website that can directly email departments. If there are emergencies or roads closed, emergency information put on website.
Local News	Putnam Press Times
Natural disaster/safety programs in place for schools	Yes, fire/police education in school
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Town Library (programs for food distribution, special needs)
Public information officer or communications office	No
Social media for hazard mitigation education and outreach	Yes, Facebook, Police Department Facebook
Warning systems for hazard events	No

6.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 6-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 6-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Weak
Disease Outbreak	Weak
Drought	Moderate
Earthquake	Weak
Extreme Temperatures	Moderate
Flood	Moderate
Harmful Algal Blooms	Moderate
Severe Storm	Moderate
Severe Winter Storm	Moderate
Terrorism	Weak
Wildfire	Moderate

6.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

6.7.1 Past Mitigation Action Status

The tables below indicate progress on the Town's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

T. Kent-1—Bridge Replacements	
Hazards Addressed	Flood, Severe Storm, Severe Winter Storm, Earthquake,
Lead Agency / Department	Kent Highway Department
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Bridges are of varied age and origin (including at least one cattle pass) and primarily field stone and mortar construction. Currently under review by Town Highway superintendent and county engineer.
Summary of Solution (Project)	Bridges will be reconstructed and replaced to extend useful life. Bridges include: - Whangtown & Schrade Bridge - Dean Road Bridge - Miller Hill Road Bridge - Mooney Hill Road Bridge - Nimham Road Bridge - East Boyds Road Bridge - Sagamore Road Bridge - Lake Louise Bridge - Kent Shore Drive Bridge
Action Category	SIP, PP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Remove completed projects
If discontinue, explain why	Not applicable

T. Kent-2—Kent Vegetation Management Plan	
Hazards Addressed	Severe Storm; Severe Winter Storm
Lead Agency / Department	Town of Kent
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Town of Kent is heavily forested and vulnerable to power outages during storms due to trees taking down power lines. Residents have well water that fails when power goes out. Roadways in the Town are blocked by falling trees
Summary of Solution (Project)	Undertake a proactive vegetation management program to prevent power outages. The program will consist of tree inventories, developing a maintenance plan, and removing trees identified during the inventory.
Action Category	NSP, PP
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	NYSEG has jurisdiction, not feasible for Highway Department to complete

T. Kent-3—Repetitive Loss Outreach	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Town of Kent
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Due to frequent flooding events in the Town of Kent, there are 2 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.
Summary of Solution (Project)	The municipality will conduct an outreach program to all repetitive loss properties. The outreach will inform the property owners of this repetitive loss status and provide mitigation alternatives that the property can do to protect the structure from future flood losses. If the property owner is interested in structural mitigation measures, the municipality will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement the mitigation measure chosen (acquisition, elevation, moving).
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Kent-4—Nichols Street Hardening	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Kent
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Nichols Street causeway across West Branch Reservoir is eroding due to weather events. Nichols Streets provides alternative emergency evacuation/hospital access from Veterans Memorial Park in the case of the Route 301 causeway becoming inaccessible.
Summary of Solution (Project)	Undertake engineering scoping and potential mitigation measures to enhance the roadway's useful life. Support the placement of rocks and boulders to shore up the causeway.
Action Category	SIP, PP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Permit received from NYS DEC to perform some work this year.
If discontinue, explain why	Not applicable

T. Kent-5—Dam Replacements	
Hazards Addressed	Flood, Severe Storm, Earthquake
Lead Agency / Department	Town of Kent – Engineering and Public Works
Supporting Agency / Department	Park Districts
Action Location	-
Summary of Original Problem	The Town of Kent owns dams in the Lake Carmel and Lake Tibet Park District. The Lake Carmel Inundation Area includes a large area north of the Edward Ryan Memorial Park, which is a largely residential area. Downstream impacts would effect areas within the Town of Carmel, including along Route 6 and residential neighborhoods along the Middle Branch Reservoir. The dams require upgrades to comply with existing dam standards. Additionally, privately owned dams in the Town are subject to similar mandates.
Summary of Solution (Project)	The Town plans to undertake engineering and work with private property owners to upgrade dams in order to reduce risk from natural hazards and their impacts on the integrity of the dams. Regular inspections will be conducted after major storm events or flooding events to assess potential damages and needs for improvements.
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	In Progress
If include, revise/reword as appropriate:	Performed an engineering study and have an action plan in place to replace the entirety of the dam. Next steps are to find funding.
If discontinue, explain why	Not applicable

T. Kent-6— Hazard Mitigation Capacity Building	
Hazards Addressed	All hazards
Lead Agency / Department	Town of Kent
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Town is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings.
Summary of Solution (Project)	In conjunction with nearby communities and/or the County, the Town can participate in re-established Local Emergency Planning Committees (LEPCs) and workshops and seminars for both the public and municipal staff.
Action Category	EAP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	In talks about re-establishment.
If discontinue, explain why	Not applicable

T. Kent-7—Critical Facilities Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Kent
Supporting Agency / Department	Property Owners
Action Location	-
Summary of Original Problem	There are three critical facilities located in the Special Flood Hazard Area. The facilities (which include highway bridges and a dam) require mitigation and/or outreach to owners.
Summary of Solution (Project)	For Town-owned facilities, Kent will seek options to floodproof or mitigate flood damages. For properties owned by other owners, the municipality will notify the facility owner/operator that the structure is located within a floodplain and provide various floodproofing measures that the owner/operator can implement to protect the structure.
Action Category	EAP, PP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Revise based on new assessment
If discontinue, explain why	Not applicable

T. Kent-8—Ludington Bridge	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Town of Kent
Supporting Agency / Department	-
Action Location	Ludington Bridge
Summary of Original Problem	The Ludington Court bridge crosses Stump Pond Stream and is in a deteriorated condition. The bridge provides the only ingress and egress for the Kent Highway Department and an adjacent private business.
Summary of Solution (Project)	Reconstruct the bridge to a higher level of protection and replace the bridge and concrete abutments.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Completed

T. Kent-9—Route 301 Highway Garage Improvements	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Town of Kent
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Highway Department is located adjacent to Stump Pond Stream. During flooding events, the stream overtops and washes out the facility's parking lot and salt dome.
Summary of Solution (Project)	The Town proposes the repair and replacement of the flooded facilities to withstand flooding and mitigate flood damage. The project will likely entail wetlands mitigation.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Completed work with DEC assistance.
If discontinue, explain why	Project completed

T. Kent-10—High Hazard Dam Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Kent
Supporting Agency / Department	NYSDEC, NYCDEP
Action Location	-
Summary of Original Problem	The Marcell Roth Lake Dam, Boyds Corner Dam, and Lake Carmel Dam are located within the Town of Kent and are classified as a "high hazard" Class C dams.
Summary of Solution (Project)	The Town of Kent will collaborate with the NYSDEC and NYCDEP on necessary EAP updates, as well as inspections and engineering assessments. If significant increased risk is found at the Dams, the Town and owners will work together to develop a plan to update and improve the conditions of the dam.
Action Category	EAP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Separate into individual actions for each HHPD
If discontinue, explain why	Not applicable

T. Kent-11—Intermediate Hazard Dam Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Kent
Supporting Agency / Department	NYSDEC, Putnam County Dept of Highways and Facilities, Lake Sagamore Community Assoc, Private Owners
Action Location	-
Summary of Original Problem	The Lower Lake Nimham, White Pond Dam, Ryder Lake Dam, Sagamore Lake Dam and Lower, Middle, and Upper South Lake Dams are classified as “intermediate hazard” Class B dams.
Summary of Solution (Project)	The Town will coordinate with the NYSDEC, Putnam County and the private dam owners about any changes to the status of the Dam and aid in the development of updated EAPs as necessary.
Action Category	EAP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

6.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Town of Kent identified the following mitigation efforts completed since the last HMP:

- Town increased its ranking for NYS Climate Smart Communities.

6.7.3 Identified Issues

The Town of Kent has identified the following vulnerabilities within their community for mitigation strategy development:

- The City of New York has a private mobile tower (WPML524) located in the special flood hazard area within the Town's boundary, which may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.
- Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Two sections of piping on Old Forge Road has undersized culverts which contributes to instances of flooding on the roadway.
- There is an earthen dam in front of the Lake Louisa Bridge. An engineering study revealed the need to construct a flood wall in South Lake on Kent Shore Drive to provide additional protection to the earthen dam. The construction of this flood is mandated by NYS DEC.
- The Lake Carmel Dam is a Class I High Hazard Dam that is located on the Middle Branch of the Croton River. The dam is owned by the Town of Kent. The Lake Carmel Inundation Area includes a large area north of the Edward Ryan Memorial Park, which is a largely residential area. Downstream impacts would effect areas within the Town of Carmel, including along Route 6 and residential neighborhoods along the Middle Branch Reservoir. During the dam's last inspection in March 2024, it was found to be unsound with noted deficiencies.
- The Boyds Corner Dam is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP (Dams East of the Hudson River). Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Route 301, East Boyds Road, Dixon Road, among others. Flood waters would also impact the West Branch Reservoir, which is downstream of the dam. During the dam's last inspection in March 2025, it was found to be unsound but in fair condition.
- The Marcell Roth Lake Dam is a Class I High Hazard Dam that is located on a tributary of Peekskill Hollow Creek. The dam is owned by the NYS DEC Division of Lands and Forest. Failure of the dam could result in inundation of commercial properties, woodland areas, and transportation routes including Waywayanda Court, Seifert Lane, among others. During the dam's last inspection in September 2024, it was found to be sound with no noted deficiencies.
- The Lower Lake Nimham, White Pond Dam, Ryder Lake Dam, Sagamore Lake Dam and Lower, Middle, and Upper South Lake Dams are classified as "intermediate hazard" Class B dams. Failures associated with intermediate hazard dams may cause significant damage to property and project operation, but loss of human life is not envisioned. This classification applies to predominantly rural, agricultural areas, where dam failure may damage isolated homes, major highways or railroads or cause interruption of service of relatively important public utilities.
- Flood risk in the Town is primarily along the Sagamore Lake, Peekskill Hollow Road, White Pond, Stump Pond Stream, West Branch Reservoir, Horse Pound Brook and its streams. Floods from these water ways may stem from heavy rains, snowmelt, or ice jams. Impacted areas include:
  - Old Forge Road, Churchill Road, Gordon Road, Horton Town Hill Road, and Long Hill Road have been eroded from heavy rains, snow melt, and flood waters. Long Hill Road was recently paved utilizing FEMA funds; however, flood and erosion has persisted.

- White Pond Colony West and East are located along the southern edge of White Pond and have experienced flooding impacts to roadways (White Pond Colony W, White Pond Colony Road) and property.
- 62 Ludington Court (Highway Facility) is impacted by flooding from Stump Pond Stream.
- 21 Smokey Hollow (Highway Substation) is impacted by flooding from a tributary of the West Branch Reservoir.
- Town Hall (25 Sybils Crossing) basement floods during heavy rains, which impacts the storage of critical files. Flooding stems from tributaries tied to Lake Carmel.
- Route 52 (from Ludingtonville Road to Dykeman Road) is the main business corridor, the road will be impacted by floodwaters which stem from Lake Carmel.
- Old Town Hall (407 Farmers Mills Rd) is susceptible to flooding from a tributary of the White Pond.
- Portions of the property at the Ludington Mill Site and Museum (1374 Route 52) will flood during periods of heavy rain. The property borders Stump Pond Stream.

- Harmful algal blooms occur frequently at Lake Carmel, White Pond, and Canopus Lake. According to the Lake Carmel Harmful Algal Bloom Action Plan, the significant sources of phosphorus loading in the lake are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in Lake Carmel, White Pond, and Canopus Lake can impact recreational opportunities and cause a loss of income.
- The western portions of the Town face an increased risk from wildfires, including most of the areas west of Gypsy Trail Road (Sedgewick, Sagamore, among others). The Town does not have a comprehensive education and outreach program to educate residents and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods.
- Water lines connected to the Town's water districts have been damaged from severe storm damages – stormwater runoff flows into the lines, carrying damaging debris. The Town is considering digging new wells for the water districts.
- Bridges are of varied age and origin (including at least one cattle pass) and primarily field stone and mortar construction. Eroded bridges can cause structural integrity issues. Bridges will be reviewed by the Town Highway superintendent and county engineer.
- Due to frequent flooding events in the Town of Kent, there are 2 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.
- The Nichols Street causeway across West Branch Reservoir is eroding due to heavy rains, winter storms, and flooding from weather events. Nichols Streets provides alternative emergency evacuation and hospital access from Veterans Memorial Park in the case of the Route 301 causeway becoming inaccessible.
- The Town of Kent owns dams in the Lake Carmel and Lake Tibet Park District. The Lake Carmel Inundation Area includes a large area north of the Edward Ryan Memorial Park, which is a largely residential area. Downstream impacts would effect areas within the Town of Carmel, including along Route 6 and residential neighborhoods along the Middle Branch Reservoir. The dams require upgrades to comply with existing dam standards. Additionally, privately owned dams in the Town are subject to similar mandates.
- The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.

6.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Kent participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Kent 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 Town priorities.

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 6-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-KentT-01. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The City of New York has a private mobile tower (WPML524) located in the special flood hazard area within the Town's boundary, which may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.	
Description of the Solution:	The Town will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s).	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of several critical facilities in the Town.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-KentT-02. Undersized Culverts

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Two sections of piping on Old Forge Road has undersized culverts which contributes to instances of flooding on the roadway.	
Description of the Solution:	The Town Engineer will complete an engineering survey of the drainage systems in Town that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town Highway Department will complete the necessary upsizing for the culverts.	
Estimated Cost:	TBD after study is complete	
Potential Funding Sources:	FEMA HMA, CHIPS, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 2027-KentT-03. Kent Shore Drive Flood Wall

Lead Agency:	Highway	
Supporting Agencies:	Engineering	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There is an earthen dam in front of the Lake Louisa Bridge. An engineering study revealed the need to construct a flood wall in South Lake on Kent Shore Drive to provide additional protection to the earthen dam. The construction of this flood is mandated by NYS DEC.	
Description of the Solution:	As mandated by NYS DEC, the Town will search for funding to support the project to construct a flood wall in South Lake on Kent Shore Drive to protect an earthen dam in front of Lake Louisa Bridge.	
Estimated Cost:	High	
Potential Funding Sources:	BridgeNY, NYS DEC, Town Budget	
Implementation Timeline:	4 years	
Goals Met:	1, 6	
Benefits:	Lake Louisa Bridge will be hardened by the installation of a flood wall, which will serve to protect the earthen dam located in front of the bridge.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along South Lake on Kent Shore Drive.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	By providing protection to the earthen dam, the Lake Louisa Bridge will also be further protected, improving the transportation lifeline.	
Impact on Capabilities:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Remove earthen dam	May interrupt ecology and surrounding environment
	Replace earthen dam	Cost prohibitive

Action 2027-KentT-04. Lake Carmel Dam Rehab

Lead Agency:	Municipal Engineer	
Supporting Agencies:	County BES, NYS DEC	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Lake Carmel Dam is a Class I High Hazard Dam that is located on the Middle Branch of the Croton River. The dam is owned by the Town of Kent. The Lake Carmel Inundation Area includes a large area north of the Edward Ryan Memorial Park, which is a largely residential area. Downstream impacts would effect areas within the Town of Carmel, including along Route 6 and residential neighborhoods along the Middle Branch Reservoir. During the dam's last inspection in March 2024, it was found to be unsound with noted deficiencies.	
Description of the Solution:	The Town completed an engineering study of the Lake Carmel Dam to identify any potential needs for retrofits or improvements and developed an action plan to replace the dam. The Town will search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-KentT-05. Boyds Corner Dam Rehab

Lead Agency:	Dam Owners (NYC DEP (Dams East of the Hudson River))		
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer		
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The Boyds Corner Dam is a Class I High Hazard Dam that is located on the West Branch of the Croton River. The dam is owned by the NYC DEP (Dams East of the Hudson River). Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Route 301, East Boyds Road, Dixon Road, among others. Flood waters would also impact the West Branch Reservoir, which is downstream of the dam. During the dam's last inspection in March 2025, it was found to be unsound but in fair condition.		
Description of the Solution:	The Municipal Engineer will encourage NYC DEP (Dams East of the Hudson River) to complete, or share, an engineering study of the Boyds Corner Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the NYC DEP (Dams East of the Hudson River) in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 4, 6		
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.		
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 at risk populations exists.		
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.		
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 and strengthen the structural integrity of dam, as needed.		
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)	
Priority	☒High	☐Medium	☐Low
Alternative	Action	Evaluation	
	No action	Current problem persists	

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-KentT-06. Marcell Roth Lake Dam Rehab

Lead Agency:	Dam Owners (NYS DEC Division of Lands and Forest)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Marcell Roth Lake Dam is a Class I High Hazard Dam that is located on a tributary of Peekskill Hollow Creek. The dam is owned by the NYS DEC Division of Lands and Forest. Failure of the dam could result in inundation of commercial properties, woodland areas, and transportation routes including Waywayanda Court, Seifert Lane, among others. During the dam's last inspection in September 2024, it was found to be sound with no noted deficiencies.	
Description of the Solution:	The Municipal Engineer will encourage NYS DEC Division of Lands and Forest to complete, or share, an engineering study of the Marcell Roth Lake Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the NYS DEC Division of Lands and Forest in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-KentT-07. Intermediate Hazard Dam Outreach

Lead Agency:	Highway Department		
Supporting Agencies:	Town Administration, County BES, NYS DEC, Dam Owners		
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The Lower Lake Nimham, White Pond Dam, Ryder Lake Dam, Sagamore Lake Dam and Lower, Middle, and Upper South Lake Dams are classified as “intermediate hazard” Class B dams. Failures associated with intermediate hazard dams may cause significant damage to property and project operation, but loss of human life is not envisioned. This classification applies to predominantly rural agricultural areas, where dam failure may damage isolated homes, major highways or railroads or cause interruption of service of relatively important public utilities.		
Description of the Solution:	The Town will coordinate with the NYS DEC, Putnam County and the private dam owners about any changes to the status of the Dam and aid in the development of updated EAPs as necessary. The Town will work with dam owners to ensure inspections and safety procedures are up to date. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Dam Owner will pursue funding support, permit approval from NYS DEC, and implement the cost-effective measures.		
Estimated Cost:	Low		
Potential Funding Sources:	Town Budget		
Implementation Timeline:	5 years		
Goals Met:	1, 2, 4, 6		
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.		
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.		
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.		
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 and strengthen the structural integrity of dam, as needed.		
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
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.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Utilize information from NYS DEC	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 2027-KentT-08. Flood Mitigation Along Water Ways

Lead Agency:	Engineering	
Supporting Agencies:	Highway Department, County DPW, NYS DOT	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Flood risk in the Town is primarily along the Sagamore Lake, Peekskill Hollow Road, White Pond, Stump Pond Stream, West Branch Reservoir, Horse Pound Brook and its streams. Floods from these water ways may stem from heavy rains, snowmelt, or ice jams. Impacted areas include: • Old Forge Road, Churchill Road, Gordon Road, Horton Town Hill Road, and Long Hill Road have been eroded from heavy rains, snow melt, and flood waters. Long Hill Road was recently paved utilizing FEMA funds; however, flood and erosion has persisted. • White Pond Colony West and East are located along the southern edge of White Pond and have experienced flooding impacts to roadways (White Pond Colony W, White Pond Colony Road) and property. • 62 Ludington Court (Highway Facility) is impacted by flooding from Stump Pond Stream. • 21 Smokey Hollow (Highway Substation) is impacted by flooding from a tributary of the West Branch Reservoir. • Town Hall (25 Sybils Crossing) basement floods during heavy rains, which impacts the storage of critical files. Flooding stems from tributaries tied to Lake Carmel. • Route 52 (from Ludingtonville Road to Dykeman Road) is the main business corridor, the road will be impacted by floodwaters which stem from Lake Carmel. • Old Town Hall (407 Farmers Mills Rd) is susceptible to flooding from a tributary of the White Pond. • Portions of the property at the Ludington Mill Site and Museum (1374 Route 52) will flood during periods of heavy rain. The property borders Stump Pond Stream.	
Description of the Solution:	The Town Engineer will assess the feasibility and cost-effectiveness of various stabilization measures, such as including gabions, riprap, drainpipes and/or related improvements to prevent future flooding surrounding the Sagamore Lake, Peekskill Hollow Road, White Pond, Stump Pond Stream, West Branch Reservoir, Horse Pound Brook and their tributaries. The Town may also choose to look into acquiring property for open space to reduce flood risk.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Town Budget, NYS DEC	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.	
Impact on Critical Facilities/Lifelines:	The stabilization measures will permit roads to remain open as a transportation route.	
Impact on Capabilities:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)		☒Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	Action		Evaluation
	No action		Current problem persists
	Elevate nearby roads		Cost prohibitive
	Acquire all properties which flood		Cost prohibitive

Action 2027-KentT-09. Reduce HAB Occurrences

Lead Agency:	Town Board		
Supporting Agencies:	Lake Carmel Park District, Putnam County Health, NYS DEC, NYS DOH		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☒Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	Harmful algal blooms occur frequently at Lake Carmel, White Pond, and Canopus Lake. According to the Lake Carmel Harmful Algal Bloom Action Plan, the significant sources of phosphorus loading in the lake are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in Lake Carmel, White Pond, and Canopus Lake can impact recreational opportunities and cause a loss of income.		
Description of the Solution:	The Town will work with Putnam County Health, NYS DEC, and NYS DOH to review the Lake Carmel Harmful Algal Bloom Action Plan and work to accomplish the following actions to reduce risk: • Construct a wastewater treatment plant and install infrastructure required to connect up to 2,500 homes; • Stabilize and reinforce the banks of the Middle Branch of the Croton River and Stump Pond Stream; • Create riparian buffers along streams to inhibit or restrict nutrient-enriched stormwater runoff and eroded soil from reaching the stream; and • Implement multiple stormwater Best Management Practices (BMPs) to reduce sediment loading into Lake Carmel. This would include the purchase of a street sweeping vacuum truck to prevent sediment and organic debris from entering storm drains, ditches, tributaries and Lake Carmel. In addition, the Town will work with Putnam County Health, NYS DEC, and NYS DOH to develop Harmful Algal Bloom Action Plans for White Pond and Canopus Lake.		
Estimated Cost:	High		
Potential Funding Sources:	PCMHAB (NOAA), NWQP (USGS), WEP (USDA), NYS DEC, Town Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 3		
Benefits:	Lake Carmel is designated as a Class B waterbody under the New York Codes, Rules, and Regulations (NYCRR) meaning it is best intended for contact recreation (i.e., swimming and bathing), non-contact recreation (i.e., boating and fishing), aesthetics, and support of aquatic life. Addressing the HAB occurrences in Lake Carmel, White Pond, and Canopus Lake can contribute to a safer recreational environment.		
Impact on Socially Vulnerable Populations:	Addressing the HAB occurrences in the lakes can contribute to a safer recreational environment.		
Impact on Future Development:	Not applicable		
Impact on Critical Facilities/Lifelines:	While Lake Carmel, White Pond, and Canopus Lake are not a critical facility or a lifeline, the Lake is a source of income for the Town during the spring and summer seasons though beach goers, fishing licensing, and boating.		
Impact on Capabilities:	Not applicable		
Climate Change Considerations:	Increased occurrences in extreme heat can contribute to the growth of excess nutrients in lake environments. Anticipated increases in heavy rains can force additional runoff from surrounding properties toward and into Lake Carmel, White Pond, and Canopus Lake.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	No longer permit recreational use of the lakes	Loss of income for the Town
	Institute ban on agricultural practices above the lake's grades	Loss of income for agriculture sector

Action 2027-KentT-10. Wildfire Education and Outreach

Lead Agency:	Town Administration	
Supporting Agencies:	NYS DEC (Forest Rangers Division), County BES	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	The western portions of the Town face an increased risk from wildfires, including most of the areas west of Gypsy Trail Road (Sedgewick, Sagamore, among others). The Town does not have a comprehensive education and outreach program to educate residents and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods.	
Description of the Solution:	Create outreach materials, or utilize those from Putnam County NYS DEC, or other resources, on wildfire risks and methods of mitigation measures. Methods of distribution may include Town events, the Town newsletters, social media, the Town website, and having the materials on display for the public at Town libraries and offices. Outreach materials will be specified with education and information for the wildfire hazard.	
Estimated Cost:	Low	
Potential Funding Sources:	NYS DEC, Town Budget, County Budget	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the public education and outreach capabilities in the Town by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Town.	
Impact on Socially Vulnerable Populations:	At risk populations will learn how to prepare for and mitigate the wildfire hazard which may impact them in the Town.	
Impact on Future Development:	Not applicable	
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 the wildfire hazard. 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 public education and outreach capabilities and adapt it to the Town's needs.	
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 the wildfire hazard and how climate change may exacerbate those risks.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 at risk populations from receiving the guidance

Action 2027-KentT-11. Water System Upgrades

Lead Agency:	Water Districts	
Supporting Agencies:	Engineer, Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Water lines connected to the Town's water districts have been damaged from severe storm damages – stormwater runoff flows into the lines, carrying damaging debris. The Town is considering digging new wells for the water districts.	
Description of the Solution:	The Town and water districts will evaluate and write a report noting the location of the damaged lines and measures which could be implemented to ensure the infrastructure is more resilient to potential impacts from storm debris.	
Estimated Cost:	High	
Potential Funding Sources:	Town Budget, Drinking Water State Revolving Fund (DWSRF), Public Water System Supervision (PWSS) Grant Program, Water Pollution Control Grants Program, FEMA HMA, Utility Fees, NYS DEC	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2	
Benefits:	Municipal water systems are essential for public health, economic development, and environmental sustainability, providing safe and reliable water to communities. Access to municipal water systems enhances the quality of life for residents by providing a reliable source of water for drinking, cooking, and sanitation, which are essential for daily living. Moreover, these systems support recreational activities and contribute to the aesthetic value of communities through well-maintained water bodies and parks.	
Impact on Socially Vulnerable Populations:	Implementing any necessary upgrades to the water system will assist in the prevention of waterborne diseases and ensures that the water supplied is free from harmful substances such as lead and bacteria.	
Impact on Future Development:	This action will ensure water systems in the Town are working efficiently and can provide a necessary service to current and future development.	
Impact on Critical Facilities/Lifelines:	This action ensures the water systems in the Town, which are critical pieces of infrastructure and part of the water lifeline, are working efficiently and can provide a necessary service.	
Impact on Capabilities:	This action will keep an existing capability running efficiently.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Rectify concerns but do not implement preventative measures	Issues likely to reoccur
	Close pump stations and outsource drinking water	Costly, inefficient, could be a detriment to residents

Action 2027-KentT-12. Bridge Replacements

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☒Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Bridges are of varied age and origin (including at least one cattle pass) and primarily field stone and mortar construction. Eroded bridges can cause structural integrity issues. Bridges will be reviewed by the Town Highway superintendent and county engineer.	
Description of the Solution:	Bridges will be reconstructed and replaced to extend useful life. Bridges include: • Nimham Road Bridge • East Boyds Road Bridge • Sagamore Road Bridge • Lake Louise Bridge • Kent Shore Drive Bridge	
Estimated Cost:	High	
Potential Funding Sources:	CHIPS, BridgeNY, Town Budget	
Implementation Timeline:	5+ years	
Goals Met:	1	
Benefits:	Extends useful life of bridges and maintains connectivity in the Town	
Impact on Socially Vulnerable Populations:	Extends useful life of bridges and maintains connectivity in the Town	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	This action will ensure transportation routes remain open and accessible to the public for daily use and evacuation needs; the bridges provide a point of access for first responders into communities that may have faced damage from a hazard event on either side of the bridges.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will work to ensure the structure of the bridges are impervious to erosion at their base due to rising water levels.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Remove bridges	May cause significant traffic problems
	Move location of bridges	Cost prohibitive; may result in traffic problems

Action 2027-KentT-13. Repetitive Loss Properties

Lead Agency:	Code Enforcement	
Supporting Agencies:	Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Due to frequent flooding events in the Town of Kent, there are 2 repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.	
Description of the Solution:	The municipality will conduct an outreach program to all repetitive loss properties. The outreach will inform the property owners of this repetitive loss status and provide mitigation alternatives that the property can do to protect the structure from future flood losses. If the property owner is interested in structural mitigation measures, the municipality will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement the mitigation measure chosen (acquisition, elevation, moving).	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Town's current NFIP capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-KentT-14. Nichols Street Hardening

Lead Agency:	Engineer		
Supporting Agencies:	Highway Department		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The Nichols Street causeway across West Branch Reservoir is eroding due to heavy rains, winter storms, and flooding from weather events. Nichols Streets provides alternative emergency evacuation and hospital access from Veterans Memorial Park in the case of the Route 301 causeway becoming inaccessible.		
Description of the Solution:	Undertake engineering scoping and potential mitigation measures to enhance the roadway's useful life. Support the placement of rocks and boulders to shore up the causeway. Permit received from NYS DEC to perform some work this year.		
Estimated Cost:	High		
Potential Funding Sources:	CHIPS, Town Budget		
Implementation Timeline:	5 years		
Goals Met:	1		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties. Continued function of Nichols Street as an evacuation point.		
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.		
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.		
Impact on Critical Facilities/Lifelines:	Stabilization measures will permit roads to remain open as a transportation route.		
Impact on Capabilities:	Not applicable		
Climate Change Considerations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Elevate nearby roads	Cost prohibitive	
	Acquire all properties which flood	Cost prohibitive	

Action 2027-KentT-15. Dam Replacements

Lead Agency:	Engineer	
Supporting Agencies:	Highway, Park Districts, Dam Owners, NYS DEC	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☒Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Town of Kent owns dams in the Lake Carmel and Lake Tibet Park District. The Lake Carmel Inundation Area includes a large area north of the Edward Ryan Memorial Park, which is a largely residential area. Downstream impacts would effect areas within the Town of Carmel, including along Route 6 and residential neighborhoods along the Middle Branch Reservoir. The dams require upgrades to comply with existing dam standards. Additionally, privately owned dams in the Town are subject to similar mandates.	
Description of the Solution:	The Town plans to undertake engineering and work with private property owners to upgrade dams in order to reduce risk from natural hazards and their impacts on the integrity of the dams. Regular inspections will be conducted after major storm events or flooding events to assess potential damages and needs for improvements. The Town completed an engineering study of the Lake Carmel Dam to identify any potential needs for retrofits or improvements and developed an action plan to replace the dam. The Town will search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	To be determined following identification of needed upgrades per dam	
Potential Funding Sources:	NYS DEC, HHPD, Town Budget, Dam Owners	
Implementation Timeline:	5+ years	
Goals Met:	1, 2, 4, 6	
Benefits:	The proposed project will safeguard public and private property in the areas protected by the dam.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Decommission Dams	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-KentT-16. Risk Reduction Initiative

Lead Agency:	Putnam County	
Supporting Agencies:	Town Staff	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.	

Description of the Solution:	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically:
	• Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation.
	• Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include:
	  • NFIP Community Rating System (CRS)
	  • Benefit-Cost Analysis (BCA)
	  • Substantial Damage Estimating (SDE)
	  • NFIP Elevation Certificates (EC)
	  • Certified Floodplain Manager (CFM) Training and Certification
	• County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures	

Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the Town's overall preparedness for emergency events, increase knowledge of the various hazards which can impact the Town, and inform staff of how to maintain eligibility for the NFIP. Providing an opportunity for staff and officials to become further educated on floodplain management practices and standards can aid in the development of plans and procedures in a way that is conscious of the flood hazard.	
Impact on Socially Vulnerable Populations:	Town staff will become familiar with how to assist displaced persons following an emergency event. Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where at risk populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
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 the wildfire hazard. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways to prepare for, plan for, and prevent interruptions in service as a result of a flood.	
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. Officials that attend trainings will have a more confident understanding of floodplain management principles and the basics of NFIP requirements and standards.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Take FEMA IS courses		Will increase knowledge, but the information is generalized and not county- or town-specific
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Table 6-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-KentT-01	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-KentT-02	Undersized Culverts	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-KentT-03	Kent Shore Drive Flood Wall	1	1	1	1	1	0	0	1	1	1	1	1	0	1	**11**	High
2027-KentT-04	Lake Carmel Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-KentT-05	Boyds Corner Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-KentT-06	Marcell Roth Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-KentT-07	Intermediate Hazard Dam Outreach	1	1	1	1	0	0	0	1	1	0	1	1	1	0	**9**	Medium
2027-KentT-08	Flood Mitigation Along Water Ways	1	1	1	1	0	0	1	1	1	1	1	1	0	1	**11**	High
2027-KentT-09	Reduce HAB Occurrences	1	0	1	1	1	0	1	1	1	0	1	1	0	1	**10**	Medium
2027-KentT-10	Wildfire Education and Outreach	1	1	1	1	1	1	0	1	1	0	1	1	0	1	**11**	High
2027-KentT-11	Water System Upgrades	0	1	1	1	0	0	1	1	1	1	1	1	1	0	**10**	Medium
2027-KentT-12	Bridge Replacements	1	1	1	1	0	0	1	1	1	1	1	0	1	1	**11**	High
2027-KentT-13	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	0	1	1	0	1	**11**	High
2027-KentT-14	Nichols Street Hardening	1	1	1	1	0	0	0	1	1	1	1	1	1	0	**10**	Medium

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-KentT-15	Dam Replacements	1	1	1	0	0	0	0	1	1	1	1	0	1	0	**8**	Medium
2027-KentT-16	Risk Reduction Initiative	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

7. VILLAGE OF NELSONVILLE

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

7.1 HAZARD MITIGATION PLANNING TEAM

The Village of Nelsonville identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Village departments.

Table 7-1 summarizes the Village officials who participated in the development of the annex. Additional documentation of the Village's planning activities through Planning Partnership meetings is included in Volume I.

Table 7-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Chris Alice Winward, Mayor Address: 258 Main St, Cold Spring, NY 10516 Phone Number: 845-265-2500 Email: mayor@nelsonvilleny.gov	Name/Title: Melissa Harris, Village Clerk Address: 258 Main St, Cold Spring, NY 10516 Phone Number: 845-265-2500 Email: villageclerk@nelsonvilleny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Greg Wunner, Town of Philipstown Code Enforcement Address: 2 Cedar Street, Cold Spring, NY 10516 Phone Number: 845-265-5202 Email: gwunner@philipstown.com	
Additional Contributors	
Name/Title: Town of Philipstown Method of Participation: Provided key input in planning process, as the Town performs road clearing and permitting for the Village.	

7.2 COMMUNITY PROFILE

7.2.1 Community Classifications

Table 7-2 summarizes classifications for community programs available to Nelsonville.

Table 7-2. Community Classifications

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

Program	Participating? (Yes/No)	Classification	Date Classified
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	No	-	-
NYSERDA Clean Energy Community	Yes	1-Star	May 10, 2024
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

7.2.2 Community Profile

The Village of Nelsonville is located within the Hudson Highlands of New York State. It is found within the Town of Philipstown and is directly east of the Village of Cold Spring. Table 7-3 through Table 7-6 note land area, population, and building stock information for the Village of Nelsonville.

Table 7-3. Total Land Area in the Village of Nelsonville

Jurisdiction	Total Land Area	
	Acres	Square Miles
Nelsonville (V)	669.3	1.0

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 7-4. Population Estimates in the Village of Nelsonville

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
624	0.6%	714	0.7%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 7-5. Vulnerable Populations in the Village of Nelsonville

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
101	14.1%	27	3.8%	0	0.0%	62	8.7%	21	2.9%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 7-6. General Building Stock in the Village of Nelsonville

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
283	$143,090,491	217	$87,518,888	59	$41,578,796	2	$4,999,912	5	$8,992,894

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

7.3 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 Nelsonville's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

7.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Nelsonville are shown in Figure 7-1 and Figure 7-2. 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 Nelsonville has significant exposure.

Figure 7-1. Nelsonville Hazard Area Map #1

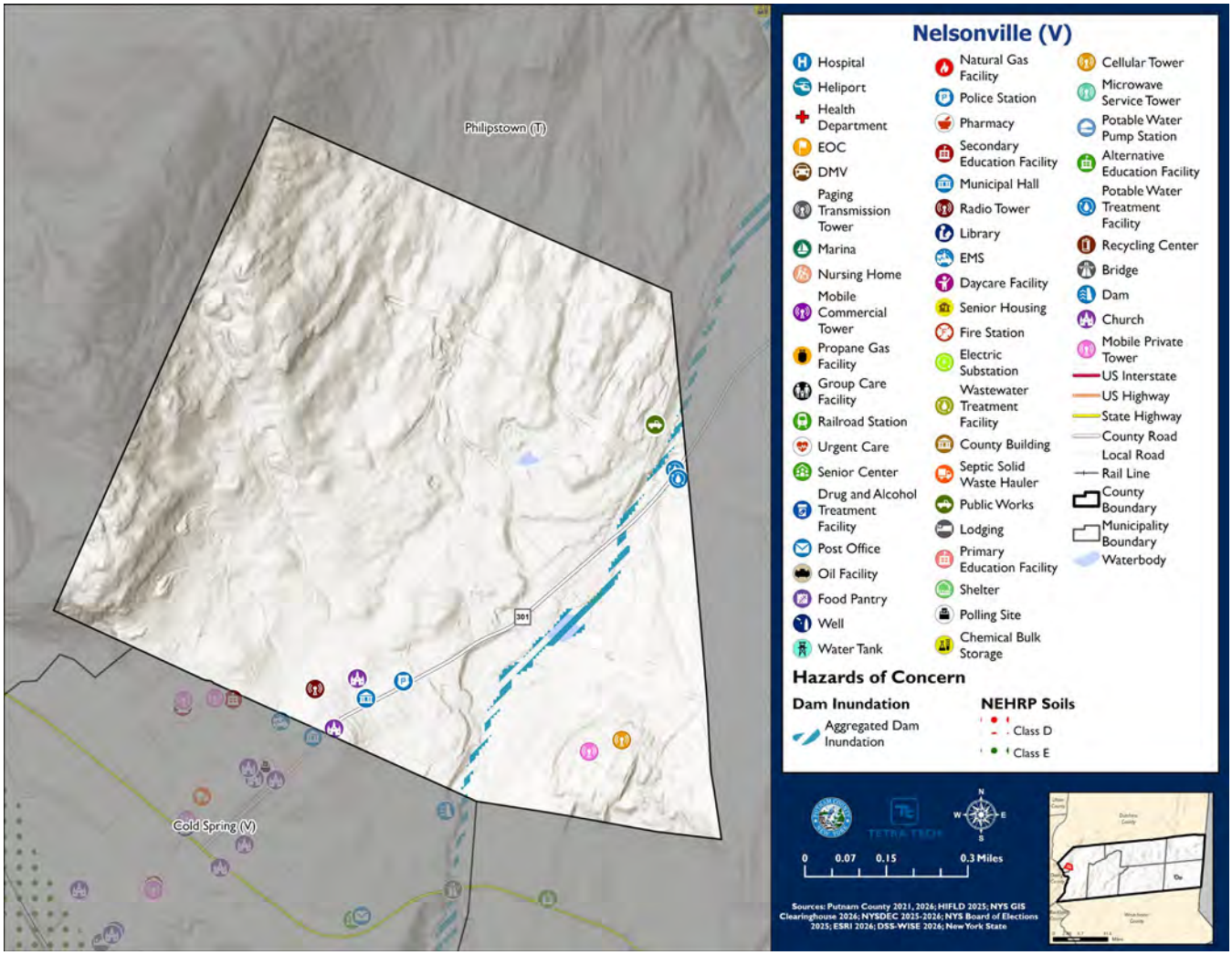
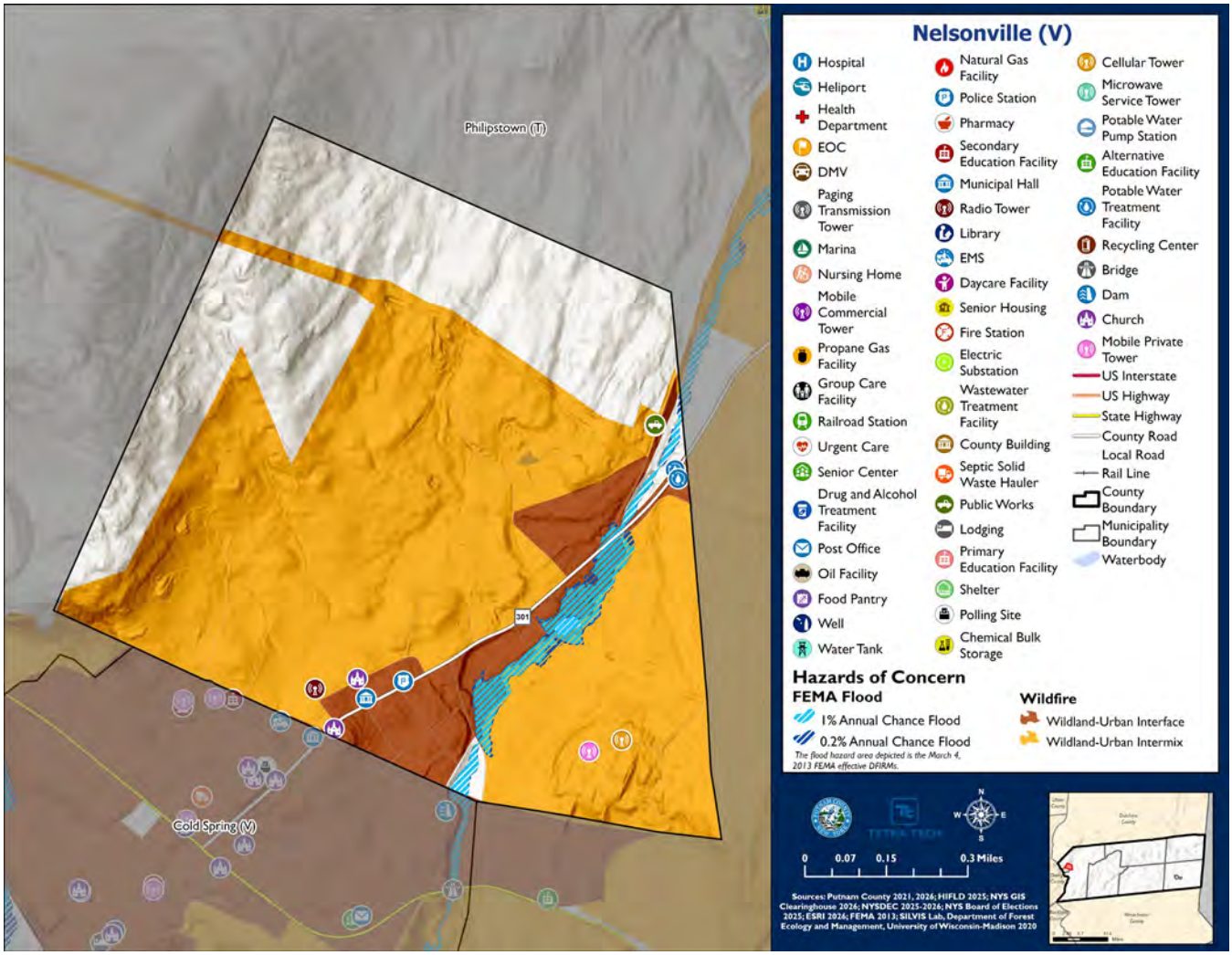


Figure 7-2. Nelsonville Hazard Area Map #2



7.3.2 Previous Event History

The history of natural and non-natural hazard events in Nelsonville is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 7-7 and Table 7-8 provide details on the loss and damage in Nelsonville during hazard events since the last hazard mitigation plan update.

Table 7-7. Presidential Disaster Declarations History in Nelsonville

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Nelsonville
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	The Village took precautionary measures including Social Distancing, work from home orders and virtual meetings.

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Nelsonville
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	The Village did not incur any documented damages or losses.
August 21-24, 2021	EM-3565-NY	Hurricane Henri	The Village did not incur any documented damages or losses.
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	The Village did not incur any documented damages or losses.
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	The Village incurred damages that were so intense that individuals had to relocate. One homeowner reported two and a half feet of water in the home, and it damaged the first floor. Another homeowner had to relocate their home, and the first floor and basement were damaged. Residents incurred a lot of damage and were not eligible for FEMA assistance. The Village reported $846,000 of damages related to the event and road/trail restoration and drainage.

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 7-8. Hazard Event History in Nelsonville

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Nelsonville
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	The Village did not incur any documented damages or losses.
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	The Village did not incur any documented damages or losses.
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	The Village did not incur any documented damages or losses.

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Nelsonville
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	The Village did not incur any documented damages or losses.
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	The Village did not incur any documented damages or losses.
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	The Village did not incur any documented damages or losses.
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	The Village did not incur any documented damages or losses.

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

7.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 7-9 includes an inventory of critical facilities and infrastructure for the Village of Nelsonville.

Table 7-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
No critical facilities were identified to be within the flood hazard areas.					

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

7.3.4 Local Hazard Impacts Assessment

Representatives from the Village of Nelsonville Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 7-10.

Table 7-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	The Village of Cold Spring owns the dams and public water supply to about 117 homes and commercial buildings in Nelsonville. Dams are in Cold Spring and Philipstown and if these dams were to break, it would greatly impact the Village. Additionally, the loss of drinking water would be a concern, and the dam would flood out a water treatment plant owned by Cold Spring and most of the Village of Nelsonville.
Disease Outbreak	The Village does not have any group homes/medical facilities of any kind. There is a dense area of the Village that has no sewer system (on and around Main Street). Many Village residences have cesspools or old septic systems and the Village is situated in a valley which collects stormwater. Luckily, there have been no contamination issues as of yet, because of a separate public water supply in this area but there is a concern for disease outbreak. It would be about $10 million dollars for these 117 properties to be connected to sewer.
Drought	There are frequent water restrictions and in the last five years there have been restrictions 3 of 5 years because of drought conditions. There is limited water for the current water system which is an old dam system with impoundments. Cold Spring made an emergency connection to the NYC aqueduct in case of emergencies (but this is a very high cost, and the cost is passed on to the residents of the Village as well as Cold Spring.
Earthquake	No infrastructure damages yet. There are 12 buildings on the national historic registry that would be vulnerable.
Extreme Temperatures	The Village would work with the County and Philipstown Recreational Center to be a Heating/Cooling center as needed.
Flood	There are 15 homes and 11 businesses along the Foundry Brook flood plain, which is a tributary of Hudson River. There are an additional 6 homes and 7 businesses that are impacted by the unnamed tributaries which feed into the Foundry Brook flood plain. Residents along the unnamed tributaries of the Foundry Brook are not covered by the current FEMA flood hazard area and are not eligible for discounted flood insurance. One homeowner reported two and a half feet of water in the home, and it damaged the first floor. Another homeowner had to relocate their home, and the first floor and basement were damaged. Residents incurred a lot of damage and were not eligible for FEMA assistance. The Village was granted a Hudson River Estuary protection grant with other municipalities to evaluate tributaries and their downhill impacts. This grant aims to create a flood mitigation plan and get additional funding for design and construction to implement the plan. The tributaries are located on very steep slopes which creates excessive water runoff speed and water flow during severe storm and flood events.
Harmful Algal Blooms	No known impacts
Severe Storm	There are 15 homes and 11 businesses along the Foundry Brook flood plain, which is a tributary of Hudson River. There are an additional 6 homes and 7 businesses that are impacted by the unnamed tributaries which feed into the Foundry Brook flood plain. Residents along the unnamed tributaries of the Foundry Brook are not covered by the current FEMA flood hazard area and are not eligible for discounted flood insurance. One homeowner reported two and a half feet of water in the home, and it damaged the first floor. Another homeowner had to relocate their home, and the first floor and basement were damaged. Residents incurred a lot of damage and were not eligible for FEMA assistance.

Hazard Name	Local Impacts: People, Community Services, Local Economy
	The Village was granted a Hudson River Estuary protection grant with other municipalities to evaluate tributaries and their downhill impacts. This grant aims to create a flood mitigation plan and get additional funding for design and construction to implement the plan. The tributaries are located on very steep slopes which creates excessive water runoff speed and water flow during severe storm and flood events.
Severe Winter Storm	The 2025-2026 Winter Season was the most snow that the Village has gotten in a while. The Village had to have both County and local highway departments clear the sides of roadways of accumulated snow. The Village incurred increased cost for snow removal on side streets. The County assists the state with clearing Rt. 301 which runs through the heart of Nelsonville.
Terrorism	No known impacts
Wildfire	The Village has 120 acres of woods with trails with no recent wildfire occurrences.

7.3.5 Vulnerable Community Assets

Representatives from the Village of Nelsonville Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 7-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 7-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Not applicable	**Area: Concentration of Local Businesses, Major Employers**	Many Downtown/Main Street area business properties are on small lots in dense areas and some have multiple units in one building and they would be vulnerable to fire events. All businesses on the Foundry Brook and its tributaries are vulnerable to flooding.
Area: Concentration of Residences	The Downtown/Main Street area properties are very dense, on small lots and some are duplexes They would be vulnerable to fire events. All residences on the Foundry Brook and its tributaries are vulnerable to flooding.	**Local Roads, Highways, Culverts, Bridges**	Following the FEMA designated Severe Storm/Flooding event of July 2023, the Village improved drainage on Healy Road, Pine Street, Bank Street, and Pearl Street. Improvements included additional drains, larger drains with additional sump capacity, curbs and rip rap ditches to divert water runoff. Over $800,000 in damages was repaired utilizing FEMA funding.
Municipal Buildings	The Village has made significant improvements to Village Hall which was constructed in 1905. However, there is no sprinkler system in this facility.	**Medical Centers (non-hospital)**	Not applicable

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
College/University	Not applicable	**Place of Worship**	The Church on the Hill is on the National Historic Registry and is made of all timber, making it vulnerable to fire.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	The Village has a pocket park across from Village Hall with no known impacts.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	No applicable
Cultural/Historic Buildings/Sites	The Village has 12 buildings on the national historic registry including Village Hall.	**Schools (K-12)**	Not applicable
Elder-care Facilities	Not applicable	**Utilities**	There is one private cell company tower and one County-owned emergency services tower located in Nelsonville.
Fire/Police Stations	The Village is covered by County Sheriff, and the Village owns Sheriff substation located in the Village.	**Wastewater Treatment Plants**	This is owned and maintained by Village of Cold Spring, no known impacts.
Gas Stations, Grocery Stores, Supermarkets	No known impacts	**Water: Drinking Water Resources**	This is owned and maintained by Village of Cold Spring, no known impacts.
Hospitals	Not applicable	**Other**	No known impacts

7.3.6 Dams

Table 7-12 includes all dams in the Village of Nelsonville. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 7-12. Dams Located in Nelsonville

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
None Identified						

Instructions: Please provide any information about dam risk in your community in the grey box below. This may include risks from dams outside of your community.

The Village of Cold Spring owns the dams and water supply to all of Nelsonville. Dams are in Cold Spring and Philipstown and if these dams were to break, it would greatly impact the Village. Additionally, the loss of drinking water would be a concern, and the dam would flood out a water treatment plant and most of the Village.

7.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 7-13 identifies the preliminary hazard ranking for Nelsonville, whether the Village agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 7-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	Medium	The Cold Spring dam system is classified as high hazard and is being worked on.	Medium
Disease Outbreak	Medium	Disagree	Low	Communicable diseases are possible as we have experienced with COVID and FLU outbreaks.	Low
Drought	High	Disagree	-	There is a connection to the New York City aqueduct.	Medium
Earthquake	Low	Agree	-	-	Low
Extreme Temperatures	Medium	Agree	-	-	Medium

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Flood	Medium	Disagree	High	The Village sustained over $800,000 in village-owned infrastructure damage during the July 9, 2023 flood. Many residents also sustained significant damage. With climate change and more erratic storms producing heavier rainfalls more frequently, there is a high possibility of flooding.	High
Harmful Algal Blooms	Low	Agree	-	-	Low
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Agree	-	-	Low
Wildfire	High	Disagree	-	There has been no significant wildfire in the Village.	Medium

7.4 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 7-14 through Table 7-17.

7.4.1 Development and Permitting

Table 7-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes, we contract with Philipstown Building Department for code enforcement and building inspections
What is your process for tracking building permits?	Both Philipstown Building Department and the Village track permitting
Are permits tracked by hazard area? (For example, floodplain development permits.)	No
Does your community have a buildable land inventory? If yes, please describe.	No, fully built out

Table 7-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
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	1	0	0	1
Permits within SFHA	0	0	0	0
2024				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2025				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

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

Table 7-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
None Identified					

Table 7-17. 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 Zones*	Description / Status of Development
None Identified					

7.5 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 7-1 is responsible for maintaining this information.

7.5.1 NFIP Statistics

Table 7-18 summarizes the NFIP policy and claim statistics for the Village of Nelsonville.

Table 7-18. Nelsonville NFIP Summary of Policy and Claim Statistics

NFIP Community Number	361019#
FEMA 2020 NFIP Data	
# Policies	3
# Claims (Losses)	3
Total Losses Claimed	$32,205
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	13
Repetitive Loss Events	4
Net Building Payment	$390,270
Net Contents Payment	$35,316
Total Net Payment	$425,585

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 2020, 2026

Note: "-" = information unavailable

7.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 7-19.

Table 7-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	There are 15 homes and 11 businesses along the Foundry Brook flood plain, which is a tributary of Hudson River. There are an additional 6 homes and 7 businesses that are impacted by the unnamed tributaries which feed into the Foundry Brook flood plain. Residents along the unnamed tributaries of the Foundry Brook are not covered by the current FEMA flood hazard area and are not eligible for discounted flood insurance. One homeowner reported two and a half feet of water in the home, and it damaged the first floor. Another homeowner had to relocate their home, and the first floor

NFIP Topic	Comments
	and basement were damaged. Residents incurred a lot of damage and were not eligible for FEMA assistance. The Village was granted a Hudson River Estuary protection grant with other municipalities to evaluate tributaries and their downhill impacts. This grant aims to create a hazard mitigation plan and get additional funding for design and construction to implement the plan. The tributaries are located on very steep slopes which creates excessive water runoff speed and water flow during severe storm and flood events.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	Greg Wunner, Philipstown Building Inspector/ Code Enforcement Officer
What local department is responsible for floodplain management?	The Building Inspector is appointed Local Administrator to administer and implement the local law by granting or denying floodplain development permits in accordance with its provisions
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2012
What is the date that your flood damage prevention ordinance was last amended?	January 8, 2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 4, 2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Philipstown conducts permit review and routine inspections as needed.
What are the barriers to running an effective NFIP program in your community, if any?	Limited funding, staffing and time.
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	More localized training
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	One homeowner experienced substantial damage in the July 2023 event.
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	The Village does not formally track, but Village there are 15 residences and 11 businesses that are vulnerable in the special flood hazard area.

NFIP Topic	Comments
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	The Village FIRM's are not reflective of flood risk. There are seven businesses and six homes that are vulnerable outside of the Foundry Brook Flood Plain.
Does the community maintain elevation records? If yes, please describe.	No, but Bull Hill mountain which borders the village to the north is 1400 ft high. The Village is also bordered by another mountain to the south.
Describe any areas of flood risk with limited NFIP policy coverage.	Areas including the Foundry Brook and unnamed tributaries to the Foundry Brook are vulnerable.
How does the community teach property owners or other stakeholders about the importance of flood insurance?	The Village points people to home insurance.
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	National Flood Hazard Layer
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?	The planning board has reviewed flood hazard for new development.

7.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Nelsonville 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 Nelsonville to identify opportunities for integrating mitigation concepts into ongoing Village procedures.

7.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 7-20 and Table 7-21 detail the available planning and regulatory capabilities of the Village.

Regulatory Capabilities

Table 7-20. Regulatory Capabilities in Nelsonville

Capability Type	In Place in Municipality	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the "2015 I-Codes"), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017). Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries.	NYS Uniform and Energy Code	Building Inspector
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	No	-	-	-
Environmental Protection Ordinance	No	-	-	-
Flood Damage Prevention Ordinance	Yes	It is the purpose of this local law to: (1) regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; (2) require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; (3) control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters; (4) control filling, grading, dredging and other development which may increase erosion or flood damages; (5) regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands, and; (6) qualify and maintain for	Local Law No. 2 of the year 2012	Building Inspector

Capability Type	In Place in Municipality	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		participation in the National Flood Insurance Program.		
Growth Management	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	No	-	-	-
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	-	-	-
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	Chapter 188	Planning Board
Stormwater Management Code	No	-	-	-
Subdivision Code	Yes	Subdivision is defined in the State enabling Statutes as: the division of any parcel of land into a number of lots, blocks, or sites as specified i a local ordinance, law or regulation, with or without streets or highways, for the purpose of sale, transfer of ownership, or development. There is not a requirement by NYS for subdivisions. Each municipality is permitted to further define subdivision for its own purposes in connection with its subdivision review procedure. The enabling statutes provide that a plat showing a division of land which is subject to a municipality's subdivision regulations, may not also be subject to review under its site plan review authority.	Chapter 188	Planning Board
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	This chapter is enacted in accordance with a Comprehensive Plan for the Village of Nelsonville for the following purposes: To	Chapter 188	Planning Board

Capability Type	In Place in Municipality	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		promote the health, safety, morals and general welfare; To Lessen congestion in the streets; to secure safety from fire, panic, floods and other dangers; to provide adequate light and air; to prevent overcrowding of the land; to avoid undue concentration of population; and to promote the orderly growth, development and preservation of the Village of Nelsonville with due consideration for economic well-being, adequate housing opportunity, the character and appearance of the village.		

Planning Capabilities

Table 7-21. Planning Capabilities in Nelsonville

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	Comprehensive Master Plan, as updated in 1991. The Comprehensive Master Plan pertains to the entire 669-acre area of the Village of Nelsonville and is to serve as a guide for growth, preservation and development activities that may occur in the future with the year 2010 in view. The Comprehensive Master Plan will: 1. Guide zoning decisions, project reviews and other activities for which the Village Board of Trustees Board of Trustees and the Planning Board have responsibility, 2. Alert other government agencies to the policies and aspirations of the Village of Nelsonville when they prepare projects or conduct activities that may have a bearing on the Village, 3. Serve as a guide for development and preservation projects and programs of private individuals, groups and organizations that may wish to enhance the Village, its residents and its services and, 4. Establish a framework or model by which the Village and the community can evaluate the effects of a	Comprehensive Master Plan, as updated in 1991	Planning Board

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		particular project or proposal and can modify policy for the future as appropriate.		
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	No	-	-	-
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	No	-	-	-
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No			
Floodplain Management or Watershed Plan	No	-	-	-
Habitat Conservation / Wildlife Management Plan	No	-	-	-
Local Waterfront Revitalization Plan	No			
Open Space Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	No	-	-	-
Sheltering Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	No	-	-	-
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-

Capability Type	In Place in Municipality	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Watershed Management or Protection Plan	No	-	-	-
Other	No	-	-	-

7.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 7-22 details the available administrative and technical capabilities of the Village.

Table 7-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality	Comments
Civil Engineer	No	Contract out as needed
Construction/Building/Code Enforcement Department	Yes	Contract with Philipstown
Economic Development Commission/Committee	No	-
Emergency Management/Public Safety Department	No	Coordinate with County Bureau of Emergency Services or Sherrif's Office
Environmental Commission/Specialist	No	-
Grant Writer	No	-
Maintenance Programs to Reduce Risk	Yes	Village administration frequently tours Village to check on any areas that may require maintenance and reports to Philipstown Highway Department to be resolved
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	Putnam County Sheriff's Office; Cold Spring Fire Department; Philipstown Ambulance Corps, County-wide highway depts
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	Clerk (Website)
Planning Board	Yes	
Planning Department	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	No	-

Capability Type	In Place in Municipality	Comments
Planner or Engineer with knowledge of land development and land management practices	Yes	Contracted for specific projects
Planners or engineers with an understanding of natural hazards	Yes	Contracted for specific projects
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	Contracted for specific projects
Professionals trained in conducting damage assessments	No	-
Public Works/Highway Department	Yes	Contracted with Philipstown Highway Department
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	No	-
Surveyor(s)	Yes	Contracted for specific projects
Zoning Board of Appeals	Yes	
Other	No	-

7.6.3 Fiscal Capability

Table 7-23 summarizes financial resources available to Nelsonville.

Table 7-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement project funding	No
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal (non-FEMA) funding programs	Yes, ARPA for Sewer Feasibility Study; Heat Pump HVAC system at Village Hall; Speed Radar Signage, Push Button Crosswalk Signage, Code Review
FEMA funding programs	Yes, funding from DR-4723-NY for Village damages
Other State funding programs	Yes, CHIPS
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

7.6.4 Education and Outreach Capability

Table 7-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 7-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	No
Hazard awareness campaigns, such as school and community programs and events	Yes, could be done through Village Board meetings
Hazard mitigation information available on your website	Yes, announcements and HMP planning information have been posted
Local News	Yes, through Board meeting coverage
Natural disaster/safety programs in place for schools	N/A, school is not located in village
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes, Philipstown Food Pantry and Cold Spring Senior Center (ran by the County)
Public information officer or communications office	Yes, Village Clerk
Social media for hazard mitigation education and outreach	Yes, Village Facebook Page, Email distribution list, Village website
Warning systems for hazard events	Yes, Village Facebook Page, Email distribution list, Village website

7.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 7-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*

- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 7-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperatures	Moderate
Flood	Moderate
Harmful Algal Blooms	Moderate
Severe Storm	Moderate
Severe Winter Storm	Moderate
Terrorism	Moderate
Wildfire	Moderate

7.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

7.7.1 Past Mitigation Action Status

The tables below indicate progress on the Village's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

V. Nelsonville-1—Nelsonville Water Supply Backup	
Hazards Addressed	Severe Storm; Severe Winter Storm
Lead Agency / Department	Village of Cold Spring
Supporting Agency / Department	Village of Nelsonville
Action Location	-
Summary of Original Problem	The Village has identified vulnerabilities owing to water and electric outages during storm events. The lack of water pressure owing to its existing connection to Cold Spring has also been a concern.
Summary of Solution (Project)	Connect Nelsonville to the NYCDEP aqueduct to ensure a backup water supply during emergencies.
Action Category	SIP, PR
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Nelsonville receives its water supply from the Village of Cold Spring's water system and Cold Spring has come to an agreement with DEP for a connection to backup water from the aqueduct which would also supply water to Nelsonville.

V. Nelsonville-2—Village of Nelsonville Comprehensive Plan Update	
Hazards Addressed	Severe Storms; Severe Winter Storms; Flooding;
Lead Agency / Department	Village of Nelsonville
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Village Comprehensive Plan dates to 1991 and needs to be updated to reflect challenges presented to the Village within the past two decades, including the integration of hazard mitigation initiatives.
Summary of Solution (Project)	The Village will undertake a new comprehensive plan that integrates the Hazard Mitigation Plan and enables the acceleration of mitigation projects.
Action Category	LPR, PR
Current Status – Please select one:	In-Progress – Funds currently being sought and consultants identified
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Village applied to NYSDOS for Comprehensive update and was not awarded; the Village is considering attempting NYSDOS grant again, another grant or hiring a planning firm without a grant.
If discontinue, explain why	-

V. Nelsonville-3—Implement a program to complete inspections of properties that have Liquefied Natural Propane tanks	
Hazards Addressed	Flood; Severe Storms
Lead Agency / Department	Village Building Inspector
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Properties along Foundry Book have above-ground fuel tanks that may become dislodged during a flooding event. These properties are found along Foundry Brook.
Summary of Solution (Project)	Implement a program to complete inspections of properties that have Liquefied Natural Propane tanks, and work with property owners to secure vulnerable tanks.
Action Category	LPR, PR
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Action has been taken through notification to contractors in the permitting process. When tanks are installed in floodplains, there are additional requirements to anchor the tanks so as not to allow them to float. This requirement is enforced, therefore a special inspection program is not needed.

V. Nelsonville-4—Critical Facility Backup Power	
Hazards Addressed	Severe Storm; Severe Winter Storm
Lead Agency / Department	Village Board
Supporting Agency / Department	Sheriff Facility
Action Location	-
Summary of Original Problem	The following critical facilities in the Village lack back-up power •Village Office and Court House (258-260 Main Street) •Putnam County Sheriff Substation (276 Main Street)
Summary of Solution (Project)	Install permanent back-up power at both facilities to support critical operations.
Action Category	SIP, PR
Current Status – Please select one:	Discontinued – No longer relevant
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Village Hall does not require full time support in the event of an emergency power outage. Putnam County Sheriff Substation is rented by the County and a County responsibility.

V. Nelsonville-5—Village Sewer Project	
Hazards Addressed	Flood; Severe Storm; Severe Winter Storm
Lead Agency / Department	Village of Nelsonville
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Village lacks a sewer system connection and many of the existing septic systems in the Village are failing.
Summary of Solution (Project)	Complete feasibility study to connect the Village residents to the existing sewer system that is currently serving the Village of Cold Spring. This system was designed to care for the future capacity of the village of Nelsonville. Onsite disposal systems are vulnerable to power outages, and flooding for properties in low-lying areas.
Action Category	SIP, PR
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	The Village has completed a sewer feasibility study.

V. Nelsonville-6—Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	supported by relevant local department leads
Action Location	-
Summary of Original Problem	The Village is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings
Summary of Solution (Project)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically: •Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation. (PCBES-1). •Workshops and Seminars to build local capabilities in floodplain management and disaster recovery (PCBES-11), potentially to include: NFIP Community Rating System (CRS) • Benefit-Cost Analysis (BCA) • Substantial Damage Estimating (SDE) • NFIP Elevation Certificates (EC) • Certified Floodplain Manager (CFM) Training and Certification
Action Category	EAP, PI
Current Status – Please select one:	Discontinued – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	-

7.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Village of Nelsonville identified the following mitigation efforts completed since the last HMP:

- Following the FEMA designated Severe Storm/Flooding event of July 2023, the Village improved drainage on Healy Road, Pine Street, Bank Street, and Pearl Street. Improvements included additional drains, larger drains with additional sump capacity, curbs and rip rap ditches to divert water runoff. Over $800,000 in damages was repaired utilizing FEMA funding.

7.7.3 Identified Issues

The Village of Nelsonville has identified the following vulnerabilities within their community for mitigation strategy development:

- The Village Comprehensive Plan dates to 1991 and needs to be updated to reflect challenges presented to the Village within the past two decades, including the integration of hazard mitigation initiatives, such as PPE distribution locations, sheltering locations for power outages or extreme temperatures and integration of flood related problem areas. The Village applied to NYSDOS for a Comprehensive Plan update and was not awarded; the Village is considering attempting NYSDOS grant again, other grant sources or hiring a planning firm without a grant.

- Residents along the unnamed tributaries of the Foundry Brook are not covered by the current FEMA flood hazard area and are not eligible for discounted flood insurance through the NFIP. This issue was amplified when individuals incurred a lot of damage during the July 9, 2023, FEMA declared Severe Storm emergency, but were not deemed eligible for FEMA assistance. One homeowner reported two and a half feet of water in the home, and it damaged the first floor. Another homeowner had to relocate their home to higher ground on their property, after the first floor and basement were flooded. Additionally, there are at least six homes and seven businesses located outside of the floodplain that are significantly impacted by the tributaries of the Brook. Including these known areas of impact along the tributaries would allow home and business owners the ability to qualify for discounted flood insurance.
- The steep topography of Bull Hill to the north of the Villages and increased severe weather have created frequent flash flooding events impacting municipal storm water infrastructure and private property. To mitigate significant flooding from severe storms, flash flooding and winter storms, the Villages of Nelsonville and Cold Spring and the Town of Philipstown applied to and were awarded a NYSDEC Hudson River Estuary Program Planning grant to complete an assessment of the flooding causes and potential mitigation measures. The three municipalities plan to continue to seek grant opportunities to develop engineering and construction plans to complete recommended mitigation measures. The municipalities are beginning the assessment in 2026.

7.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Nelsonville participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Nelsonville 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 Village priorities.

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 7-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-NelsonvilleV-01. Comprehensive Plan Update

Lead Agency:	Village Planning Board	
Supporting Agencies:	Village Administration	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☐Earthquake ☒Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	The Village Comprehensive Plan dates to 1991 and needs to be updated to reflect challenges presented to the Village within the past two decades, including the integration of hazard mitigation initiatives, such as PPE distribution locations, sheltering locations for power outages or extreme temperatures and integration of flood related problem areas. The Village applied to NYSDOS for a Comprehensive Plan update and was not awarded; the Village is considering attempting NYSDOS grant again, other grant sources or hiring a planning firm without a grant.	
Description of the Solution:	The Village will acquire funding to update its Comprehensive Plan from 1991 and will ensure the plan incorporates hazard mitigation techniques.	
Estimated Cost:	TBD based on funding method	
Potential Funding Sources:	NYSDOS, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	2, 5	
Benefits:	This action will have the Village update its comprehensive plan, which has not been updated in many years. The integration of hazard mitigation principles will present the opportunity for the Village to identify areas of the Village which may be impacted by hazards and plan for future land use accordingly.	
Impact on Socially Vulnerable Populations:	The inclusion of hazard mitigation principles into the comprehensive plan may include discussions on how hazard risks may impact socially vulnerable populations in the Village.	
Impact on Future Development:	This action will have a direct impact on future land use in the Village, as the comprehensive plan guides land use principles in the Village.	
Impact on Critical Facilities/Lifelines:	Updating the comprehensive plan to include hazard mitigation principles may present an opportunity to discuss hazard risks to critical facilities and lifelines in the Village.	
Impact on Capabilities:	This action will update an already existing planning capability of the Village, making it more resilient.	
Climate Change Considerations:	As impacts from climate change are increasingly felt, the contents in the Village's comprehensive plan will need to be updated.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Integrate hazard mitigation principles in only plan elements	The plan will miss integration opportunities in the comprehensive plan main document
	Integrate hazard mitigation principles in only comprehensive plan main document	The plan will miss integration opportunities in the plan elements

Action 2027-NelsonvilleV-02. FEMA FIRM Update

Lead Agency:	Village Administration, FEMA	
Supporting Agencies:	Village Planning Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Residents along the unnamed tributaries of the Foundry Brook are not covered by the current FEMA flood hazard area and are not eligible for discounted flood insurance through the NFIP. This issue was amplified when individuals incurred a lot of damage during the July 9, 2023, FEMA declared Severe Storm emergency, but were not deemed eligible for FEMA assistance. One homeowner reported two and a half feet of water in the home, and it damaged the first floor. Another homeowner had to relocate their home to higher ground on their property, after the first floor and basement were flooded. Additionally, there are at least six homes and seven businesses located outside of the floodplain that are significantly impacted by the tributaries of the Brook. Including these known areas of impact along the tributaries would allow home and business owners the ability to qualify for discounted flood insurance.	
Description of the Solution:	The Village will contact FEMA to remap the Village and will actively participate in the remapping process. This participation will include providing data and information to support map revisions, identifying areas of flooding concern, providing review of preliminary maps, and adopting updated flood damage prevention local laws when the FIRMs are finalized.	
Estimated Cost:	Staff/Elected Official Time	
Potential Funding Sources:	FEMA, Village Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3	
Benefits:	Updating FIRMs will provide a more complete picture of the floodplain and the overall flood hazard in Putnam County. This will inform other sectors of the community, including land use, development, permitting, and codes and standards.	
Impact on Socially Vulnerable Populations:	An analysis of the floodplain will inform future community development and land use and prevent vulnerable populations from residing in areas of heightened flood risk.	
Impact on Future Development:	Updated FIRMs will decide which populations and structures will require flood insurance to be built in areas of flood hazard.	
Impact on Critical Facilities/Lifelines:	Creation of updated floodplain maps will inform efforts to increase the resilience of critical infrastructure that is present in those areas, including transportation routes, water treatment plants, and other utility services. This will also aid in preventing future development of infrastructure in these areas.	
Impact on Capabilities:	An understanding of the floodplain will allow for the development of processes, plans, training and staff placement to address flooding issues in the areas of greatest concern before they occur.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Village creates its own flood maps	Time consuming, cost prohibitive, may not be recognized as official documentation in grant applications
	FEMA updates maps without Village input	Required changes for areas of flooding may not be incorporated

Action 2027-NelsonvilleV-03. Climate Vulnerability Assessment Integration

Lead Agency:	Village Administration, NYSDEC	
Supporting Agencies:	Village, Cold Spring, Philipstown	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The steep topography of Bull Hill to the north of the Villages and increased severe weather have created frequent flash flooding events impacting municipal storm water infrastructure and private property. To mitigate significant flooding from severe storms, flash flooding and winter storms, the Villages of Nelsonville and Cold Spring and the Town of Philipstown applied to and were awarded a NYSDEC Hudson River Estuary Program Planning grant to complete an assessment of the flooding causes and potential mitigation measures. The three municipalities plan to continue to seek grant opportunities to develop engineering and construction plans to complete recommended mitigation measures. The municipalities are beginning the assessment in 2026.	
Description of the Solution:	The Village will continue to work with the Village of Cold Spring and Town of Philipstown to acquire funding to integrate the findings of the climate vulnerability assessment and adaptation plan for mitigation measures related to rainfall-based flooding and snow melt from severe winter storm events. Further, the municipalities would need to acquire funding for engineering and construction of these mitigation measures.	
Estimated Cost:	TBD based on study	
Potential Funding Sources:	HMGP, BRIC, Municipal Match	
Implementation Timeline:	Within 5 years	
Goals Met:	2, 3, 5	
Benefits:	A climate vulnerability assessment driven approach to flood mitigation not only reduces immediate flood impacts but also strengthens long-term resilience, protects assets, improves environmental quality, and supports equitable, sustainable community development. This is especially important in the face of increasing rainfall intensity and climate-related flood risks.	
Impact on Socially Vulnerable Populations:	An analysis of the floodplain will inform future community development and land use and prevent vulnerable populations from residing in areas of heightened flood risk.	
Impact on Future Development:	By combining data-driven risk assessment with actionable, nature-based and engineered solutions, the Village may be able to significantly reduce future flood impacts from rainfall while guiding sustainable development.	
Impact on Critical Facilities/Lifelines:	Implementing projects from a climate vulnerability assessment to reduce rainfall-induced flooding can significantly protect critical facilities by lowering the risk of operational disruption, damage, and long-term degradation.	
Impact on Capabilities:	This action ensures that the Village is not negatively impacted by rain-based flooding which ensures that infrastructure can remain open and operable.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Redo all culverts and drainage systems	Not feasible or cost effective
	Redo Climate Vulnerability Assessment	Not feasible or cost effective

Table 7-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-NelsonvilleV-01	Comprehensive Plan Update	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2027-NelsonvilleV-02	FEMA FIRM Update	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2027-NelsonvilleV-03	Climate Vulnerability Assessment Integration	1	1	1	1	1	0	1	1	1	1	1	0	1	1	**12**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

8. TOWN OF PATTERSON

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

8.1 HAZARD MITIGATION PLANNING TEAM

The Town of Patterson identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments.

Table 8-1 summarizes the Town officials who participated in the development of the annex. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 8-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Richard Williams Sr., Supervisor Address: PO Box 470, 1142 Route 311, Patterson, NY 12563 Phone Number: 845-878-6500 Email: supervisor@pattersonny.org	Name/Title: Edward Foster Jr., Highway Superintendent Address: PO Box 470, 1142 Route 311, Patterson, NY 12563 Phone Number: 845-878-4341 Email: highway@pattersonny.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Richard Williams Sr. Address: PO Box 470, 1142 Route 311, Patterson, NY 12563 Phone Number: 845-878-6500 Email: planning1@pattersonny.org	

8.2 COMMUNITY PROFILE

8.2.1 Community Classifications

Table 8-2 summarizes classifications for community programs available to Patterson.

Table 8-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	8	-
NYSDEC Climate Smart Communities	No	-	-

Program	Participating? (Yes/No)	Classification	Date Classified
NYSERDA Clean Energy Community	Yes	Not Designated	January 25, 2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

8.2.2 Community Profile

The Town of Patterson is located in the northeast corner of Putnam County, New York, in the Lower Hudson Valley region of New York State. The Town Board is the main governing body in the Town of Patterson. The Supervisor is the chief elected official, and serves a term of four years. Town Councilperson serves terms of four years.

Table 8-3 through Table 8-6 note land area, population, and building stock information for the Town of Patterson.

Table 8-3. Total Land Area in the Town of Patterson

Jurisdiction	Total Land Area	
	Acres	Square Miles
Patterson (T)	20,337.1	31.8

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 8-4. Population Estimates in the Town of Patterson

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
11,541	11.8%	11,560	11.8%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 8-5. Vulnerable Populations in the Town of Patterson

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
1,878	16.2%	522	4.5%	193	1.7%	1,048	9.1%	1,939	16.8%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 8-6. General Building Stock in the Town of Patterson

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
4,118	$3,126,610,140	3,344	$1,661,607,279	631	$686,283,521	16	$112,379,060	127	$666,340,280

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

8.3 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 Patterson's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

8.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Patterson are shown in Figure 8-1 and Figure 8-2. 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 Patterson has significant exposure.

Figure 8-1. Patterson Hazard Area Map #1

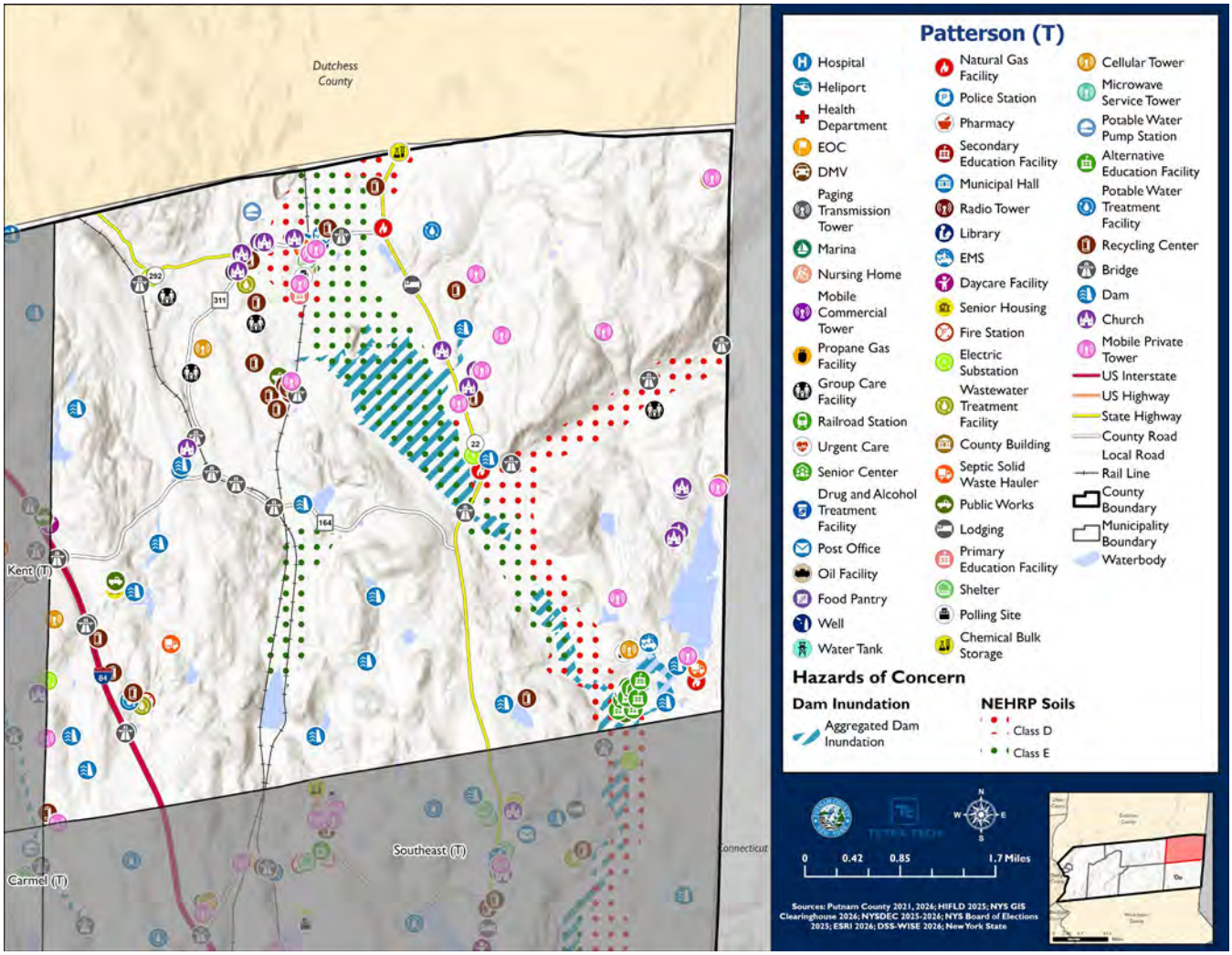
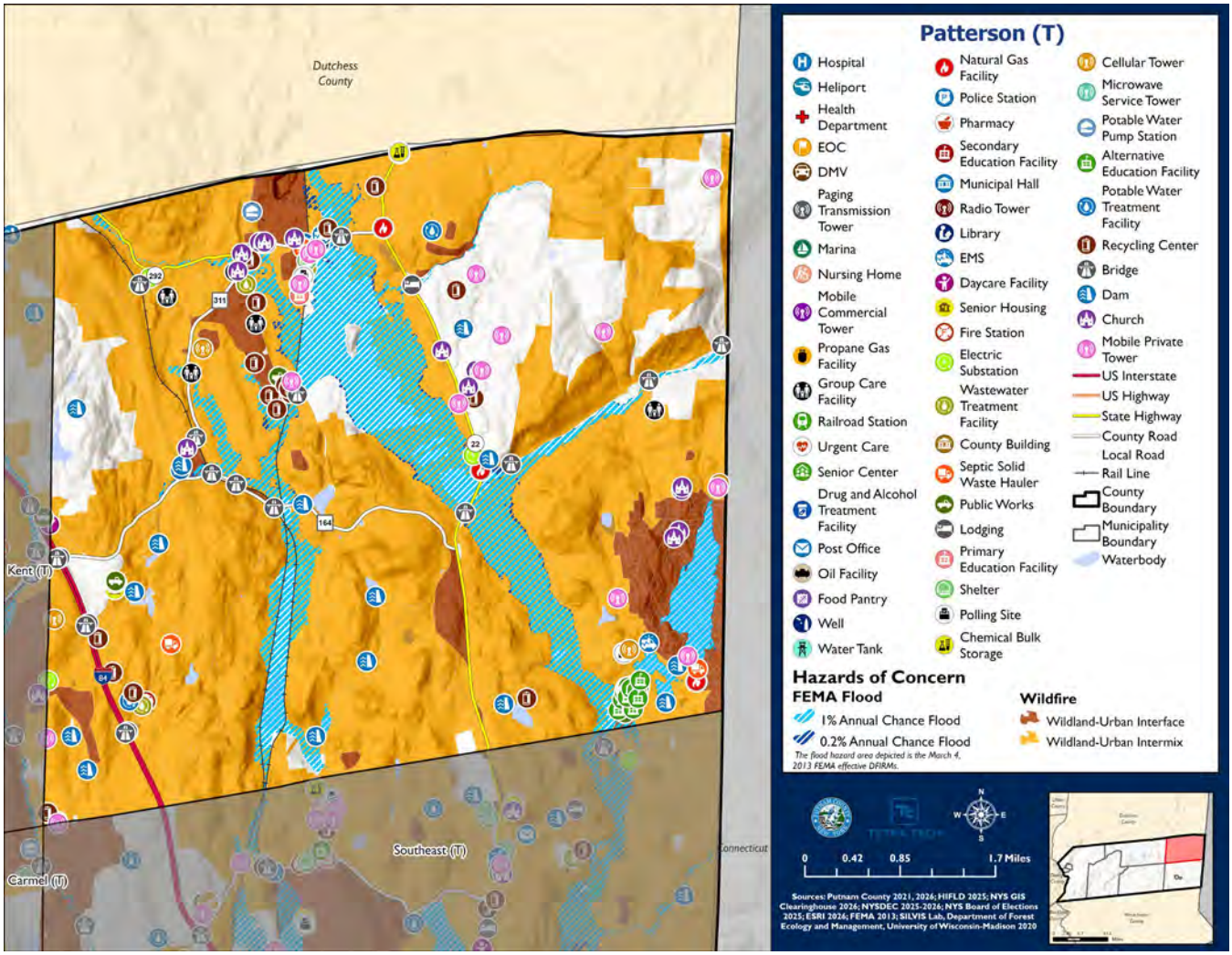


Figure 8-2. Patterson Hazard Area Map #2



8.3.2 Previous Event History

The history of natural and non-natural hazard events in Patterson is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 8-7 and Table 8-8 provide details on the loss and damage in Patterson during hazard events since the last hazard mitigation plan update.

Table 8-7. Presidential Disaster Declarations History in Patterson

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Patterson
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	Loss of revenue
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	Incurred $55,958.61 in damages
August 21-24, 2021	EM-3565-NY	Hurricane Henri	No damages incurred

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Patterson
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	Incurred $55,938.18 in damages
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	No damages incurred

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 8-8. Hazard Event History in Patterson

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Patterson
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	No damages incurred
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	No damages incurred
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	No damages incurred
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No damages incurred
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	No damages incurred
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	No damages incurred
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	No damages incurred

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

8.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following

a disaster are key factors in the severity of impacts and the speed of recovery. Table 8-9 includes an inventory of critical facilities and infrastructure for the Town of Patterson.

Table 8-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Alpine Inn	Lodging	N	Y	2027-PattersonT-01	-
Green Chimneys Children Services	Alternative Education Facility	Y	Y	2027-PattersonT-01	-
Patterson	Railroad Station	N	Y	2027-PattersonT-01	-
Wastewater Pump Station – Patterson	Wastewater Treatment Facility	N	Y	2027-PattersonT-01	-
Patterson Automotive	Natural Gas Facility	N	Y	2027-PattersonT-01	-
Warming center--Patterson Recreation Center	Shelter	N	Y	2027-PattersonT-01	-
Patterson Fire Department 1	Mobile Private Tower	Y	Y	2027-PattersonT-01	-
Putnam Lake Fire Department	Mobile Private Tower	Y	Y	2027-PattersonT-01	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Six bridges were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

8.3.4 Local Hazard Impacts Assessment

Representatives from the Town of Patterson Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 8-10.

Table 8-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	There are 14 dams in the Town of Patterson; two High Hazard Dams, one Intermediate Hazard Dam, 10 Low Hazard dams and one dam not assigned a classification. The two high hazard dams are Putnam Lake and Mountain Brook Dam. Should a breach of the Putnam Lake dam occur, flows would travel across Fairfield Drive to Lost Lake. The subsequent rise in the water level of Lost Lake would affect several of the homes and the access driveway on the easterly side of the lake. At Lost Lake the flood wave would split into a southeast wave and a northwest wave. The northwest wave would result in flooding of the Green Chimneys School Campus and the Green Chimneys School parking area on the west side of Doansburg Road. The southeast wave will follow the existing stream channel of the Deforest Corners Brook until it reaches the East Branch Croton River and surrounding flood plain. South of Lost Lake there is one existing residential home on the east side of Gage Road which could be affected. This home is identified as 503 Gage Road. The flood wave would continue across Gage Road,

Hazard Name	Local Impacts: People, Community Services, Local Economy
	crossing the Putnam County Highway maintenance yard at the intersection of Gage Road and Doansburg Road. In this general area a few of the home on Mill Farm Lane (a residential street off of Doansburg Road) could be affected. The southeast flood wave will cross Doansburg Road at the intersection of Gage Road extending south for a distance of approximately 1,300 ft. Mountain Brook dam sits on the east side of NY Route 22 on the Watchtower campus. Immediately west of the NY Route 22 and below the dam are two residences, barns and storage owned by the dam's owner. The potential downstream hazard due to a dam failure would be the potential damage caused to (1) NY Route 22, (2) any cars traveling along the road at the at the time of failure, (3) utilities along the road, and (4) the residences and other buildings on the west side of NY Route 22 in close vicinity to Mountain Brook.
Disease Outbreak	Response to a disease outbreak is heavily dependent on the communicability of the disease and means the disease is transmitted. Assuming worse case scenario would require quarantine of employees, closing of all facilities, and setting up remote work for those employees/departments that are able to function remotely. Departments that cannot operate remotely, such has Highway would need to use alternating schedules to minimize contact and maintain social distancing to the greatest extent practicable.
Drought	No known impacts
Earthquake	No known impacts
Extreme Temperatures	No known impacts
Flood	No known impacts
Harmful Algal Blooms	There are no surface water drinking sources in the Town of Patterson. The only known impact would be a loss of recreational opportunities.
Severe Storm	No known impacts
Severe Winter Storm	No known impacts
Terrorism	No known impacts
Wildfire	No known impacts

8.3.5 Vulnerable Community Assets

Representatives from the Town of Patterson Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 8-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 8-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Loss of income	**Area: Concentration of Local Businesses, Major Employers**	Extended loss of power of internet. Loss of roads/transportation routes.
Area: Concentration of Residences	Extended loss of power of internet. Loss of roads/transportation routes.	**Local Roads, Highways, Culverts, Bridges**	Loss of roads/transportation routes.
Municipal Buildings	Town Hall and the Recreation Center can act as	**Medical Centers (non-hospital)**	Not applicable

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
	heating/cooling centers. All municipal buildings and facilities have emergency generators.		
College/University	Not Applicable	**Place of Worship**	Extended loss of power of internet. Loss of roads/transportation routes.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	Extended loss of power of internet. Loss of roads/transportation routes.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	Loss of roads/transportation routes.
Cultural/Historic Buildings/Sites	Not Applicable	**Schools (K-12)**	Extended loss of power of internet. Loss of roads/transportation routes.
Elder-care Facilities	Extended loss of power of internet. Loss of roads/transportation routes.	**Utilities**	Extended loss of power of internet. Loss of roads/transportation routes.
Fire/Police Stations	Extended loss of power of internet. Loss of roads/transportation routes.	**Wastewater Treatment Plants**	All pump stations and WWTP have emergency back-up power. The wastewater treatment plant is in good shape.
Gas Stations, Grocery Stores, Supermarkets	Extended loss of power of internet. Loss of roads/transportation routes. Loss of Income.	**Water: Drinking Water Resources**	Two of the water treatment plants need upgrades, and one water treatment plant has just undergone a complete rebuild. The water treatment plants have emergency back-up power.
Hospitals	Not Applicable	**Other**	Extended loss of power of internet. Loss of roads/transportation routes.

8.3.6 Dams

Table 8-12 includes all dams in the Town of Patterson. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 8-12. Dams Located in Patterson

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-0901	Putnam Lake Dam	BOG BROOK	TOWN OF PATTERSON	Local Government	Fire Protection, Stock, Or Small Farm Pond, Recreation	High Hazard Dam
231-2389	Rihm & Kittel Dam	TR-EAST BRANCH CROTON RIVER	W RIHM & L KITTLE	N/A	Recreation	Low Hazard Dam
231-5204	Amos Noach Dam	TR-ICE POND	AMOS NOACH	N/A	Fire Protection, Stock, Or Small Farm Pond, Recreation	Low Hazard Dam
230-5320	Mountain Brook Dam	MOUNTAIN BROOK	WATCHTOWER BIBLE AND TRACT SOCIETY of New York Inc.	Private	Irrigation	High Hazard Dam
231-4513	Wonder Lake Dam	TR-MUDDY BROOK	Not Found	Not Found	Recreation	Low Hazard Dam
231-4607	Mendel Pond Dam	TR-MUDDY BROOK	WILLIAM & BARBARA HAMILTON	N/A	Recreation	Hazard Classification Not Assigned
231-4609	China Pond Dam	TR-W BRANCH CROTON RIVER	LAWRENCE PIAZZA	N/A	Recreation	Low Hazard Dam
231-4980	Pond View Dam	TR-CROTON RIVER	BAYSWATER DEVELOPMENT, LLC	Private	Recreation	Low Hazard Dam
231-4981	Clover Lake Estates Dam	TR-MUDDY BROOK	CLOVER LAKE HOMES INC	N/A	Recreation	Low Hazard Dam
231-4986	Watchtower Dam	TR-E BRANCH CROTON RIVER	Not Found	Not Found	Flood Control and Storm Water Management	Low Hazard Dam
231-5001	Burman Pond Dam	TR-MUDDY BROOK	MCCAULEY FAMILY LLC NO. 1	Private	Recreation	Low Hazard Dam
231-0564	Camp Herrlich Dam	TR-MIDDLE BR	Putnam County Department of Public Works	Local Government	Recreation	Intermediate Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
		CROTON RIVER				
231-0565A	Lost Lake Dam & Dike	TR-E BRANCH CROTON RIVER	LOST LAKE ASSOCIATION	Private	Recreation	Low Hazard Dam
231-0572	Peppers Mill Upper Dam	WEST BRANCH MUDDY BROOK	LILLIAN MAC ISAAC	N/A	Irrigation	Low Hazard Dam
231-0573	Peppers Mill Lower Dam	WEST BRANCH MUDDY BROOK	LILLIAN MAC ISAAC	N/A	Irrigation, Recreation	Low Hazard Dam

Information about dam risk in the Town of Patterson:

Putnam Lake dam occur, flows would travel across Fairfield Drive to Lost Lake. The subsequent rise in the water level of Lost Lake would affect several of the homes and the access driveway on the easterly side of the lake. At Lost Lake the flood wave would split into an southeast wave and a northwest wave. The northwest wave would result in flooding of the Green Chimneys School Campus and the Green Chimneys School parking area on the west side of Doansburg Road. The southeast wave will follow the existing stream channel of the Deforest Corners Brook until it reaches the East Branch Croton River and surrounding flood plain. South of Lost Lake there is one existing residential home on the east side of Gage Road which could be affected. This home is identified as 503 Gage Road. The flood wave would continue across Gage Road, crossing the Putnam County Highway maintenance yard at the intersection of Gage Road and Doansburg Road. In this general area a few of the home on Mill Farm Lane (a residential street off of Doansburg Road) could be affected. The southeast flood wave will cross Doansburg Road at the intersection of Gage Road extending south for a distance of approximately 1,300 ft. Mountain Brook dam sits on the east side of NY Route 22 on the Watchtower campus. Immediately west of the NY Route 22 and below the dam are two residences, barns and storage owned by the dam's owner. The potential downstream hazard due to a dam failure would be the potential damage caused to (1) NY Route 22, (2) any cars traveling along the road at the at the time of failure, (3) utilities along the road, and (4) the residences and other buildings on the west side of NY Route 22 in close vicinity to Mountain Brook.

8.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 8-13 identifies the preliminary hazard ranking for Patterson, whether the Town agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 8-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	Medium	Putnam Lake Dam spillway will not pass the probable maximum flood event	Medium
Disease Outbreak	Medium	Agree	-	-	Medium
Drought	High	Disagree	Medium	The Town received consistent periodic rainfall.	Medium
Earthquake	Low	Agree	-	-	Low
Extreme Temperatures	Medium	Agree	-	-	Medium
Flood	Low	Agree	-	-	Low
Harmful Algal Blooms	Medium	Agree	-	-	Medium
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Agree	-	-	Low
Wildfire	High	Disagree	Medium	The Town received consistent periodic rainfall.	Medium

8.4 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 8-14 through Table 8-17.

8.4.1 Development and Permitting

Table 8-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes, Building Department, Planning Department
What is your process for tracking building permits?	Centralized database
Are permits tracked by hazard area? (For example, floodplain development permits.)	No
Does your community have a buildable land inventory? If yes, please describe.	In 2001, while developing the "Croton Plan" a buildout analysis of the Town of Patterson was completed for the former zoning and proposed zoning.

Table 8-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2022				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2023				
Total Permits	2	0	1	3
Permits within SFHA	0	0	0	0
2024				
Total Permits	3	0	1	4
Permits within SFHA	0	0	0	0
2025				
Total Permits	9	0	3	12
Permits within SFHA	0	0	0	0

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

Table 8-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Ice Pond Subdivision	Single Family Residential	24	Ice Pond Road	None	In Construction

Table 8-17. 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 Zones*	Description / Status of Development
The Town did not identify any known or anticipated major development and infrastructure in the next five years					

8.5 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 8-1 is responsible for maintaining this information.

8.5.1 NFIP Statistics

Table 8-18 summarizes the NFIP policy and claim statistics for the Town of Patterson.

Table 8-18. Patterson NFIP Summary of Policy and Claim Statistics

NFIP Community Number	361023#
FEMA 2020 NFIP Data	
# Policies	20
# Claims (Losses)	11
Total Losses Claimed	$20,454
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	21
Repetitive Loss Events	6
Net Building Payment	$561,426
Net Contents Payment	$44,521
Total Net Payment	$605,948

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 2020, 2026

Note: "-" = information unavailable

8.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 8-19.

Table 8-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Periphery of NYSDEC DP-22 (Great Swamp) and south of Little Pond.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	The Town Planner is the Community Floodplain Administrator

NFIP Topic	Comments
What local department is responsible for floodplain management?	The Town Planner is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2013
What is the date that your flood damage prevention ordinance was last amended?	February 19, 2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 4, 2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Permit review and inspections.
What are the barriers to running an effective NFIP program in your community, if any?	None
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	Yes, training on mitigating impacts to activities in the floodplain
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	SUBSTANTIAL DAMAGE - damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damage occurred
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	SUBSTANTIAL IMPROVEMENT - Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. Substantial improvement also means "cumulative substantial improvement." The term includes structures which have incurred substantial damage, regardless of the actual repair work performed
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	0
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	No
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	No
Does the community maintain elevation records? If yes, please describe.	No
Describe any areas of flood risk with limited NFIP policy coverage.	Unknown

NFIP Topic	Comments
How does the community teach property owners or other stakeholders about the importance of flood insurance?	Does not occur
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	FEMA Map Service Center, NYS DEC resources
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, site plan review

8.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Patterson 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 Patterson to identify opportunities for integrating mitigation concepts into ongoing Town procedures.

8.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 8-20 and Table 8-21 detail the available planning and regulatory capabilities of the Town.

Regulatory Capabilities

Table 8-20. Regulatory Capabilities in Patterson

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	Town Code, Ch. 64 initially adopted 3/10/1993; readopted 5/23/2007. Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the "2015 I-Codes"), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017).. Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries.	NYS Uniform and Energy Code	Building Department
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	No	-	-	-
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019	Title 6 NYCRR Part 617	Planning Dept.
Flood Damage Prevention Ordinance	Yes	It is the purpose of this chapter to; A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which resulting increases in erosion or in flood heights or velocities; B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial Construction; C. Control the alteration of natural floodplains, stream channels and natural protective barriers which are involved in the accommodation of floodwaters; D. Control filling, grading, dredging and other development which may increase erosion or flood damages; E. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and F. Qualify for and maintain participation in the National Flood Insurance Program.	Town Code, Ch. 91, adopted 8/26/1987, readopted 2/13/2013	Planning Department
Growth Management	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Municipal Separate Storm Sewer System (MS4)	Yes	This requires urbanized areas (local governments) to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events to waterbodies to the "maximum extent practicable". The goal of the program is to improve water quality and recreational use of waterways. A Municipal Separate Storm Sewer Systems Permit, GP-0-15-003 is required.	EPA Phase II Stormwater Rule	Planning Dept.
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	-	-	-
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a)The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	Town Code, Ch. 154 6/12/1942; readopted 4/13/2005	Planning Board / Planning Department
Stormwater Management Code	Yes	The Town of Patterson finds that land development activities, associated increases in site impervious cover, disturbances to the natural vegetative cover, and changes to the topography of the land can often alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes. To accomplish the purposes of this Chapter, the Town Board of the Town of Patterson has promulgated standards and regulations which seek to achieve the following objectives: (1) Minimize increases in peak rate of stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels; (2) Minimize increases in pollution caused by	Town Code, Ch. 133, Adopted 4/13/2005	Planning Department

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		stormwater runoff from land development activities which would otherwise degrade local water quality; (3) Minimize the total volume of stormwater runoff which flows from any specific site during, and following development; (4) Reduce soil erosion and sediment transport; (5) Meet the requirements of minimum measures 4 and 5 of the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02 or as amended or revised; and (6) Require land development activities to conform to the substantive requirements of the NYS Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities GP-02-01 or as amended or revised.		
Subdivision Code	Yes	The intent of the regulations is to encourage the most appropriate and best development of land in order to protect and promote the health, safety, and general welfare by promoting the wise use and sound management of the groundwater systems, drainage basins, wetlands, streams, lakes and ponds and all other natural resources throughout the Town, and maintaining, through all subdivision planning and development the existing character and development patterns of neighboring properties.	Town Code, Ch.138 readopted 4/13/2005	Building Department/ Planning Department
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	It is the purpose of this Chapter to: A. Guide the future development of the town in accordance with a comprehensive plan; B. To conserve the natural resources and rural character of the town; C. To provide for adequate light, air and privacy; to promote safety from fires, floods and other dangers, and to prevent overcrowding of the land and undue congestion of the population; D. To protect the character and the social and economic stability of all parts of the town; E. To protect and conserve the value of land and buildings throughout the town; F. Bring about the gradual conformity of the uses of land and buildings throughout the town to the comprehensive zoning plan; G. To aid and encourage the wise use and sound management of the groundwater systems, drainage basins, streams, lakes and ponds; H. To aid in bringing about the most beneficial relation between the uses of land and buildings and the movement of traffic through and the	Town Code, Ch. 154 6/12/1942; readopted 4/13/2005	Building Department/ Planning Department

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		circulation of traffic within the town; I. To aid in providing a guide for public policy and action in the adequate provision of transportation, water, sewerage, schools, parks and other public facilities and services, and for private enterprise in building development, investment and other economic activity; J. To recognize the economic value of Patterson's natural beauty and environmental amenities, to protect the integrity of scenic views, ridge lines, agricultural land, existing and potential recreation areas, waterways, ground and surface water supplies, ecological systems, wetlands, wildlife habitat, and natural vegetation, and to maintain environmentally significant open space; K. To promote attractive well-designed development; and L. To protect the ecological integrity and benefits provided by the wetland system identified as the Great Swamp, which includes water filtration, groundwater recharge, flood control, habitat for plants, animals and rare species, recreation and scenic views.		

Planning Capabilities

Table 8-21. Planning Capabilities in Patterson

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	The Goals of the Comprehensive Plan are to; Preserve and enhance the natural beauty and rural quality of the community and protect the small-town atmosphere; Protect environmentally sensitive areas and natural resources such as scenic roads and vistas, waterways, floodplains and wetlands; Establish environmentally sound land use development policies which respect private property rights and ensure balanced and orderly patterns of future growth; Encourage regional cooperation to safeguard Patterson's environmental setting; Foster and preserve	Adopted 12/13/2000	Town Board

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		the community's heritage by protecting historic structures and sites which foster the natural beauty of the Town; Provide adequate public utilities and recreation facilities, and minimize the fiscal burden of such services on the existing community; Improve traffic conditions, and provide adequate parking and local circulation within secondary highway networks; Promote environmentally sound management of the waste stream; Promote non-residential growth in areas suitable for such uses; Accommodate new growth in a manner which protects the semi-rural character of the Town; and Provide sufficient variety and quantity of housing to accommodate the present and future needs of various income levels and age groups, including housing suitable for people of low and moderate income.		
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	No	-	-	-
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B. The plan is developed and maintained by the New York State Office of Emergency Management and agencies that comprise the NYS Disaster Preparedness Commission (DPC).	PCBES; Multiple Plans (Haz-Mat, CEMP); January 2020	BES
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	No	-	-	-
Habitat Conservation / Wildlife Management Plan	No	-	-	-
Local Waterfront Revitalization Plan	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Open Space Plan	Yes	Element in the Comprehensive Plan	Adopted 12/13/2000	Town Board
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	Yes	The 2025 Mid-Hudson Valley Regional Community Health Assessment (CHA) provides a comprehensive overview of the health status, needs, and priorities across the seven Mid-Hudson counties. The Community Health Assessment (CHA) is a descriptive summary of a population, its health status, and the distribution of health issues and the factors that impact health. It identifies the population's main health issues and their determinants and summarizes the assets and resources that can be mobilized to address the issues identified. The findings of the CHA inform the collaborative development of the Community Health Improvement Plan (CHIP). The Putnam County 2025-2030 Community Health Improvement Plan covers Putnam County, New York. The community health improvement plan (or CHIP) is a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. In formulating the Putnam County Community Health Improvement Plan (CHIP) 2025—2030, the Putnam County Department of Health (PCDOH) has identified three priorities to be addressed from the New York State Department of Health's Prevention Agenda 2025—2030. They are Poverty, Anxiety and Stress, and Preventive Services.	Multiple Plans; Chapter 10.04 of Putnam County Charter	PC Department of Health
Sheltering Plan	No	The Town of Patterson does not currently have an agreement in place with neighboring municipalities or outside agencies for sheltering, or to manage sheltering. The Town of Patterson owns a 22,400 s.f. facility with kitchen facilities, men's and women's locker rooms, showers and bathrooms, and full backup generator that would be used for sheltering during and event.	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	Local Authority - Could be an element of the Comprehensive Plan. There is a required	Implemented 2003	Planning Department

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		planning process that must be followed when addressing stormwater management in regulated new development and redevelopment projects		
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

8.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 8-22 details the available administrative and technical capabilities of the Town.

Table 8-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	Yes	The Town has a civil engineer as a paid consultant.
Construction/Building/Code Enforcement Department	Yes	Building Department
Economic Development Commission/Committee	No	-
Emergency Management/Public Safety Department	No	-
Environmental Commission/Specialist	No	-
Grant Writer	Yes	Planning Department
Maintenance Programs to Reduce Risk	No	-
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	TOPEMS/PFD/PLFD

Capability Type	In Place in Municipality? Yes or No	Comments
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	Contracted
Planning Board	Yes	The Planning Board is responsible for controlling and guiding development in the Town, with concerns for the impact on: town economy, town services, especially emergency services, water quality, New York City watershed, traffic, air, noise, and light pollution, quality of life in the community
Planning Department	Yes	Building Department and Planning Department
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	Planning Department
Planner or Engineer with knowledge of land development and land management practices	Yes	Planning Department
Planners or engineers with an understanding of natural hazards	Yes	Planning Department
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	Consulting Engineer
Professionals trained in conducting damage assessments	No	-
Public Works/Highway Department	Yes	Highway Department
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	No	-
Surveyor(s)	No	-
Zoning Board of Appeals	Yes	-
Other	No	-

8.6.3 Fiscal Capability

Table 8-23 summarizes financial resources available to Patterson.

Table 8-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement 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 (Recreation)
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 (non-FEMA) funding programs	No
FEMA funding programs	No
Other State funding programs	No
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

8.6.4 Education and Outreach Capability

Table 8-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 8-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	No
Hazard awareness campaigns, such as school and community programs and events	No
Hazard mitigation information available on your website	No
Local News	No
Natural disaster/safety programs in place for schools	No
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No
Public information officer or communications office	No

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Social media for hazard mitigation education and outreach	Yes
Warning systems for hazard events	No

8.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 8-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 8-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Strong
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperatures	Strong
Flood	Moderate
Harmful Algal Blooms	Moderate
Severe Storm	Strong
Severe Winter Storm	Strong
Terrorism	Weak
Wildfire	Moderate

8.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

8.7.1 Past Mitigation Action Status

The tables below indicate progress on the Town's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

T. Patterson-1—Continuity of Operations	
Hazards Addressed	Severe Storm, Severe Winter Storm, Disease Outbreak
Lead Agency / Department	Town of Patterson
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Natural and man-made events can cause an interruption or loss of municipal services provided by Town Hall and Justice Court employees by forcing the closure of municipal facilities
Summary of Solution (Project)	Provide municipal office employees from Town Hall and Justice Court the ability to work remotely
Action Category	LPR, ES
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Patterson-2—Improvements to Putnam Lake Dam	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Patterson – Engineering
Supporting Agency / Department	DPW, WestCOG
Action Location	-
Summary of Original Problem	Putnam Lake is a 225 acre man-made lake impounded by an earthen dam constructed in the 1930's. Water leaves the lake by a sluicegate valve and a concrete/ stone spillway. Very little maintenance has been performed to the sluice gate valve, and the dam has other design deficiencies. The spillway for the dam does not pass the ½ probable maximum flood event. This condition may result in overtopping of the dam by 1 to 1.5 feet and breach of the dam. Downstream vulnerabilities include several large residential neighborhoods off of Fairfield Dr, a special needs school, the Putnam Lake Fire Department EOC, the Putnam Lake Market grocery store, and other local businesses and restaurants. Of great concern is the Putnam Lake Fire Department EOC, which is in the inundation area of Putnam Lake Dam Failure and Lost Lake Primary Spillway Failure, with time to peak flood at this location being two minutes.
Summary of Solution (Project)	Structural improvements to dam to address deficiencies in design and rehabilitation of the dam, increasing the safety of the structure. Specifically, rehabilitation activities would include armoring the face of the dam with rip rap to arrest wave erosion; providing for an emergency spillway; and upgrading to the sluice gate valve.
Action Category	SIP, SP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	A new sluice gate was installed in 2015 and is exercised annually.
If discontinue, explain why	Not applicable

T. Patterson-3—Emergency Bypass Road	
Hazards Addressed	All Hazards
Lead Agency / Department	Town of Patterson – Engineering
Supporting Agency / Department	DPW
Action Location	-
Summary of Original Problem	NYS Route 311 provides the main route between the fire /ambulance service and western areas of the Town. The route is bisected by the Metro North railroad line. Should an incident occur which obstructs the Route 311 crossing, the alternate route is approximately 8 miles or 18 minutes.
Summary of Solution (Project)	Construction of Bypass Road from Route 311 to West Street to the south.
Action Category	SIP, ES
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Patterson-4—Fire Fighting Water Supply	
Hazards Addressed	Wildfire
Lead Agency / Department	Town of Patterson
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	In some cases there is a deficiency in the quantity of water needed within a reasonable distance that may be used to fight a structure fire, or forest fire
Summary of Solution (Project)	Installation of dry hydrants into lakes and streams and underground storage tanks
Action Category	SIP, ES
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Patterson-5—Patterson Risk Reduction Initiative	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	relevant local department leads
Action Location	-
Summary of Original Problem	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities.
Summary of Solution (Project)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically: •Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation. (PCBES-1). •Workshops and Seminars to build local capabilities in floodplain management and disaster recovery (PCBES-11), potentially to include: - NFIP Community Rating System (CRS) - Benefit-Cost Analysis (BCA) - Substantial Damage Estimating (SDE) - NFIP Elevation Certificates (EC) - Certified Floodplain Manager (CFM) Training and Certification •County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures (2020-Putnam County-010)
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Patterson-6—Patterson Localized Vulnerability	
Hazards Addressed	All Hazards
Lead Agency / Department	Town of Patterson – Engineering
Supporting Agency / Department	DPW
Action Location	-
Summary of Original Problem	There are acute areas of vulnerability in Patterson that include both areas of flood damage to individual properties as well as locations of critical facilities located in the Special Flood Hazard Area.
Summary of Solution (Project)	The Town will contact property owners, evaluate the following identified vulnerabilities, and as appropriate, evaluate possible mitigation solutions and implement appropriate and cost-effective projects as funding is secured or appropriated: •Stagecoach Road/ Birch Hill Road from washouts due to excessive rain. •Lakeshore Drive near Valley Road from washout due to excessive rain. •East Branch Road at Haviland Hollow Road from flooding. •Private property at 325 Route 292 from flooding. •Fairfield Drive damage from flooding to headwall of culvert crossing. •1112 Route 311 damage from fire due to lightning. •Haviland Hollow Road from flooding.
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Remove statement about property at 1112 Route 311, remove private property address
If discontinue, explain why	Not applicable

T. Patterson-7—High Hazard Dam Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Patterson
Supporting Agency / Department	Watchtower Bible and Tract Society of New York Inc., NYSDEC
Action Location	-
Summary of Original Problem	The Mountain Brook Dam and Putnam Lake Dam are classified as "high hazard" Class C dams.
Summary of Solution (Project)	The Town of Patterson will collaborate with the Mountain Brook Dam's owners, and the NYSDEC on necessary EAP updates, as well as inspections and engineering assessments. If significant increased risk is found at the Dam, the Town and NYSDEC will work together to develop a plan to update and improve the conditions of the dams.
Action Category	EAP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Reword into separate HHPD actions. Focus on information sharing. The dam is a private dam owned by Watchtower Education Center who does a great job maintaining their EAP.
If discontinue, explain why	Not applicable

T. Patterson-8—Intermediate Hazard Dam Outreach	
Hazards Addressed	Flood
Lead Agency / Department	Town of Patterson
Supporting Agency / Department	Putnam County Dept of Highways and Facilities, NYSDEC
Action Location	-
Summary of Original Problem	The Putnam County-owned Camp Herrlich Dam is classified as an "intermediate hazard" Class B dam.
Summary of Solution (Project)	The Town will coordinate with the NYSDEC and Putnam County Department of Highways and Facilities about any changes to the status of the Dam and aid in the development of updated EAPs as necessary.
Action Category	EAP, PR
Current Status – Please select one:	Discontinued – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	The Dam is owned by Putnam County who is responsible for maintaining their EAP.

8.7.2 Additional Mitigation Efforts

The Town of Patterson did not identify any additional mitigation efforts completed since the last HMP.

8.7.3 Identified Issues

The Town of Patterson has identified the following vulnerabilities within their community for mitigation strategy development:

- There are several critical facilities which are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level. At risk critical facilities include:
  - Alpine Inn
  - Green Chimneys Children Services
  - Patterson Railroad Station
  - Wastewater Pump Station – Patterson
  - Patterson Automotive
  - Patterson Recreation Center (warming center)
  - Patterson Fire Department 1 Mobile Tower
  - Putnam Lake Fire Department Mobile Tower
- Harmful algal blooms occur frequently in Putnam Lake. According to the Putnam Lake Harmful Algal Bloom Action Plan, the significant sources of phosphorus loading in the lake are phosphorus inputs associated with septic system discharge; internal loading of nutrients of legacy phosphorus from in-lake sediments; and non-point source nutrient inputs from the watershed. Harmful algal blooms in Putnam Lake can impact recreational opportunities and cause a loss of income.
- Undersized drainage may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. A culvert on Lake Shore Drive East in Town is undersized or has been damaged from instances of flooding and the debris caused by severe storms and severe winter winters.
- Private properties in the periphery of NYSDEC DP-22 (Great Swamp) and south of Little Pond are prone to impacts from flooding. There are limited resources available to develop structural flood control solutions in the Town. Less intensive flood mitigation measures can lessen damage through nonstructural projects. Impacted areas include, but are not limited to:
  - Stagecoach Road/Birch Hill Road
  - Lakeshore Drive near Valley Road
  - East Branch Road at Haviland Hollow Road
  - Fairfield Drive
  - Haviland Hollow Road
- The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.
- Natural and man-made events can cause an interruption or loss of municipal services provided by Town Hall and Justice Court employees by forcing the closure of municipal facilities. Maintaining continuity of operations ensures that critical services provided by the Town are still available in the event of an emergency.

- The Putnam Lake Dam is a Class I High Hazard Dam that is located on Putnam Lake. The dam is owned by the Town of Patterson. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including Lost Lake Drive, Fairfield Drive, among others. The failure of this dam would result in excess water to flow into Lost Lake, which is located downstream of Putnam Lake, and may cause cascading impacts to the south of Lost Lake. During the dam's last inspection in March 2024, it was found to be unsound, but in fair condition; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- The Mountain Brook Dam is a Class I High Hazard Dam that is located on Mountain Brook. The dam is owned by the Watchtower Bible and Tract Society of New York, Inc. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including State Route 22, Watchtower Drive, Lopane Drive, among others. During the dam's last inspection in January 2025, it was not found to be deficient in any way.
- NYS Route 311 provides the main route between the fire /ambulance service and western areas of the Town. The route is bisected by the Metro North railroad line. Should an incident occur which obstructs the Route 311 crossing, the alternate route is approximately 8 miles or 18 minutes.
- In some cases, there is a deficiency in the quantity of water needed within a reasonable distance that may be used to fight a structure fire, or forest fire. Sourcing water from nearby waterbodies can alleviate the stress of finding an appropriate source in time of drought in order to fight a structure fire, forest fire, or wildfire. Since 2020, there have been two wildfires in the Town ("Fireside Court" with 0.2 acres burned and "Stagecoach Fire" with 3 acres burned).

8.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Patterson participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Patterson 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 Town priorities.

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 8-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-PattersonT-01. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are several critical facilities which are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level. At risk critical facilities include: • Alpine Inn • Green Chimneys Children Services • Patterson Railroad Station • Wastewater Pump Station – Patterson • Patterson Automotive • Patterson Recreation Center (warming center) • Patterson Fire Department 1 Mobile Tower • Putnam Lake Fire Department Mobile Tower	
Description of the Solution:	The Town will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s).	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of several critical facilities in the Town.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-PattersonT-02. Reduce HAB Occurrences

Lead Agency:	Town Board	
Supporting Agencies:	Putnam Lake Park District, Putnam County Health, NYS DEC, NYS DOH	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☒Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Harmful algal blooms occur frequently in Putnam Lake. According to the Putnam Lake Harmful Algal Bloom Action Plan, the significant sources of phosphorus loading in the lake are phosphorus inputs associated with septic system discharge; internal loading of nutrients of legacy phosphorus from in-lake sediments; and non-point source nutrient inputs from the watershed. Harmful algal blooms in Putnam Lake can impact recreational opportunities and cause a loss of income.	
Description of the Solution:	The Town will work with Putnam County Health, NYS DEC, and NYS DOH to review the Putnam Lake Harmful Algal Bloom Action Plan and work to reduce risk by implementing multiple stormwater best management practices (BMPs) to reduce sediment loading, including the dredging or the lake to address excess and legacy phosphorus.	
Estimated Cost:	High	
Potential Funding Sources:	PCMHAB (NOAA), NWQP (USGS), WEP (USDA), NYS DEC, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3	
Benefits:	Putnam Lake is a Class B waterbody under the New York Codes, Rules, and Regulations (6NYCRR Part 864.6), meaning it is best intended for contact recreation (i.e., swimming and bathing), non-contact recreation (i.e., boating and fishing), aesthetics, and aquatic life. Addressing the HAB occurrences in the Lake can contribute to a safer recreational environment.	
Impact on Socially Vulnerable Populations:	Addressing the HAB occurrences in the Lake can contribute to a safer recreational environment.	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	While Putnam Lake is not a critical facility or a lifeline, the Lake is a source of income for the Town during the spring and summer seasons though beach goers, fishing licensing, and boating.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	Increased occurrences in extreme heat can contribute to the growth of excess nutrients in lake environments. Anticipated increases in heavy rains can force additional runoff from surrounding properties toward and into Putnam Lake.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	No longer permit recreational use of Putnam Lake	Loss of income for the Town
	Institute ban on agricultural practices above Putnam Lake's grade	Loss of income for agriculture sector

Action 2027-PattersonT-03. Undersized Drainage

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Undersized drainage may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. A culvert on Lake Shore Drive East in Town is undersized or has been damaged from instances of flooding and the debris caused by severe storms and severe winter winters.	
Description of the Solution:	The Town Engineer will complete an engineering survey of the drainage systems in Town that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town Highway Department will complete the necessary upsizing for the culverts.	
Estimated Cost:	TBD after study is complete	
Potential Funding Sources:	FEMA HMA, CHIPS, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 2027-PattersonT-04. Localized Flood Reduction

Lead Agency:	Code Enforcement	
Supporting Agencies:	Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Private properties in the periphery of NYS DEC DP-22 (Great Swamp) and south of Little Pond are prone to impacts from flooding. There are limited resources available to develop structural flood control solutions in the Town. Less intensive flood mitigation measures can lessen damage through nonstructural projects. Impacted areas include, but are not limited to: • Stagecoach Road/Birch Hill Road • Lakeshore Drive near Valley Road • East Branch Road at Haviland Hollow Road • Fairfield Drive • Haviland Hollow Road	
Description of the Solution:	Promote and support non-structural flood hazard mitigation alternatives for at risk properties, 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.	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA HMA, NYS DEC, Town Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Town's current NFIP capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.

	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-PattersonT-05. Risk Reduction Initiative

Lead Agency:	Putnam County	
Supporting Agencies:	Town Staff	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.	

Description of the Solution:	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically:
	• Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation.
	• Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include:
	  • NFIP Community Rating System (CRS)
	  • Benefit-Cost Analysis (BCA)
	  • Substantial Damage Estimating (SDE)
	  • NFIP Elevation Certificates (EC)
	  • Certified Floodplain Manager (CFM) Training and Certification
	• County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures	

Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the Town's overall preparedness for emergency events, increase knowledge of the various hazards which can impact the Town, and inform staff of how to maintain eligibility for the NFIP. Providing an opportunity for staff and officials to become further educated on floodplain management practices and standards can aid in the development of plans and procedures in a way that is conscious of the flood hazard.	
Impact on Socially Vulnerable Populations:	Town staff will become familiar with how to assist displaced persons following an emergency event. Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where at risk populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
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 the wildfire hazard. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways to prepare for, plan for, and prevent interruptions in service as a result of a flood.	
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. Officials that attend trainings will have a more confident understanding of floodplain management principles and the basics of NFIP requirements and standards.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Take FEMA IS courses		Will increase knowledge, but the information is generalized and not county- or town-specific
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Action 2027-PattersonT-06. Continuity of Operations

Lead Agency:	Town Administration		
Supporting Agencies:	-		
Hazards of Concern:	☐Dam Failure ☒Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	Natural and man-made events can cause an interruption or loss of municipal services provided by Town Hall and Justice Court employees by forcing the closure of municipal facilities. Maintaining continuity of operations ensures that critical services provided by the Town are still available in the event of an emergency.		
Description of the Solution:	The Town will provide municipal office employees from Town Hall and Justice Court with the equipment required to work remotely. Further, the Town will develop a Continuity of Operations plan, with guidance from Putnam County, to ensure its operations can continue in the event of an emergency.		
Estimated Cost:	Medium		
Potential Funding Sources:	Town Budget, EMPG		
Implementation Timeline:	Within 3 years		
Goals Met:	2, 4		
Benefits:	Residents would continue to have access to municipal services during any periods of emergency.		
Impact on Socially Vulnerable Populations:	Programs for socially vulnerable populations which would otherwise be inaccessible during a closure of municipal facilities would remain available.		
Impact on Future Development:	Not applicable		
Impact on Critical Facilities/Lifelines:	While a critical facility may be impacted, the community lifeline would remain undisturbed as community programs and Town departments would continue to operate.		
Impact on Capabilities:	This action would permit capabilities to be expanded and include remote work possibilities.		
Climate Change Considerations:	Anticipated increases in frequency of severe storms may result in additional power outages or damage to critical facilities. Warmer temperatures can assist in the spread of diseases; tight working spaces can increase the spread of disease, especially respiratory illnesses.		
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☒High	☐Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Purchase standby generators	If the structure of either facility is impacted significantly, in-person operations would not be feasible	
	Institute full remote work	Town does not have the existing capabilities to support full-time remote work	

Action 2027-PattersonT-07. Putnam Lake Dam Rehab

Lead Agency:	Municipal Engineer		
Supporting Agencies:	County BES, NYS DEC		
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The Putnam Lake Dam is a Class I High Hazard Dam that is located on Putnam Lake. The dam is owned by the Town of Patterson. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including Lost Lake Drive, Fairfield Drive, among others. The failure of this dam would result in excess water to flow into Lost Lake, which is located downstream of Putnam Lake, and may cause cascading impacts to the south of Lost Lake. During the dam's last inspection in March 2024, it was found to be unsound, but in fair condition; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.		
Description of the Solution:	The Municipal Engineer will complete, or share, an engineering study of the Putnam Lake Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 4, 6		
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.		
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 at risk populations exists.		
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.		
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 and strengthen the structural integrity of dam, as needed.		
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.		
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.		
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)	
Priority	☒High	☐Medium	☐Low
Alternative	Action	Evaluation	
	No action	Current problem persists	

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PattersonT-08. Mountain Brook Dam Rehab

Lead Agency:	Dam Owners (Watchtower Bible and Tract Society of New York, Inc.)	
Supporting Agencies:	County BES, NYDEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Mountain Brook Dam is a Class I High Hazard Dam that is located on Mountain Brook. The dam is owned by the Watchtower Bible and Tract Society of New York, Inc. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including State Route 22, Watchtower Drive, Lopane Drive, among others. During the dam's last inspection in January 2025, it was not found to be deficient in any way.	
Description of the Solution:	The Municipal Engineer will encourage the Watchtower Bible and Tract Society of New York, Inc. to complete, or share, an engineering study of the Mountain Brook Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the Watchtower Bible and Tract Society of New York, Inc. in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PattersonT-09. Emergency Bypass Road

Lead Agency:	Town Engineer		
Supporting Agencies:	Town Highway, NYS DOT		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☒Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☐Wildfire	
Description of the Problem:	NYS Route 311 provides the main route between the fire /ambulance service and western areas of the Town. The route is bisected by the Metro North railroad line. Should an incident occur which obstructs the Route 311 crossing, the alternate route is approximately 8 miles or 18 minutes.		
Description of the Solution:	The Town will partner with NYS DOT to investigate the feasibility of the construction of a bypass road from Route 311 south to West Street.		
Estimated Cost:	Medium		
Potential Funding Sources:	Town Budget, NYS DOT, CDBG		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 4		
Benefits:	This action minimizes or prevents damage to structures and loss of life by increasing the ability of emergency services to respond more quickly.		
Impact on Socially Vulnerable Populations:	This action would permit first responders to respond to emergencies more promptly should there be an interruption along the original route for service.		
Impact on Future Development:	Future development would have an additional means of egress and a shorter response time for emergency services.		
Impact on Critical Facilities/Lifelines:	This action would improve the transportation and safety and security lifelines.		
Impact on Capabilities:	Completing this project would strengthen the Town's emergency responder's ability to respond to incidents.		
Climate Change Considerations:	Anticipated increase in the occurrence of heavy rains can exacerbate the risk of flooding, making travel on roadways treacherous. Extreme heat and/or cold has the potential to warp rail-lines making them dangerous to travel on and over.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Shutdown Metro North rail service	Interrupts modes of transport and transportation lifeline
	Outsource fire/ambulance service to neighboring municipalities	May overload capabilities

Action 2027-PattersonT-10. Fire Fighting Water Supply

Lead Agency:	Town Administration		
Supporting Agencies:	Local Fire Departments (Patterson #1, Patterson #2, Putnam Lake)		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☒Wildfire	
Description of the Problem:	In some cases, there is a deficiency in the quantity of water needed within a reasonable distance that may be used to fight a structure fire, or forest fire. Sourcing water from nearby waterbodies can alleviate the stress of finding an appropriate source in time of drought in order to fight a structure fire, forest fire, or wildfire. Since 2020, there have been two wildfires in the Town (“Fireside Court” with 0.2 acres burned and “Stagecoach Fire” with 3 acres burned).		
Description of the Solution:	Investigate the feasibility of installing dry hydrants into lakes and streams and underground storage tanks. Dry hydrants, when installed into lakes, streams, or other water bodies, and paired with underground storage tanks, can significantly improve wildfire mitigation by providing reliable, all-weather water access for firefighting operations.		
Estimated Cost:	Medium		
Potential Funding Sources:	USFA, Town Budget, FD Budget		
Implementation Timeline:	2 years		
Goals Met:	1, 4		
Benefits:	Emergency providers will be able to quickly begin fire suppression activities.		
Impact on Socially Vulnerable Populations:	This action will allow fire departments to perform fire suppression activities more quickly. Properties will be better supported by first response agencies.		
Impact on Future Development:	Future development will be better supported by first response agencies.		
Impact on Critical Facilities/Lifelines:	This action will benefit the safety and security lifeline.		
Impact on Capabilities:	This action will strengthen the capabilities of the Town.		
Climate Change Considerations:	Projected instances of drought and prolonged periods without substantial rain or ground saturation can spur wildfires by being used as wildfire fuel.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Install dry hydrants only to lakes	May limit water accessibility elsewhere in Town
	Purchase water buffalo	Costly, Town may not have proper equipment to support deployment

Table 8-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-PattersonT-01	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-PattersonT-02	Reduce HAB Occurrences	1	0	1	1	1	0	1	1	1	0	1	1	0	1	**10**	Medium
2027-PattersonT-03	Undersized Drainage	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-PattersonT-04	Localized Flood Reduction	1	1	1	1	1	0	0	1	1	1	1	1	0	1	**11**	High
2027-PattersonT-05	Risk Reduction Initiative	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2027-PattersonT-06	Continuity of Operations	1	0	1	1	1	0	0	1	1	1	1	1	1	1	**11**	High
2027-PattersonT-07	Putnam Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PattersonT-08	Mountain Brook Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PattersonT-09	Emergency Bypass Road	1	0	1	0	0	0	0	1	1	1	1	1	1	1	**9**	Medium
2027-PattersonT-10	Fire Fighting Water Supply	1	1	1	0	0	0	0	1	1	0	1	1	1	1	**9**	Medium

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

9. TOWN OF PHILIPSTOWN

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

9.1 HAZARD MITIGATION PLANNING TEAM

The Town of Philipstown identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments.

Table 9-1 summarizes the Town officials who participated in the development of the annex. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 9-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Tara K. Percacciolo, Town Clerk Address: 238 Main Street, Cold Spring, NY 10516 Phone Number: 845-265-3329 Email: townclerk@philipstown.com	Name/Title: Greg Wunner, Code Enforcement Officer and Fire Marshall Address: 238 Main Street, Cold Spring, NY 10516 Phone Number: 845-265-5202 Email: gwunner@philipstown.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Greg Wunner, Code Enforcement Officer and Fire Marshall Address: 238 Main Street, Cold Spring, NY 10516 Phone Number: 845-265-5202 Email: gwunner@philipstown.com	
Additional Contributors	
Name/Title: Ned Rauch, Councilperson Method of Participation: Provided pertinent information required to develop this annex.	

9.2 COMMUNITY PROFILE

9.2.1 Community Classifications

Table 9-2 summarizes classifications for community programs available to Philipstown.

Table 9-2. Community Classifications

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

Program	Participating? (Yes/No)	Classification	Date Classified
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	Yes	Registered	June 6, 2017
NYSERDA Clean Energy Community	Yes	5-Star	May 10, 2024
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

9.2.2 Community Profile

Established in 1788 as one of the three original towns in what is now Putnam County, Philipstown's main population centers are the Village of Cold Spring, the hamlet of Garrison, Continental Village, and the Village of Nelsonville. Today, the Town is governed by a town supervisor and a five-member town board.

Table 9-3 through Table 9-6 note land area, population, and building stock information for the Town of Philipstown.

Table 9-3. Total Land Area in the Town of Philipstown

Jurisdiction	Total Land Area	
	Acres	Square Miles
Philipstown (T)	30,271.8	47.3

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 9-4. Population Estimates in the Town of Philipstown

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
7,221	7.4%	7,302	7.4%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population
Note: Cold Spring (V) is 100% within Philipstown (T); Nelsonville (V) is 100% within Philipstown (T). Subtracted village totals from town to assign correct town totals.

Table 9-5. Vulnerable Populations in the Town of Philipstown

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
1,763	24.1%	258	3.5%	24	0.3%	747	10.2%	536	7.3%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Note: Cold Spring (V) is 100% within Philipstown (T); Nelsonville (V) is 100% within Philipstown (T). Subtracted village totals from town to assign correct town totals.

Table 9-6. General Building Stock in the Town of Philipstown

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
4,049	$2,634,231,865	2,806	$1,519,769,749	1,144	$806,090,990	12	$20,265,215	87	$288,105,911

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

9.3 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 Philipstown's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

9.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Philipstown are shown in Figure 9-1 and Figure 9-2. 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 Philipstown has significant exposure.

Figure 9-1. Philipstown Hazard Area Map #1

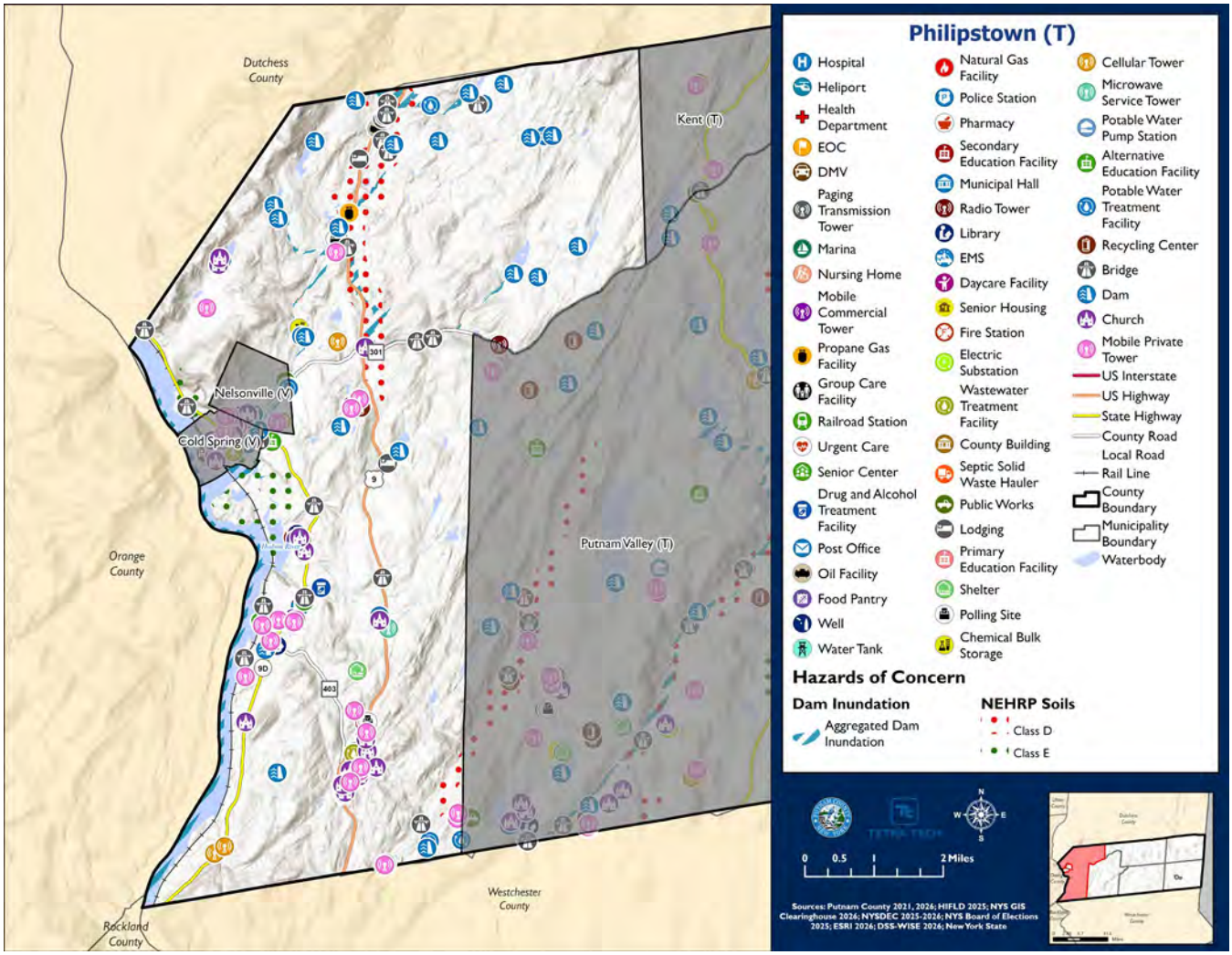
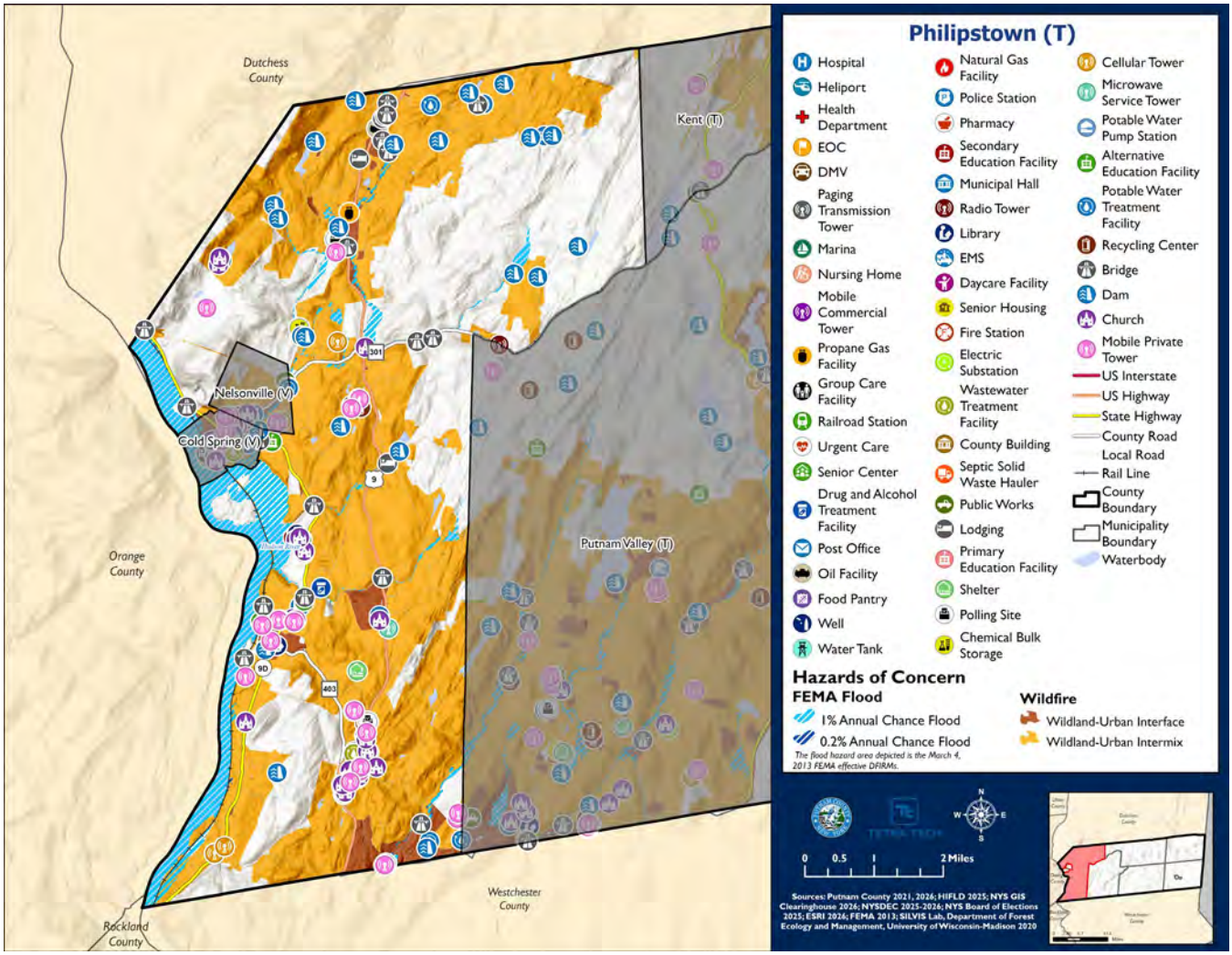


Figure 9-2. Philipstown Hazard Area Map #2



9.3.2 Previous Event History

The history of natural and non-natural hazard events in Philipstown is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9-7 and Table 9-8 provide details on the loss and damage in Philipstown during hazard events since the last hazard mitigation plan update.

Table 9-7. Presidential Disaster Declarations History in Philipstown

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Philipstown
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	Adhered to masking and social distancing mandates.
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	No damages or losses incurred.

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Philipstown
August 21-24, 2021	EM-3565-NY	Hurricane Henri	No damages or losses incurred.
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	No damages or losses incurred.
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	No damages or losses incurred.

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 9-8. Hazard Event History in Philipstown

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Philipstown
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	No damages or losses incurred.
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	No damages or losses incurred.
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	No damages or losses incurred.
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No damages or losses incurred.
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	No damages or losses incurred.
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	No damages or losses incurred.
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	No damages or losses incurred.

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

9.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 9-9 includes an inventory of critical facilities and infrastructure for the Town of Philipstown.

Table 9-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Foundry Brook Water Treatment Plant	Chemical Bulk Storage	Y	Y	2027-PhilipstownT-01	-
North Highlands Fire Department	Fire Station	N	Y	2027-PhilipstownT-01	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Ten bridges and two dams were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

9.3.4 Local Hazard Impacts Assessment

Representatives from the Town of Philipstown Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 9-10.

Table 9-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	No known impacts, but there is a plan underway to replace a dam owned by the Walter Hoving Home, on Avery Road, in Garrison. That project is expected to reduce flooding from 1- and 2-year storms, but is unlikely to significantly reduce flooding caused by 10- and 100-year storms.
Disease Outbreak	No known impacts
Drought	Private well water in the Town and Village of Nelsonville. Cold Spring has a water system.
Earthquake	No known impacts
Extreme Temperatures	No known impacts
Flood	Flooding following major storms has damaged homes throughout the town. In communities near the Hudson River, “king tides” have flooded streets and homes, particularly in the Manitou Station neighborhood, at Garrison’s Landing, and on West, North, and New Streets in Cold Spring. And major storms have damaged roads, including Upper and Lower Station Roads in Garrison, and flooded the tunnels in Garrison and Cold Spring that allow pedestrians to cross from one side of the trainline to the other.
Harmful Algal Blooms	No known impacts

Hazard Name	Local Impacts: People, Community Services, Local Economy
Severe Storm	Severe storms have felled trees and toppled power lines. Severe storms have caused significant damage to the town's dirt roads: South Mountain Pass, Old West Point Road, Old Albany Post Road, Lane Gate Road, Philipse Brook Road, Indian Brook Road, East Mountain Road, among them.
Severe Winter Storm	Road closures following heavy snowfall until roads are cleared.
Terrorism	No known impacts
Wildfire	No known impacts

9.3.5 Vulnerable Community Assets

Representatives from the Town of Philipstown Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 9-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 9-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	No known impacts	**Area: Concentration of Local Businesses, Major Employers**	No known impacts
Area: Concentration of Residences	No known impacts	**Local Roads, Highways, Culverts, Bridges**	Culverts may be undersized
Municipal Buildings	No known impacts	**Medical Centers (non-hospital)**	No known impacts
College/University	Not applicable	**Place of Worship**	No known impacts
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	No known impacts	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	No known impacts
Cultural/Historic Buildings/Sites	No known impacts	**Schools (K-12)**	No known impacts
Elder-care Facilities	No known impacts	**Utilities**	No known impacts
Fire/Police Stations	No known impacts	**Wastewater Treatment Plants**	No known impacts
Gas Stations, Grocery Stores, Supermarkets	No known impacts	**Water: Drinking Water Resources**	Micro district for about 15-20 properties. There are some challenges that are currently being resolved. Town is connecting people to water mains.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Hospitals	Not applicable	**Other**	No known impacts

9.3.6 Dams

Table 9-12 includes all dams in the Town of Philipstown. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 9-12. Dams Located in Philipstown

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-0451	Sloan Dam	TR-HUDSON RIVER	SAMUEL SLOAN	N/A	Recreation	Low Hazard Dam
213-0506	Foundry Brook Dam	FOUNDRY BROOK	VILLAGE OF COLD SPRING	Local Government	Water Supply - Primary	Low Hazard Dam
213-2704	Evelina Perkins Pond Dam	TR-CLOVE CREEK	EVELINA B PERKINS	N/A	Recreation	Low Hazard Dam
213-4116	Jordan Pond Dam	CLOVE CREEK	OPEN SPACE INSTITUTE	Private	Recreation	Low Hazard Dam
213-0777	Perkins Estate Pond Dam	CLOVE CREEK	OPEN SPACE INSTITUTE, Glynwood	Private	Recreation	High Hazard Dam
213-0801	Lake Valhalla Dam	TR-CLOVE CREEK	Valhalla Highlands Association, Inc.	Private	Recreation	Intermediate Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-0871	Cargill Reservoir Dam	CARGILL BROOK	CITY OF BEACON	Local Government	Water Supply - Primary	High Hazard Dam
213-0953	East Mountain Lake Dam	TROUT CREEK	Roy Leonard	Private	Recreation	Low Hazard Dam
213-1004A	Cold Spring Dam (upper)	FOUNDRY BROOK	VILLAGE OF COLD SPRING	Local Government	Water Supply - Primary	High Hazard Dam
213-1004B	Cold Spring Dam (lower)	FOUNDRY BROOK	VILLAGE OF COLD SPRING	Local Government	Water Supply - Primary	High Hazard Dam
213-1884	David Ulmar Pond Dam	TR-CLOVE CREEK	DAVID ULMAR	N/A	Recreation	Low Hazard Dam
213-4396	Lake Surprise Dam	BREAKNECK BROOK TR-HUDSON	SURPRISE LAKE CAMP	Private	Recreation	Low Hazard Dam
213-4453	Loch Lyall Dam	INDIAN BROOK	Amor Towles	Private	Recreation	Intermediate Hazard Dam
213-5030	Colt Estate Dam	TR-HUDSON RIVER	CLOUDBANK LAKE LLC	Private	Recreation	Intermediate Hazard Dam
213-5176	Weise Pond Dam	TR-SAND SPRING BROOK	S.I. KREPS	N/A	Recreation	Low Hazard Dam
213-5810	CONTINENTAL VILLAGE DAM	Trib - Spout Brook	Putnam County Department of Public Works	Local Government	Recreation	Intermediate Hazard Dam
213-5839	TROUT BROOK LAKE DAM	-	WICCOPEE WOOD INC	Private	Recreation	Low Hazard Dam
213-5872	Laths Pond Dam	Trib Hudson River	Benjamin F Crane	Private	Recreation	Low Hazard Dam
213-5865	Downey Pond Dam	Trib - Clove Creek	Lawrence J. Downey	Private	Other	Hazard Classification Not Assigned
213-6037	Frederick W Cook Dam	Tributary to Philips Brook	Hudson Valley Shakespeare Festival	Private	Irrigation	Intermediate Hazard Dam

Information about dam risk in the Town is noted in the grey box below.

The Walter Hoving Home, on Avery Road, is in the process of planning a replacement of its dam of Philipse Brook. This site has experienced flooding in the past. The proposed work would reduce the flooding impacts on neighboring residences during 1- and 2-year storms and flooding events. Major storms and floods, those described as 10-year and 100-year storms, would still affect neighboring properties.

9.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 9-13 identifies the preliminary hazard ranking for Philipstown, whether the Town agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 9-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	Medium	A sinkhole in a dam nearly failed. The dam is privately owned. Perkins Estate Pond Dam. Town was able to lower the water level and avoided any issues.	Medium
Disease Outbreak	Medium	Agree	-	-	Medium
Drought	High	Disagree	Medium	The whole Town is on Well Water.	Medium
Earthquake	Low	Agree	-	-	Low
Extreme Temperatures	Medium	Agree	-	-	Medium
Flood	Medium	Disagree	High	Recent flooding events have greatly impacted the Town.	High
Harmful Algal Blooms	Low	Agree	-	-	Loe
Severe Storm	High	Agree	-	-	High
Severe Winter Storm	High	Agree	-	-	High
Terrorism	Low	Agree	-	-	Low
Wildfire	Medium	Agree	-	-	Medium

9.4 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 through Table 9-17.

9.4.1 Development and Permitting

Table 9-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Town Building Department issues building permits. When needed, permit applications may be referred to the Town Planning Board, the Town Conservation Board, or the Town Zoning Board of Appeals.
What is your process for tracking building permits?	The Building Department keeps these records.
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes, most of floodplains occur to adjacent wetland. Overlap with the conservation board
Does your community have a buildable land inventory? If yes, please describe.	No, Approximately 53% of the Town is preserved open space.

Table 9-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	8	0	0	8
Permits within SFHA	0	0	0	0
2021				
Total Permits	4	0	1	5
Permits within SFHA	0	0	0	0
2022				
Total Permits	6	0	0	6
Permits within SFHA	0	0	0	0
2023				
Total Permits	3	0	2	5
Permits within SFHA	0	0	0	0
2024				
Total Permits	2	0	2	4
Permits within SFHA	0	0	0	0
2025				
Total Permits	3	0	0	3
Permits within SFHA	0	0	0	0

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

Table 9-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
The Town did not indicate any recent major development and infrastructure from 2020 to present					

Table 9-17. 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 Zones*	Description / Status of Development
Hudson Highlands Fjord Trail	Hudson Highlands Fjord Trail	N/A	Proposed alongside Hudson River from Cold Spring north to Beacon		Proposed alongside Hudson River from Cold Spring north to Beacon
Hudson Valley Shakespeare	Theater with associated restaurant and artist housing.	32	Intersection of Route 9 and Snake Hill Road		Theater is complete. Housing units still under construction.
Hudson Highlands Reserve	Residential	25 lot residential subdivision	East side of Route 9 near East Mountain Road.		Permitting process still underway.

9.5 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 9-1 is responsible for maintaining this information.

9.5.1 NFIP Statistics

Table 9-18 summarizes the NFIP policy and claim statistics for the Town of Philipstown.

Table 9-18. Philipstown NFIP Summary of Policy and Claim Statistics

NFIP Community Number	361026#
FEMA 2020 NFIP Data	
# Policies	72
# Claims (Losses)	47
Total Losses Claimed	$1,119,896
# Repetitive Loss Properties (NFIP definition)	13
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	2
Repetitive Loss Events	1
Net Building Payment	$6,445

Net Contents Payment	$0.00
Total Net Payment	$6,445

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 2020, 2026

Note: "-" = information unavailable

9.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 9-19.

Table 9-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Flooding occurs in pockets throughout the community. In Cold Spring, properties near Back Brook, including several on Cedar Street, have flooded following heavy rains. Several areas in Nelsonville are also prone to flooding. At lower elevations, homes and properties on Market, New, West, Main, and North Streets have flooded, both due to rain and tidal surges. In Garrison, flooding has occurred at Garrison's Landing, in the pedestrian underpasses that run beneath the train tracks. Flooding has also occurred near Manitou Station.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	Code Enforcement Officer
What local department is responsible for floodplain management?	The Town Board of the Town of Philipstown shall appoint by resolution the "Floodplain Administrator, " as the Local Administrator to administer and enforce this Chapter by granting or denying floodplain development permits and citing in writing any non-compliances in accordance with its provisions.
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #2 of 2012
What is the date that your flood damage prevention ordinance was last amended?	November 27, 2012
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 4, 2013

NFIP Topic	Comments
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Permit review
What are the barriers to running an effective NFIP program in your community, if any?	Staff, funding
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	Training would be appreciated
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	Yes – not many
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	Not many
Does the community maintain elevation records? If yes, please describe.	No
Describe any areas of flood risk with limited NFIP policy coverage.	Portions of Nelsonville and Cold Spring
How does the community teach property owners or other stakeholders about the importance of flood insurance?	No
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	FEMA Map Service Center
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?	MS4, site plan, stormwater code, stormwater management plan, flood zoning overlay.

9.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Philipstown 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 Philipstown to identify opportunities for integrating mitigation concepts into ongoing Town procedures.

9.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 9-20 and Table 9-21 detail the available planning and regulatory capabilities of the Town.

Regulatory Capabilities

Table 9-20. Regulatory Capabilities in Philipstown

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	Chapter 62 in Town Codes. NYS Uniform and Energy Code 2020; Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code Council (the “2015 I-Codes”), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017).. Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of	NYS Uniform and Energy Code	Code Enforcement

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries.		
Climate Change Ordinance	Yes	The environmental conservation law was amended by adding ARTICLE 75 - CLIMATE CHANGE under Assembly Bill A. 8429 and Senate Bill S. 6599, dated June 18, 2019.The Town participates in the Climate Smart Initiative.	NYS Executive Law, Article 75	Town Board
Emergency Management Ordinance	No	-	-	-
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019	Title 6 NYCRR Part 617	Conservation Board/natural resources officer
Flood Damage Prevention Ordinance	Yes	It is the purpose of this Chapter to; A. To protect human life and health; B. To minimize expenditure of public money for costly flood-control projects; C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; D. To minimize prolonged business interruptions; E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, sewer lines, streets and bridges located in areas of special flood hazard; F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; G. To provide that developers are notified that property is in an area of special flood hazard; and H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.	Chapter 90 Chapter 90-16 & 90-17 State mandated BFE+2 for new construction and substantial improvements	Code Enforcement
Growth Management	Yes	In New York State, virtually all land use regulation, which is the primarily tool for Smart Growth, takes place at the municipal level (i.e., in a city, village or town government). Land use planning is also primarily a municipal function. While State law provides for certain planning functions at the county or regional level, these mechanisms are largely advisory, whereas municipal planning is directly related to land use regulation.	October 20,2006	Town Board
Municipal Separate Storm Sewer System (MS4)	Yes	This requires urbanized areas (local governments) to develop a stormwater management program that will reduce the amount of pollutants carried by stormwater during storm events to waterbodies to the	EPA Phase II Stormwater Rule; Chapter 93	Max Garfinkel Conservation Board/natural resources officer

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		"maximum extent practicable". The goal of the program is to improve water quality and recreational use of waterways. A Municipal Separate Storm Sewer Systems Permit, GP-0-15-003 is required.		
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	-	-	-
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a)The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc.	General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a	Local Planning Board
Stormwater Management Code	Yes	The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction.	Title 6, Ch. X,17-7,8,70	SMO
Subdivision Code	Yes	Subdivision is defined in the State enabling Statutes as: the division of any parcel of land into a number of lots, blocks, or sites as specified i a local ordinance, law or regulation, with or without streets or highways, for the purpose of sale, transfer of ownership, or development. There is not a requirement by NYS for subdivisions. Each municipality is permitted to further define subdivision for its own purposes in connection with its subdivision review procedure. The enabling statutes provide that a plat showing a division of land which is subject to a municipality's subdivision regulations, may not also be subject to review under its site plan review authority. (general	Chapter 112	Planning Board

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		city law s. 32 & 33, Town Law s. 276 & 277, Village Law s. 7-728 & 7-730).		
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	This Zoning Law enables Philipstown to protect the diverse "character" of the Town while also giving landowners a range of options and choices for the use, development, and conservation of their land. It is designed to achieve the community's goals as expressed in the Town's Comprehensive Plan while respecting the property interests of landowners. This chapter regulates the location, design, construction, alteration occupancy, and use of structures and the use of land in the Town of Philipstown, dividing the Town into land use districts.	Chapter 175	Code Enforcement

Planning Capabilities

Table 9-21. Planning Capabilities in Philipstown

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	The Comprehensive Plan is a shared vision for the community's future; it blends the issues, challenges, and options facing the Town. It is Philipstown's response to the challenge of fostering economic development and a mixture of housing that is sensitive to its natural resources and the character of the community. As in the past, it relies on the strength and support of the community to make it a success. The goals of the Plan include to; Conserve Philipstown's rural, historic and river-community character, Expand recreational opportunities to offer a wider variety and greater capacity to meet current and future demand, Protect Philipstown's natural resources, Improve safety and aesthetics of roads, Locate new development where it can	Adopted March 9, 2006	Town Board

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		be supported by existing infrastructure, and develop new infrastructure only where it is supportive of the Town's development and conservation goals, Revise land use regulations to implement the Comprehensive Plan and streamline the land use approval and enforcement process.		
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	No	-	-	-
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B. The plan is developed and maintained by the New York State Office of Emergency Management and agencies that comprise the NYS Disaster Preparedness Commission (DPC)	PCBES; Multiple Plans (Haz-Mat, CEMP); January 2020	BES
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	No	-	-	-
Habitat Conservation / Wildlife Management Plan	Yes	Identifying certain critical habitat areas could be included in the Comprehensive Plan. Critical Habitat is a part of certain State and Federal Permitting. The State had a Wildlife Action Plan requires to maintain eligibility for the State Wildlife Grant Program.	March 9, 2006	Town Board
Local Waterfront Revitalization Plan	No	-	-	-
Open Space Plan	Yes	The purpose of this plan is to establish and guide an efficient and effective way to protect and manage Philipstown's natural resources according to the goals of the Philipstown Comprehensive Plan. The goal of this plan is to insure that our natural resources continue to be viable and sustainable, serving as the foundation for a healthy and thriving Philipstown. The Plan covers all of the Town of Philipstown, excluding the Villages of Cold Spring and Nelsonville.	March 9, 2006	Town Board

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	Yes	The 2025 Mid-Hudson Valley Regional Community Health Assessment (CHA) provides a comprehensive overview of the health status, needs, and priorities across the seven Mid-Hudson counties. The Community Health Assessment (CHA) is a descriptive summary of a population, its health status, and the distribution of health issues and the factors that impact health. It identifies the population's main health issues and their determinants and summarizes the assets and resources that can be mobilized to address the issues identified. The findings of the CHA inform the collaborative development of the Community Health Improvement Plan (CHIP). The Putnam County 2025-2030 Community Health Improvement Plan covers Putnam County, New York. The community health improvement plan (or CHIP) is a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. In formulating the Putnam County Community Health Improvement Plan (CHIP) 2025—2030, the Putnam County Department of Health (PCDOH) has identified three priorities to be addressed from the New York State Department of Health's Prevention Agenda 2025—2030. They are Poverty, Anxiety and Stress, and Preventive Services.	Multiple Plans; Chapter 10.04 of Putnam County Charter	PC Department of Health
Sheltering Plan	No	In the case of a hazard event, Philipstown's schools, fire department, and recreation center may be able to be used as sheltering.	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	Element of Comprehensive Plan	Adopted March 9, 2006	Town Board
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

9.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 9-22 details the available administrative and technical capabilities of the Town.

Table 9-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	No	Contracted as needed
Construction/Building/Code Enforcement Department	Yes	Issues permits and performs NFIP administrative duties
Economic Development Commission/Committee	No	-
Emergency Management/Public Safety Department	No	-
Environmental Commission/Specialist	No	-
Grant Writer	No	-
Maintenance Programs to Reduce Risk	Yes	Highway Department- tree cutting, storm drain maintenance
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	County
Open Space Board/Committee	Yes	Conservation Board
Personnel skilled or trained in website development	Yes	Clerk
Planning Board	Yes	Under the Town Law, the Philipstown Planning Board has certain duties and responsibilities, such as to prepare and adopt the Master Plan, approve plats and make reports and recommendations to the Town Board as requested.
Planning Department	No	-
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	Code Enforcement

Capability Type	In Place in Municipality? Yes or No	Comments
Planner or Engineer with knowledge of land development and land management practices	No	Town Engineer (Consulting)
Planners or engineers with an understanding of natural hazards	No	-
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	No	Consulting as needed
Professionals trained in conducting damage assessments	Yes	CEDAR- group of data collectors (State) that are primarily code enforcement that go from area to area to assess water reach (“windshield inspections”)—not sure if deployed to Philipstown. Most comes through emergency services
Public Works/Highway Department	Yes	Highway Department
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	Yes	Code Enforcement
Surveyor(s)	No	-
Zoning Board of Appeals	Yes	This board handles variance requests.
Other	No	-

9.6.3 Fiscal Capability

Table 9-23 summarizes financial resources available to Philipstown.

Table 9-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement project funding	No
Authority to levy taxes for specific purposes	Sometimes, Town Board
User fees for water, sewer, gas, or electric service	The Town is in the process of establishing a metered water district for a small number of residents near and on Garrison’s Landing.
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal (non-FEMA) funding programs	No
FEMA funding programs	No
Other State funding programs	No
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

9.6.4 Education and Outreach Capability

Table 9-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 9-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	No
Hazard awareness campaigns, such as school and community programs and events	Yes, the town and village have outreach initiatives with these organizations.
Hazard mitigation information available on your website	Yes, usually in Cold Spring. Also have municipal channel where info is posted
Local News	Yes, there is an active relationship with local media, though the number of media outlets is dwindling. Five years ago Philipstown was home to two local papers. Today, just one: the Highlands Current.
Natural disaster/safety programs in place for schools	Yes, fire department/prevention week; fire drills; school shooting drills; each school has IP evacuation plan
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes, the Philipstown DEIA Committee and Philipstown Aging At Home.
Public information officer or communications office	No
Social media for hazard mitigation education and outreach	No
Warning systems for hazard events	Yes, Indian Point Sirens

9.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 9-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 9-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperatures	Moderate
Flood	Weak
Harmful Algal Blooms	Unknown
Severe Storm	Moderate to weak
Severe Winter Storm	Moderate
Terrorism	Moderate
Wildfire	Moderate

9.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

9.7.1 Past Mitigation Action Status

The tables below indicate progress on the Town's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

T. Philipstown-1—Brookside and Valley Lane Mitigation	
Hazards Addressed	Flood
Lead Agency / Department	Town of Philipstown Highway Department
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Brookside and Valley Lane are located at the base of a steep mountain next to Sprout Brook Creek. During a rain event stormwater floods streets and homes. Existed since 1940's. Homes are flood damaged. Repetitive loss through NFIP.
Summary of Solution (Project)	Using best management practices provide retention/detention of stormwater, re-contour slope, restore seasonal intermittent drainage steams, replace bridge at Sproutbrook Road
Action Category	SIP, SP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Merge with repetitive loss action and floodprone areas
If discontinue, explain why	Not applicable

T. Philipstown-2—Barret Pond and Fishkill Road	
Hazards Addressed	Flood
Lead Agency / Department	Town of Philipstown
Supporting Agency / Department	Code Enforcement Officer
Action Location	-
Summary of Original Problem	Barret Pond discharges under a home. During a rain event the stormwater floods four homes creating repetitive losses. Existed since developed 1905's.
Summary of Solution (Project)	Using best management practices provide retention/detention of stormwater, re-contour slope, re-pipe to county basin; or acquisition
Action Category	SIP, SP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Merge with repetitive loss action and floodprone areas
If discontinue, explain why	Not applicable

T. Philipstown-3—Philips Brook Bridge	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Philipstown
Supporting Agency / Department	Code Enforcement Officer
Action Location	-
Summary of Original Problem	During a heavy rain event the Philips Brook Creek bypasses the bridge on Philipsbrook Road causing severe erosion to the road.
Summary of Solution (Project)	Replace bridge
Action Category	SIP, SP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Philipstown-4—Avery Road and Snake Hill Road	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town Highway Department
Supporting Agency / Department	Town of Philipstown, Code Enforcement Officer Possible support from SWCD or NRCS
Action Location	-
Summary of Original Problem	During a heavy rain event Philips Brook creek damages the home at 7 Avery Road. The bridge over Philips Brook Road is narrow causing flood water to back up and over Avery Road causing damage to the home at 7 Avery Road and severe erosion along Snake Hill
Summary of Solution (Project)	Replace the Avery Road Bridge over Philips Brook Creek, repair stone wall banks of creek approximately 800 feet. remove silt, gravel and debris from retention ponds
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Project complete

T. Philipstown-5—Indian Brook and Bird/Bottle Inn	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Philipstown
Supporting Agency / Department	Code Enforcement Officer
Action Location	-
Summary of Original Problem	During a heavy rain events Indian brook creek floods over its banks eroding Indian Brook Road, flooding over the bridge on Old Albany Post Road and damaging the Bird and Bottle Inn. Has existed since the 1700's.
Summary of Solution (Project)	Using best management practices replace the bridge on Old Albany Post Road and amour the banks of Indian Brook Creek from Old Albany Post Road upstream 400 feet.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Project complete

T. Philipstown-6—147 Hustis Road	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Philipstown
Supporting Agency / Department	Code Enforcement Officer
Action Location	-
Summary of Original Problem	During a heavy rain event stormwater backups behind 147 Hustis Road redirecting the stormwater away from the existing storm sewer. This has existed for several years and is caused by storm debris from the forest and a berm.
Summary of Solution (Project)	Cleaning and restoring the drainage channels for 800 feet. Removing any rock and soil obstacles
Action Category	NSP, NR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Merge into larger culvert/drainage action
If discontinue, explain why	Not applicable

T. Philipstown-7—1143 Old Albany Post Road	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Philipstown
Supporting Agency / Department	Code Enforcement Officer
Action Location	-
Summary of Original Problem	During a heavy rain event, stormwater emanates from the steep mountain slope to alongside Old Albany Post Road crosses the road and inundates 1143 Old Albany Post Road. Existed since the road was constructed 1700's.
Summary of Solution (Project)	Using best management practices provide stone and grassy swale and pipe to Philips Brook Creek
Action Category	SP, NSP, SP, NR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Merge with repetitive loss action and floodprone areas
If discontinue, explain why	Not applicable

T. Philipstown-8—Promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town NFIP FPA
Supporting Agency / Department	support from NYS DHSES and FEMA
Action Location	-
Summary of Original Problem	There are limited resources available to develop structural flood control solutions in the Town. Less intensive flood mitigation measures can lessen damage through nonstructural projects.
Summary of Solution (Project)	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), 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. Specifically identified are properties in the following areas: • Valley Lane, Garrison • Sprout Brook Road, Garrison • Brookside Road, Garrison • Fishkill Road
Action Category	LPR, PR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Update RL property numbers/locations as possible
If discontinue, explain why	Not applicable

T. Philipstown-9—Work with NYSDEC and FEMA to address NFIP Floodplain Mapping issues at Ashley Lane and Route 301	
Hazards Addressed	Flood
Lead Agency / Department	Town NFIP FPA
Supporting Agency / Department	NYSDEC, FEMA
Action Location	-
Summary of Original Problem	The vicinity of Ashely Lane and Route 301 may be incorrectly mapped on the effective Flood Insurance Rate Map, leading to a potential misrepresentation of flood risk.
Summary of Solution (Project)	Work with NYSDEC and FEMA to address NFIP Floodplain Mapping issues at Ashley Lane and Route 301
Action Category	EAP, PR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Philipstown-10— Improve emergency management, response and recovery capabilities through the following activities:	
Hazards Addressed	All Hazards
Lead Agency / Department	Emergency Management Coordinator
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Emergency management in the Town can be improved through citizen training and staff training initiatives.
Summary of Solution (Project)	Improve emergency management, response and recovery capabilities through the following activities: •Encourage all municipalities and relevant staff to get E900/901 training. •Assist with the establishment of county wide CERT (Community Emergency Response Teams) teams; specifically with 2-3 CERT teams east and west of the Parkway.
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Combine with Action T. Philipstown-11
If discontinue, explain why	Not applicable

T. Philipstown-11—Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	supported by relevant local department leads
Action Location	-
Summary of Original Problem	Enhancements and capacity building are needed to advance professional development and local officials' education about flooding and other hazards. Municipal officials reported being unaware of repetitive loss properties in their jurisdictions and their locations. This hinders the provision of technical services, mitigation, and emergency services to property owners and residents.
Summary of Solution (Project)	Request and acquire NFIP policy data from FEMA, including repetitive loss information, to distribute to municipalities to support floodplain administration. Facilitate Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, anticipated to include based on municipal and county interest: • NFIP Community Rating System (CRS) • Benefit-Cost Analysis (BCA) • Substantial Damage Estimating (SDE) • NFIP Elevation Certificates (EC) • Certified Floodplain Manager (CFM) Training and Certification
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Combine with Action T. Philipstown-10
If discontinue, explain why	Not applicable

T. Philipstown-12—Upper and Lower Cold Spring Dam improvements	
Hazards Addressed	Flood, Dam Failure, Wildfire
Lead Agency / Department	Town of Philipstown
Supporting Agency / Department	NYSDEC, Village of Cold Spring
Action Location	-
Summary of Original Problem	The Upper and Lower Cold Spring Dams are classified as Class C "high hazard" dams. •The Upper Cold Spring Dam was originally constructed to impound water for the West Point Foundry and was purchased by the Village of Cold Spring in 1925 to provide additional water supply, which is it still used for. Downstream impacts from dam failure include the Lower Cold Spring Dam, and mostly wooded areas, with some residential and commercial properties, plus Town, County, and State Roads. •The Lower Cold Spring Dam was originally constructed to impound water for the West Point Foundry and was purchased by the Village of Cold Spring in 1925 to provide additional water supply, which is it still used for. Upstream impacts from failure include the Upper Cold Spring Dam, while downstream impacts include mostly wooded areas, with some residential and commercial properties, plus Town, County, and State Roads. The North Highlands Fire Department, the Village of Nelsonville downtown area, and residential and commercial areas in the Village of Cold Spring are within the inundation areas of these dams.
Summary of Solution (Project)	The Town of Philipstown will collaborate with the NYSDEC and dam owners (Village of Cold Spring) to address the unsafe spillway capacities of the dams to reduce risk to properties and from natural hazards that can cause increased risk from dam failure, including wildfires due to the forested location surrounding these dams.
Action Category	LPR, SIP, PR, SP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Separate into individual actions for each HHPD
If discontinue, explain why	Not applicable

9.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Town of Philipstown identified the following mitigation efforts completed since the last HMP:

- The Town has addressed a water-access crisis for residents on and near Garrison's Landing by installing the infrastructure needed for a new water district. The metered system will be activated in the near future.
- Several sections of dirt roads that are perpetually washed out in heavy storms have and are being paved. These include portions of South Mountain Pass, Lane Gate Road, and East Mountain Road.
- The Town in the midst of mapping it Storm Water Runoff and Management Systems.

9.7.3 Identified Issues

The Town of Philipstown has identified the following vulnerabilities within their community for mitigation strategy development:

- The Foundry Brook Water Treatment Plant and North Highlands Fire Department are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.
- The Philips Brook Dam has suffered extensive damage from storms and leaks, posing a flood risk to downstream properties. There is a project planned to remove the Philips Brook Dam owned by the Walter Hoving Home, on Avery Road, in Garrison. The project is expected to reduce or remove flood risk to otherwise properties.
- Flooding following major storms has damaged homes throughout the Town. In communities near the Hudson River, “king tides” have flooded streets and homes, particularly in the Manitou Station neighborhood, at Garrison’s Landing, and on West, North, and New Streets in Cold Spring. And major storms have damaged roads, including Upper and Lower Station Roads in Garrison, and flooded the tunnels in Garrison and Cold Spring that allow pedestrians to cross from one side of the train line to the other. The Town is aware of properties on Fishkill Road which have repetitively flooded from Barrett Pond, which discharges underneath a structure; locations on Brookside and Valley Lane, which are at the base of a steep mountain next to Sprout Brook Creek; a property on Old Albany Post Road which floods from heavy rains traversing the steep mountain slope along Philips Brook Creek; and Philipsbrook Road flooding from the Philips Brook Creek and eroding the bridge.
- Potable water in the Town is primarily available through private wells. Private well owners and operators may not be informed of the proper maintenance and/or upkeep of the wells. Educating private well owners can ensure that potable water is still available from their wells during periods of drought or extreme heat.
- Severe storms and winter storms have felled trees and toppled power lines. Severe storms and winter storms have caused significant damage to the Town’s dirt roads: South Mountain Pass, Old West Point Road, Old Albany Post Road, Lane Gate Road, Philipse Brook Road, Indian Brook Road, East Mountain Road, among them.
- The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.
- The Town does not have a developed Community Wildfire Protection Plan (CWPP). The CWPP identifies local wildfire threats and actions which can be taken to mitigate risks to life and property. Since 2020, three wildfires have occurred in the Town (“Defiance Road Fire” 41 acres burned; “Garrison Train Station Fire” 1.5 acres burned; “Ironstone” 3 acres burned).
- There are limited resources available to develop structural flood control solutions in the Town. Less intensive flood mitigation measures can lessen damage through nonstructural projects. According to data received from FEMA, there are 13 repetitive loss properties in the Town. The Town is aware of properties on Fishkill Road which have repetitively flooded from Barrett Pond, which discharges underneath a structure; locations on Brookside and Valley Lane, which are at the base of a steep mountain next to Sprout Brook Creek; and a property on Old Albany Post Road which floods from heavy rains traversing the steep mountain slope along Philips Brook Creek.
- The Perkins Estate Pond Dam is a Class I High Hazard Dam that is located on Clove Creek. The dam is owned by the Open Space Institute. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including State Routes 301 and 9, Briars

Road, Cross Creek Road, Torchia Road, among others. During the dam's last inspection in March 2025, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.

- The Cargill Reservoir Dam is a Class I High Hazard Dam that is located on Cargill Brook. The dam is owned by the City of Beacon in Dutchess County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including State Route 9, East Mountain Road North, Esselborne Road, among others. During the dam's last inspection in July 2024, it was found to be deficiently maintained; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- The Cold Spring Dam (upper) is a Class I High Hazard Dam that is located on Foundry Brook. The dam is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, among others. Impacts from a failure at the Cold Spring Dam (upper) could trigger a failure at the Cold Spring Dam (lower) due to the increased pressure from building water – these impacts would flood downstream into Lake Surprise, inundating the recreational area. During the dam's last inspection in January 2025, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- The Cold Spring Dam (lower) is a Class I High Hazard Dam that is located on Foundry Brook. The dam is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, among others. Impacts from a failure at the Cold Spring Dam (upper) would escalate any impacts already felt by a failure at the Cold Spring Dam (lower) – these impacts would flood downstream into Lake Surprise, inundating the recreational area. During the dam's last inspection in July 2024, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. There are several culverts which are undersized or have been damaged from instances of flooding and the debris caused by severe storms and severe winter winters, including a known repetitively back-up area from debris behind Hustis Road.

9.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Philipstown participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Philipstown 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 Town priorities.

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 9-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-PhilipstownT-01. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Foundry Brook Water Treatment Plant and North Highlands Fire Department are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.	
Description of the Solution:	The Town will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s).	
Estimated Cost:	Low	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of several critical facilities in the Town.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Relocate facilities	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-PhilipstownT-02. Philips Brook Dam Mitigation

Lead Agency:	Walter Hoving Home	
Supporting Agencies:	Town Engineer, Town Board	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Philips Brook Dam has suffered extensive damage from storms and leaks, posing a flood risk to downstream properties. There is a project planned to remove the Philips Brook Dam owned by the Walter Hoving Home, on Avery Road, in Garrison. The project is expected to reduce or remove flood risk to otherwise properties.	
Description of the Solution:	Ensure communication remains open with the Walter Hoving House regarding the removal of the Philips Brook Dam, a weir, and a pedestrian bridge; reconstruction of the stream channel with approximately 1400 cubic yards of fill; and repair to a footbridge and channel walls. Request a final inspection report to ensure flood risk has been reduced or eliminated and work with the facility to notify nearby property owners of any remaining risk.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will have a minimized risk of flood.	
Impact on Critical Facilities/Lifelines:	Dams are considered a critical facility. This action will ensure open communication and result in the safe removal of a critical facility.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions
	Remove and replace dam	Replacing the dam may cause current known problems to continue

Action 2027-PhilipstownT-03. Flood Mitigation Along Water Ways

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Flooding following major storms has damaged homes throughout the Town. In communities near the Hudson River, “king tides” have flooded streets and homes, particularly in the Manitou Station neighborhood, at Garrison’s Landing, and on West, North, and New Streets in Cold Spring. And major storms have damaged roads, including Upper and Lower Station Roads in Garrison, and flooded the tunnels in Garrison and Cold Spring that allow pedestrians to cross from one side of the train line to the other. The Town is aware of properties on Fishkill Road which have repetitively flooded from Barrett Pond, which discharges underneath a structure; locations on Brookside and Valley Lane, which are at the base of a steep mountain next to Sprout Brook Creek; and a property on Old Albany Post Road which floods from heavy rains traversing the steep mountain slope along Philips Brook Creek; and Philipsbrook Road flooding from the Philips Brook Creek and eroding the bridge.	
Description of the Solution:	Using best management practices provide retention/detention of stormwater and re-contour slope; inform property owners of non-structural flood mitigation measures; evaluate the feasibility of construction an over-tracks pedestrian bridge for the train and closing the underground tunnel; consider the replacement of the Philipsbrook Road bridge.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Town Budget, NYS DEC	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.	
Impact on Critical Facilities/Lifelines:	The stabilization measures will permit roads to remain open as a transportation route.	
Impact on Capabilities:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Elevate nearby roads	Cost prohibitive
	Acquire all properties which flood	Cost prohibitive

Action 2027-PhilipstownT-04. Private Well Owner Education

Lead Agency:	Town Supervisor	
Supporting Agencies:	Putnam County Health Department, County BES	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☒Drought ☐Earthquake ☒Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Potable water in the Town is primarily available through private wells. Private well owners and operators may not be informed of the proper maintenance and/or upkeep of the wells. Educating private well owners can ensure that potable water is still available from their wells during periods of drought or extreme heat.	
Description of the Solution:	Partner with the Putnam County Health Department to develop outreach materials to inform private well owners for well-specific maintenance advice and testing recommendations. Without proper maintenance, private wells can become contaminated, pose health risks, and lead to the lack of potable water during periods of drought to support everyday activities.	
Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 4	
Benefits:	Having an education program can inform future residents and businesses how to properly maintain well(s) to ensure water supply is clean and available.	
Impact on Socially Vulnerable Populations:	Populations relying on private wells, which is the majority of the Town, will have materials available to become educated on the proper maintenance of well(s) to ensure clean, potable water is available, and to minimize possible contaminations.	
Impact on Future Development:	Potable water in the Town is primarily available through private wells; therefore, it is likely future development will also rely on private wells for water supply. Having an education program can inform future residents and businesses.	
Impact on Critical Facilities/Lifelines:	This action will assist in ensuring the water systems lifeline is stable by informing private well owners and operators how to maintain the well(s) appropriately.	
Impact on Capabilities:	This action will create a new education capability for the Town.	
Climate Change Considerations:	Higher temperatures are expected to increase the amount of moisture that evaporates from land and water. These changes have the potential to lead to more frequent and severe droughts, which, in turn, can impact water supply for public wells.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Develop materials but do not publicize the materials	Residents and business owners may not know resources are available
	Town will create its own materials	Town may not have the subject matter experts employed to provide specific information

Action 2027-PhilipstownT-05. Town Road Improvements

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Severe storms and winter storms have felled trees and toppled power lines. Severe storms and winter storms have caused significant damage to the Town's dirt roads: South Mountain Pass, Old West Point Road, Old Albany Post Road, Lane Gate Road, Philipse Brook Road, Indian Brook Road, East Mountain Road, among them.	
Description of the Solution:	The Town will conduct a study to identify feasible mitigation measures to reduce the damage and erosion to the Town's dirt roads. Possible measures may include soil stabilization, increased drainage capacity, redesigning the roads, or installing erosion control methods.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Town Budget, NYS DEC	
Implementation Timeline:	5+ years for all roads	
Goals Met:	1	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development surrounding on the identified roads will have its risk of flood impacts reduced.	
Impact on Critical Facilities/Lifelines:	The mitigation measures will permit roads to remain open as a transportation routes and reduce damage and erosion.	
Impact on Capabilities:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Elevate nearby roads	Cost prohibitive
	Acquire all properties which flood	Cost prohibitive

Action 2027-PhilipstownT-06. Risk Reduction Initiative

Lead Agency:	Putnam County	
Supporting Agencies:	Town Staff	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.	

Description of the Solution:	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically:
	• Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation.
	• Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include:
	  • NFIP Community Rating System (CRS)
	  • Benefit-Cost Analysis (BCA)
	  • Substantial Damage Estimating (SDE)
	  • NFIP Elevation Certificates (EC)
	  • Certified Floodplain Manager (CFM) Training and Certification
	• County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures	

Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the Town's overall preparedness for emergency events, increase knowledge of the various hazards which can impact the Town, and inform staff of how to maintain eligibility for the NFIP. Providing an opportunity for staff and officials to become further educated on floodplain management practices and standards can aid in the development of plans and procedures in a way that is conscious of the flood hazard.	
Impact on Socially Vulnerable Populations:	Town staff will become familiar with how to assist displaced persons following an emergency event. Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where at risk populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
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 the wildfire hazard. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways to prepare for, plan for, and prevent interruptions in service as a result of a flood.	
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. Officials that attend trainings will have a more confident understanding of floodplain management principles and the basics of NFIP requirements and standards.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Take FEMA IS courses		Will increase knowledge, but the information is generalized and not county- or town-specific
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Action 2027-PhilipstownT-07. Community Wildfire Protection Plan Development

Lead Agency:	Cold Spring Fire Company, Continental Village Fire Department, Garrison Volunteer Fire Company, North Highlands Engine Company #1	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☒Wildfire
Description of the Problem:	The Town does not have a developed Community Wildfire Protection Plan (CWPP). The CWPP identifies local wildfire threats and actions which can be taken to mitigate risks to life and property. Since 2020, three wildfires have occurred in the Town (“Defiance Road Fire” 41 acres burned; “Garrison Train Station Fire” 1.5 acres burned; “Ironstone” 3 acres burned).	
Description of the Solution:	The Town will develop a Community Wildfire Protection Plan collaboratively with government representatives, in consultation with federal agencies and other interested parties. There will be strong coordination with NYS DEC, as wildfires in the Town primarily occur on State Lands.	
Estimated Cost:	Medium	
Potential Funding Sources:	Fire Departments, Town Budget	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 3, 4	
Benefits:	A Community Wildfire Protection Plan (CWPP) will work to reduce wildfire risks, enhance community safety, and prioritize local needs through collaborative planning and resource allocation.	
Impact on Socially Vulnerable Populations:	This action will provide socially vulnerable populations an opportunity to be involved in the planning process, as a key element in community fire planning should be the meaningful discussion it promotes among community members regarding their priorities for local fire protection and forest management.	
Impact on Future Development:	Future development is protected by identifying wildfire risks near infrastructure and integrating mitigation strategies into planning and zoning decisions through the CWPP.	
Impact on Critical Facilities/Lifelines:	Critical facilities are safeguarded through CWPP planning efforts that inform protective measures and ensure operational continuity during wildfire emergencies.	
Impact on Capabilities:	Town capabilities are improved by strengthening interagency collaboration and using data-driven guidance for emergency planning and resource allocation.	
Climate Change Considerations:	Higher temperatures are expected to increase the amount of moisture that evaporates from land and water. These changes have the potential to lead to more frequent and severe droughts, which, in turn, increases the likelihood of wildfires.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Utilize neighboring community wildfire plans	May be helpful to model but will not be correct data for the specific area in need.
	Utilize previous wildfire plans	May be out of date or non-existent for this area.

Action 2027-PhilipstownT-08. Repetitive Loss Properties

Lead Agency:	Code Enforcement	
Supporting Agencies:	Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are limited resources available to develop structural flood control solutions in the Town. Less intensive flood mitigation measures can lessen damage through nonstructural projects. According to data received from FEMA, there are 13 repetitive loss properties in the Town. The Town is aware of properties on Fishkill Road which have repetitively flooded from Barrett Pond, which discharges underneath a structure; locations on Brookside and Valley Lane, which are at the base of a steep mountain next to Sprout Brook Creek; and a property on Old Albany Post Road which floods from heavy rains traversing the steep mountain slope along Philips Brook Creek.	
Description of the Solution:	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), 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.	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Town's current NFIP capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.

	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-PhilipstownT-09. Perkins Estate Pond Dam Rehab

Lead Agency:	Dam Owners (Open Space Institute)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Perkins Estate Pond Dam is a Class I High Hazard Dam that is located on Clove Creek. The dam is owned by the Open Space Institute. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including State Routes 301 and 9, Briars Road, Cross Creek Road, Torchia Road, among others. During the dam's last inspection in March 2025, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.	
Description of the Solution:	The Municipal Engineer will encourage the Open Space Institute to complete, or share, an engineering study of the Perkins Estate Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the Open Space Institute in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PhilipstownT-10. Cargill Reservoir Dam Rehab

Lead Agency:	Dam Owners (City of Beacon)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Cargill Reservoir Dam is a Class I High Hazard Dam that is located on Cargill Brook. The dam is owned by the City of Beacon in Dutchess County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including State Route 9, East Mountain Road North, Esselborne Road, among others. During the dam's last inspection in July 2024, it was found to be deficiently maintained; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.	
Description of the Solution:	The Municipal Engineer will encourage the City of Beacon to complete, or share, an engineering study of the Cargill Reservoir Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the City of Beacon in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PhilipstownT-11. Cold Spring Dam (upper) Rehab

Lead Agency:	Dam Owners (Village of Cold Spring)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Cold Spring Dam (upper) is a Class I High Hazard Dam that is located on Foundry Brook. The dam is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, among others. Impacts from a failure at the Cold Spring Dam (upper) could trigger a failure at the Cold Spring Dam (lower) due to the increased pressure from building water – these impacts would flood downstream into Lake Surprise, inundating the recreational area. During the dam's last inspection in January 2025, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.	
Description of the Solution:	The Municipal Engineer will encourage the Village of Cold Spring to complete, or share, an engineering study of the Cold Spring Dam (upper) to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the Village of Cold Spring in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PhilipstownT-12. Cold Spring Dam (lower) Rehab

Lead Agency:	Dam Owners (Village of Cold Spring)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Cold Spring Dam (lower) is a Class I High Hazard Dam that is located on Foundry Brook. The dam is owned by the Village of Cold Spring in Putnam County, NY. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, recreational areas, and transportation routes including Lake Surprise Road, Foundry Pond Road, among others. Impacts from a failure at the Cold Spring Dam (upper) would escalate any impacts already felt by a failure at the Cold Spring Dam (lower) – these impacts would flood downstream into Lake Surprise, inundating the recreational area. During the dam's last inspection in July 2024, it was found to be structurally unsound; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.	
Description of the Solution:	The Municipal Engineer will encourage the Village of Cold Spring to complete, or share, an engineering study of the Cold Spring Dam (upper) to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the Village of Cold Spring in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PhilipstownT-13. Undersized Drainage

Lead Agency:	Engineer	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. There are several culverts which are undersized or have been damaged from instances of flooding and the debris caused by severe storms and severe winter winters. , including a known repetitively back-up area from debris behind Hustis Road.	
Description of the Solution:	The Town Engineer will complete an engineering survey of the drainage systems in Town that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town Highway Department will complete the necessary upsizing for the culverts.	
Estimated Cost:	TBD after study is complete	
Potential Funding Sources:	FEMA HMA, CHIPS, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 2027-PhilipstownT-14. FEMA Flood Mapping

Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Town Board, Putnam County, FEMA, NYS DEC, NYS DHSES	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The vicinity of Ashely Lane and Route 301 may be incorrectly mapped on the effective Flood Insurance Rate Map, leading to a potential misrepresentation of flood risk. Correctly displaying the areas at risk to the flood hazard is not only critical to visually show the risk, but to support grant applications for funding to mitigate the flood risk at identified locations within or around the floodplain.	
Description of the Solution:	The Town will actively participate in the remapping process. This participation will include providing data and information to support map revisions, identifying areas of flooding concern, providing review of preliminary maps, and adopting updated flood damage prevention local laws when the FIRMs are finalized.	
Estimated Cost:	Low	
Potential Funding Sources:	FEMA HMA, Town Budget, NYS DEC, NYS DHSES, FEMA	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5	
Benefits:	Updating FIRMs will provide a more complete picture of the floodplain and the overall flood hazard in the Town and Putnam County. This will inform other sectors of the community, including land use, development, permitting, and codes and standards.	
Impact on Socially Vulnerable Populations:	An analysis of the floodplain will inform future community development and land use and prevent vulnerable populations from residing in areas of heightened flood risk.	
Impact on Future Development:	Updated FIRMs will decide which populations and structures will require flood insurance to be built in areas of flood hazard.	
Impact on Critical Facilities/Lifelines:	Creation of updated floodplain maps will inform efforts to increase the resilience of critical infrastructure that is present in those areas, including transportation routes, water treatment plants, and other utility services. This will also aid in preventing future development of infrastructure in these areas.	
Impact on Capabilities:	An understanding of the floodplain will allow for the development of processes, plans, training and staff placement to address flooding issues in the areas of greatest concern before they occur.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Town creates its own flood maps	Time consuming, cost prohibitive, may not be recognized as official documentation in grant applications
	FEMA updates maps without Town input	Required changes for areas of flooding may not be incorporated

Table 9-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-PhilipstownT-01	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-PhilipstownT-02	Philips Brook Dam Mitigation	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PhilipstownT-03	Flood Mitigation Along Water Ways	1	1	1	1	0	0	1	1	1	1	1	1	0	1	**11**	High
2027-PhilipstownT-04	Private Well Owner Education	1	0	1	1	1	1	1	0	1	0	1	1	1	0	**10**	Medium
2027-PhilipstownT-05	Town Road Improvements	1	1	1	1	1	0	0	1	1	1	1	0	1	0	**11**	High
2027-PhilipstownT-06	Risk Reduction Initiative	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2027-PhilipstownT-07	Community Wildfire Protection Plan Development	0	0	1	1	1	0	1	1	1	0	1	1	1	0	**9**	Medium
2027-PhilipstownT-08	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	0	1	1	0	1	**11**	High
2027-PhilipstownT-09	Perkins Estate Pond Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PhilipstownT-10	Cargill Reservoir Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PhilipstownT-11	Cold Spring Dam (upper) Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PhilipstownT-12	Cold Spring Dam (lower) Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-PhilipstownT-13	Undersized Drainage	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-PhilipstownT-14	FEMA Flood Mapping	1	1	1	1	1	1	1	1	0	1	1	1	0	0	**11**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

10. TOWN OF PUTNAM VALLEY

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

10.1 HAZARD MITIGATION PLANNING TEAM

The Town of Putnam Valley identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments.

Table 10-1 summarizes the Town officials who participated in the development of the annex. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 10-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Alison Jolicoeur, Town Supervisor Address: 265 Oscawana Lake Rd, Putnam Valley, NY 10579 Phone Number: 845.526.2121 Email: ajolicoeur@putnamvalley.gov	Name/Title: Shawn Keeler, Highway Superintendent Address: 265 Oscawana Lake Rd, Putnam Valley, NY 10579 Phone Number: 845.526.3333 Email:
National Flood Insurance Program Floodplain Administrator	
Name/Title: Richard Quaglietta Address: 265 Oscawana Lake Road, Putnam Valley, NY 10579 Phone Number: 845-526-2327 Email: rquaglietta@putnamvalley.com	
Additional Contributors	
Name/Title: Todd Atkinson, Engineer Method of Participation: Contributed information to the development of the Town's annex	

10.2 COMMUNITY PROFILE

10.2.1 Community Classifications

Table 10-2 summarizes classifications for community programs available to Putnam Valley.

Table 10-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	Not received	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-

Program	Participating? (Yes/No)	Classification	Date Classified
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4 to 8 Changes due to water access Oregon Corners area has hydrants.	New update to be out soon. No change expected
NYSDEC Climate Smart Communities	Yes	Registered	May 6, 2020
NYSERDA Clean Energy Community	Yes	Designated CEC	May 3, 2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

10.2.2 Community Profile

The Town is situated in the southwest portion of Putnam County and is bordered by the Town of Philipstown to the west and northwest; the Town of Kent to the northeast; and the Town of Carmel to the southeast. To the south of Putnam Valley are the Towns of Yorktown, Cortlandt, and the City of Peekskill, all in Westchester County. Town government is run by the Town Board as the executive, administrative, and legislative body of the town. The Town Board represents the will and voice of the people.

Table 10-3 through Table 10-6 note land area, population, and building stock information for the Town of Putnam Valley.

Table 10-3. Total Land Area in the Town of Putnam Valley

Jurisdiction	Total Land Area	
	Acres	Square Miles
Putnam Valley (T)	26,429.2	41.3

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 10-4. Population Estimates in the Town of Putnam Valley

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
11,762	12.0%	11,755	12.0%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population

Table 10-5. Vulnerable Populations in the Town of Putnam Valley

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
2,208	18.8%	606	5.2%	204	1.7%	986	8.4%	493	4.2%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.

Table 10-6. General Building Stock in the Town of Putnam Valley

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
5,383	$2,989,131,470	4,412	$2,136,157,600	924	$652,327,856	4	$14,640,929	43	$186,005,085

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

10.3 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 Putnam Valley's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

10.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Putnam Valley are shown in Figure 10-1 and Figure 10-2. 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 Putnam Valley has significant exposure.

Figure 10-1. Putnam Valley Hazard Area Map #1

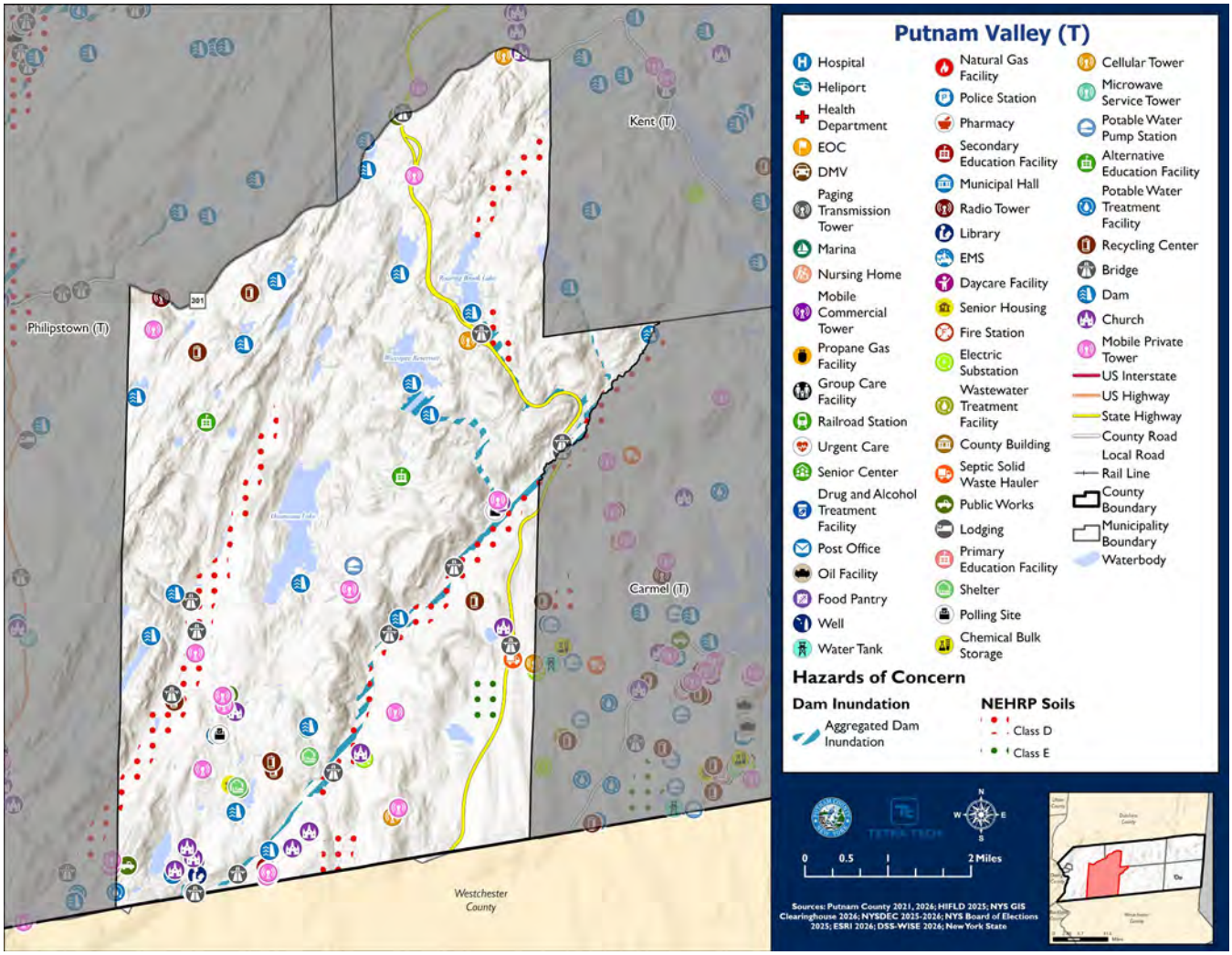
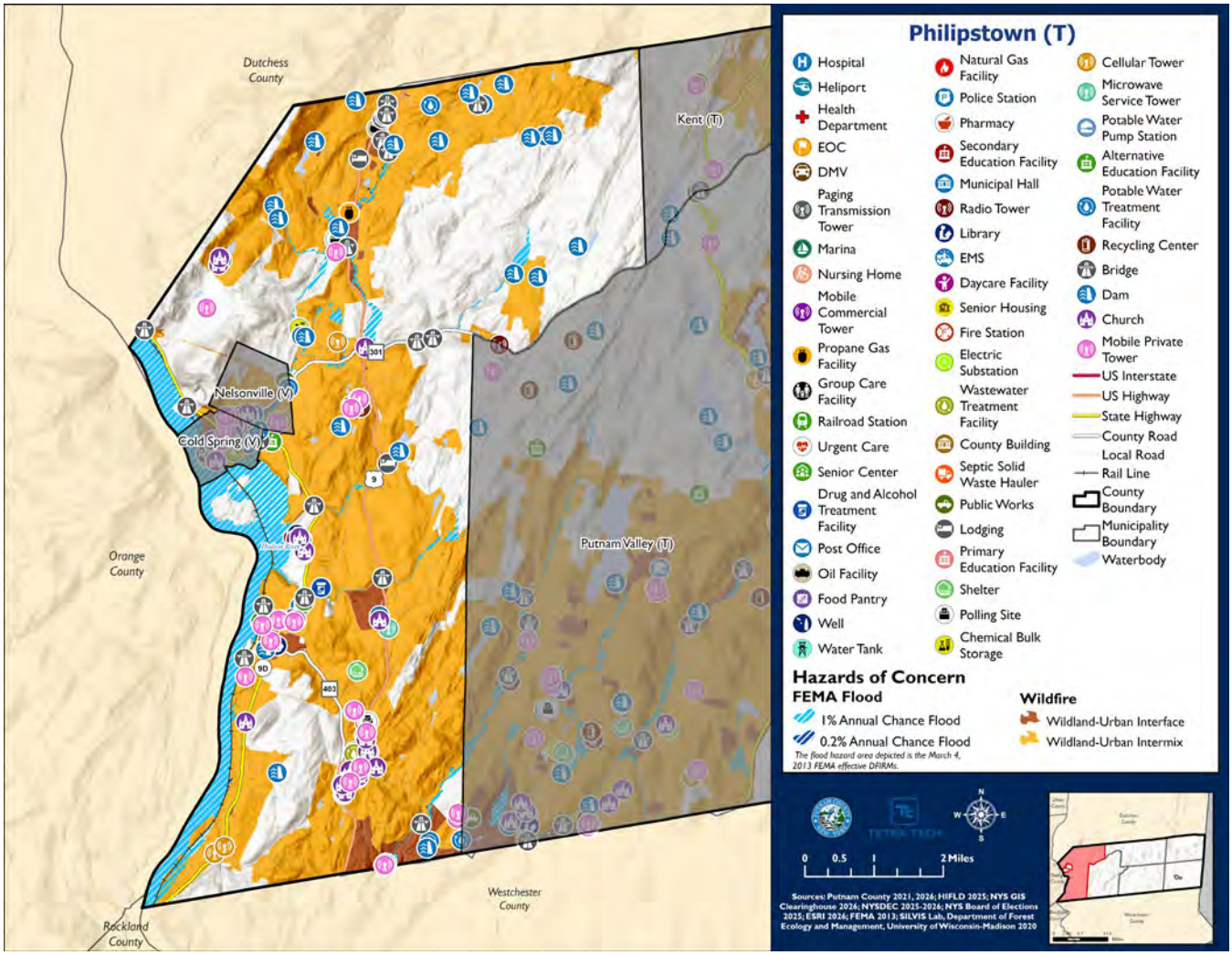


Figure 10-2. Putnam Valley Hazard Area Map #2



10.3.2 Previous Event History

The history of natural and non-natural hazard events in Putnam Valley is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 10-7 and Table 10-8 provide details on the loss and damage in Putnam Valley during hazard events since the last hazard mitigation plan update.

Table 10-7. Presidential Disaster Declarations History in Putnam Valley

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Putnam Valley
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	Adhered to mandates
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	No impacts
August 21-24, 2021	EM-3565-NY	Hurricane Henri	No impacts

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Putnam Valley
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	No impacts
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	The Highway Department worked significant overtime due to floodwaters overtopping roadways, including Bellow Hollow Road, New Hill Road, Wiccopee Road and Brook Falls Road in the community

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 10-8. Hazard Event History in Putnam Valley

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Putnam Valley
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	No Losses in Putnam Valley
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	No Losses in Putnam Valley
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	No Losses in Putnam Valley
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	No Losses in Putnam Valley
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	No Losses in Putnam Valley
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	No Losses in Putnam Valley
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	No Losses in Putnam Valley

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

10.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 10-9 includes an inventory of critical facilities and infrastructure for the Town of Putnam Valley.

Table 10-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Tompkins Corner Cultural Center	Church	Y	Y	2027-PutnamValleyT-01	-
Putnam Valley VFD, Inc. (KCP618)	Mobile Private Tower	Y	Y	2027-PutnamValleyT-01	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Nine bridges and two dams were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

10.3.4 Local Hazard Impacts Assessment

Representatives from the Town of Putnam Valley Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 10-10.

Table 10-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	4 HHPDs in the Town. All HHPDs hold back major waterbodies, which would be detrimental to the structures, infrastructure, and persons downstream. Roaring Brook Lake Dam was just completely redone - $1 million upgrades. Floradan Estates Dam, an intermediate hazard dam, poses a high risk of flooding the residents of the Town of Putnam Valley that live along Oscawana Brook and Peekskill Hollow Brook.
Disease Outbreak	Population density is low, not much risk from the hazard in the Town.
Drought	Town is primarily private wells. Maybe 20 people in a water district, but water is sourced from wells. Aquifers are abundant; no problems with drying wells.
Earthquake	Felt, but no major impacts.
Extreme Temperatures	Town has opened cooling center for extreme heat (German American Club).
Flood	Several projects underway to reduce flood risk by upsizing culverts/bridges. Bottom of Tinker Hill, Peekskill Hollow Road, White Road, Horton Hollow Road, New Hill Road are repetitively flood. Peekskill Hollow Brook; Canopus Creek has flooding concerns.
Harmful Algal Blooms	All waterbodies (lakes, ponds) have had HABs. Many are recreational, impacting the economy. Roaring Brook, Lake Peekskill, Oscawana Lake, Barger Pond, Peekskill Hollow Brook.
Severe Storm	Power outages are typical during storms. NYSEG is aware of problem spots and has been removing/trimming trees to try to prevent power outages.

Hazard Name	Local Impacts: People, Community Services, Local Economy
Severe Winter Storm	Power outages are typical during storms. NYSEG is aware of problem spots and has been removing/trimming trees to try to prevent power outages. Salt shortage.
Terrorism	No impacts
Wildfire	Some brush fires, but no major wildfires. Town is surrounded by forested and woodland areas. Agreements for mutual aid.

10.3.5 Vulnerable Community Assets

Representatives from the Town of Putnam Valley Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 10-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 10-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Mainly crop farms, very few livestock. Maybe crop loss from drought; economic impacts.	**Area: Concentration of Local Businesses, Major Employers**	Oregon Corners is the business district – the center runs along the side of the creek – a county-owned and maintained bridge goes out of town from that location. It is at risk of flooding.
Area: Concentration of Residences	Those downstream from dams; primarily Peekskill Hollow Brook (all dams lead to it). Peekskill is the most populous part of the Town.	**Local Roads, Highways, Culverts, Bridges**	Several projects underway to reduce flood risk by upsizing culverts/bridges. Bottom of Tinker Hill, Peekskill Hollow Road, White Road, Horton Hollow Road, New Hill Road are repetitively flood. Peekskill Hollow Brook; Canopus Creek has flooding concerns.
Municipal Buildings	No municipal buildings are in the flood area. All buildings have a back-up generator.	**Medical Centers (non-hospital)**	No impacts.
College/University	No impacts.	**Place of Worship**	Tompkins Corner Cultural Center was previously a church and is located in the floodplain.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	Beaches surrounding the Lakes can be impacted by flooding or dam failure.	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	Several projects underway to reduce flood risk by upsizing culverts/bridges. Bottom of Tinker Hill, Peekskill Hollow Road, White Road, Horton Hollow Road, New Hill Road are repetitively flood.
Cultural/Historic Buildings/Sites	German American Club is the cooling/warming center.	**Schools (K-12)**	No concerns regarding schools in Town.

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Elder-care Facilities	No impacts.	**Utilities**	Overhead lines break following ice storms.
Fire/Police Stations	Ambulance Corps is used for sheltering. Volunteer FD is constructing a new building which can be used in the future for warming/cooling needs and possibly sheltering.	**Wastewater Treatment Plants**	No impacts
Gas Stations, Grocery Stores, Supermarkets	Shops in Oregon Corners – the center runs along the side of the creek – a county-owned and maintained bridge goes out of town from that location. It is at risk of flooding.	**Water: Drinking Water Resources**	Town is primarily private wells. Maybe 20 people in a water district, but water is sourced from wells. Aquifers are abundant; no problems with drying wells.
Hospitals	No impacts.	**Other**	No impacts

10.3.6 Dams

Table 10-12 includes all dams in the Town of Putnam Valley. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 10-12. Dams Located in Putnam Valley

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-0469	Williams Pond Dam	TR-CANOPUS CREEK	JESSE FEIRING WILLIAMS	N/A	Recreation	Low Hazard Dam
213-0498	Lower (south) Wiccopee Dam	WICCOPEE BROOK	CITY OF PEEKSKILL	Local Government	Water Supply - Secondary	High Hazard Dam

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
213-2775	Roaring Brook Dam	ROARING BROOK	Town of Putnam Valley	Local Government	Recreation	High Hazard Dam
213-3354	Louis Enten Pond Dam #1	PEEKSKILL HOLLOW CREEK	Roxana Rotman and Steven McClymont	Private	Recreation	Low Hazard Dam
213-3722	Frank & Cooper Pond Dam	TR-TROUT CREEK	WICCOPEE WOODS INC	Private	Recreation	Low Hazard Dam
213-3848	Duck Pond Dam A & B	TR-INDIAN BROOK	NYS PARKS & RECREATION TACONIC	State	Other, Recreation	Low Hazard Dam
213-4112	Stillwater Pond Dam	STILLWATER BROOK	NYS PARKS & RECREATION TACONIC	State	Water Supply - Secondary	Low Hazard Dam
213-4117	Pelton Pond Dam	CANOPUS CREEK	NYS PARKS & RECREATION TACONIC	State	Other, Recreation	Intermediate Hazard Dam
213-4119	John Allen Pond Dam	TR-CANOPUS CREEK	NYS PARKS & RECREATION TACONIC	State	Recreation	Low Hazard Dam
213-0814	Lake Peekskill Dam	HOLLOWBROOK	LAKE PEEKSKILL IMPROVEMENT DISTRICT	Local Government	Recreation	High Hazard Dam
213-1146	Upper (north) Wiccopee Dam	WICCOPEE BROOK	CITY OF PEEKSKILL	Local Government	Water Supply - Secondary	High Hazard Dam
213-1277	L Berman Pond Dam	TR-PEEKSKILL HOLLOW CREEK	L BERMAN	N/A	Recreation	Low Hazard Dam
213-1307	Hollow Brook Dam	TR-PEEKSKILL HOLLOW BROOK	HARRY GEVERTZMAN	N/A	Recreation	Low Hazard Dam
213-1331	G L Lloyd Pond Dam	PEEKSKILL HOLLOW CREEK	GEORGE L LLOYD	N/A	Recreation	Low Hazard Dam
213-4456	Floradan Estates Dam	OSCAWANA CREEK	FLORADAN ESTATES INC	Private	Recreation	Intermediate Hazard Dam
213-4614	Indian Lake Dam	TR-CANOPUS CREEK	FRANCISCAN SISTERS	N/A	Recreation	Low Hazard Dam
213-4615	Oscawana Lake Dam	OSCAWANA BROOK	TOWN OF PUTNAM VALLEY	Local Government	Recreation	Low Hazard Dam
213-5463	Hidden Lake Dam	TR-CANOPUS CREEK	NYS PARKS & RECREATION TACONIC	State	Fish and Wildlife Pond, Recreation	Low Hazard Dam

Identified information about dam risk in the Town, or to dams owned by the Town, are noted below:

- Upper Wiccopee Dam, a high hazard dam, poses a high risk of flooding to the Town of Putnam Valley residents that live along Wiccopee Brook and Peekskill Hollow Brook.
- Lower (south) Wiccopee Dam, a high hazard dam, poses a high risk of flooding to the Town of Putnam Valley residents that live along Wiccopee Brook and Peekskill Hollow Brook.

- Roaring Brook Dam, a high hazard dam, poses a high risk of flooding to the residents of the Town of Putnam Valley that live along Roaring Brook and Peekskill Hollow Brook.
- Lake Peekskill Dam, a high hazard dam, poses a high risk of flooding to the residents of the Town of Putnam Valley that live along Oscawana Brook and Peekskill Hollow Brook.
- Floradan Estates Dam, an intermediate hazard dam, poses a high risk of flooding the residents of the Town of Putnam Valley that live along Oscawana Brook and Peekskill Hollow Brook.
- Oscawana Lake Dam, a low hazard dam, poses a high risk of flooding to the residents of the Town of Putnam Valley that live along Oscawana Brook and Peekskill Hollow Brook.

10.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 10-13 identifies the preliminary hazard ranking for Putnam Valley, whether the Town agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 10-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Disagree	Medium	There are 4 HHPDs and one intermediate dam that are of concern. One of the dams was just fixed.	Medium
Disease Outbreak	Medium	Disagree	Low	Due to population density, there is a low risk for the spread of illness.	Low
Drought	High	Disagree	Low	Private wells for potable water. The aquifer is substantial.	Low
Earthquake	Low	Agree	Low	-	Low
Extreme Temperatures	Medium	Agree	Medium	-	Medium
Flood	Low	Disagree	Medium	Though flood risk has gone down in the Town due to mitigation practices, the risk is still active.	Medium
Harmful Algal Blooms	Medium	Agree	Medium	-	Medium
Severe Storm	High	Disagree	Medium	SOPs are in place for response to the hazard.	Medium

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Severe Winter Storm	High	Disagree	Medium	SOPs are in place for response to the hazard.	Medium
Terrorism	Low	Agree	Low	-	Low
Wildfire	High	Agree	Medium	No wildfires in past several decades, primarily brush fires.	Medium

10.4 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 10-14 through Table 10-17.

10.4.1 Development and Permitting

Table 10-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes, Building Department, Planning/Zoning
What is your process for tracking building permits?	Building Department utilizes a database program called "Municity" to track building permits.
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes
Does your community have a buildable land inventory? If yes, please describe.	No, Putnam Valley is characterized as "built out"

Table 10-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	3	0	0	3
Permits within SFHA	0	0	0	0
2021				
Total Permits	4	0	0	4
Permits within SFHA	0	0	0	0
2022				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2023				
Total Permits	1	0	0	1

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
Permits within SFHA	0	0	0	0
2024				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2025				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

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

Table 10-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
The Town did not report any recent or major development and infrastructure from 2020 to present.					

Table 10-17. 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 Zones*	Description / Status of Development
The Town did not indicate any known or anticipated major development and infrastructure in the next five years.					

10.5 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 10-1 is responsible for maintaining this information.

10.5.1 NFIP Statistics

Table 10-18 summarizes the NFIP policy and claim statistics for the Town of Putnam Valley.

Table 10-18. Putnam Valley NFIP Summary of Policy and Claim Statistics

NFIP Community Number	361030#
FEMA 2020 NFIP Data	
# Policies	52
# Claims (Losses)	82
Total Losses Claimed	$1,307,412
# Repetitive Loss Properties (NFIP definition)	22
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-

FEMA 2026 Aggregated Data	
Number of Losses	68
Repetitive Loss Events	25
Net Building Payment	$2,155,429.00
Net Contents Payment	$137,717.00
Total Net Payment	$2,293,147.00

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 2020, 2026

Note: "-" = information unavailable

10.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 10-19.

Table 10-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Areas located adjacent to the Peekskill Hollow Brook, Canopus Brook, Sprout Brook and Oscawana Brook as well as areas adjacent to the town lakes are prone to flooding.
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	The Code Enforcement Officer is the Floodplain Administrator. They presently do not have adequate training for Floodplain Administrator.
What local department is responsible for floodplain management?	File Town of Putnam Valley Code Enforcement Officer is hereby appointed Local Administrator to administer and implement this Chapter by granting or denying floodplain development permits in accordance with its provisions.
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2013
What is the date that your flood damage prevention ordinance was last amended?	January 29, 2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	2013

NFIP Topic	Comments
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Floodplain Administrator and Town Planning Board provide permit review. Flood Administrator, Town Engineer and Town Wetlands Inspector provide inspections, engineering and GIS capabilities.
What are the barriers to running an effective NFIP program in your community, if any?	Funding is the major obstacle in the town running an effective NFIP program.
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	Annual training for the Floodplain Administrator on proper inspection and compliancy procedures.
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	market value of the structure before the damage occurred.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Substantial improvement means any reconstruction, rehabilitation, addition, or oilier improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	None
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	No
Does the community maintain elevation records? If yes, please describe.	Unknown
Describe any areas of flood risk with limited NFIP policy coverage.	No
How does the community teach property owners or other stakeholders about the importance of flood insurance?	None
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	This is information is undevelopment on the town’s new website to be available within the year.
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?	Town staff utilize FEMA FIRM maps within the FEMA Map Service Center.

10.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Putnam Valley 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 Putnam Valley to identify opportunities for integrating mitigation concepts into ongoing Town procedures.

10.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 10-20 and Table 10-21 detail the available planning and regulatory capabilities of the Town.

Regulatory Capabilities

Table 10-20. Regulatory Capabilities in Putnam Valley

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	Chapter 132, Building Construction and Fire Prevention. The Town Board of the Town of Putnam Valley, Putnam County, New York, hereby accepts applicability of the New York State Uniform Fire Prevention and Building Code	NYS Uniform and Energy Code Chapter 132, Building Construction and Fire Prevention	Building Department
Climate Change Ordinance	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Emergency Management Ordinance	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B.	Putnam Fire/EMS Mutual Aid Plan, June 2017	Putnam Valley Volunteer Ambulance Corps; Volunteer Fire Department
Environmental Protection Ordinance	Yes	New State Environmental Quality Review Act (SEQR) Title 6 NYCRR Part 617 Regulations are in effect as of January 1st, 2019. The Town has an EMD Zoning District for environmental protection	Chapter 165	Zoning Board
Flood Damage Prevention Ordinance	Yes	It is the purpose of this Chapter to; A. Protect human life and health; B. Minimize expenditure of public money for costly flood control projects; C. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; D. Minimize prolonged business interruptions; E. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets and bridges located in areas of special flood hazard; F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; G. Provide that developers are notified that property is in an area of special flood hazard; and, H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.	Ch. 136	FPA
Growth Management	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	Yes	The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the Town of Putnam Valley through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and state law. •The objectives of this article are; A. To meet the requirements of the SPDES General Permit for Stormwater Discharges from MS4s, Permit No. GP-02-02 or as amended or revised; B. To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge non-stormwater wastes; C. To prohibit illicit connections, activities and discharges to the MS4; D. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this article; and E. To promote public awareness of the hazards involved in the	Chapter 101	Stormwater Management Officer

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		improper discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment and other pollutants into the MS4.		
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Yes	The Zoning Code has language included to protect land and restrict development in identified districts - Wetlands and Watercourse (W) District, Hillside Management (HM) District and Ground and Surface Water Protection (WP) District. The Forestry Code serves to enforce regulation of large logging operations in order to prevent harm to the environment, to preserve the rights of residents living near logging operations and to protect the interests of the taxpayers of the Town of Putnam Valley and the County of Putnam. The Tree Cutting Code serves to preserve, protect, conserve and regulate the forests, woodlands and trees and the benefits derived therefrom; prevent uncontrolled, widespread cutting of trees; prevent soil erosion; protect wetlands, water bodies and watercourses, air quality, vegetation, wildlife and fragile natural resources; and promote fire protection.	Ch. 165 Ch. 140 Ch. 161	Building Department Code Enforcement Officer
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	Included in Zoning	Ch. 165	Zoning Board of Adjustments
Stormwater Management Code	Yes	The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction and to address the findings of fact stating that the Regulation of land development	Ch. 102 – Stormwater Management Ch. 155 – Soil Erosion and	Stormwater Management Officer

Capability Type	In Place in Municipality? Yes or No	Comments	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		activities by means of performance standards governing stormwater management and site design will produce development compatible with the natural functions of a particular site or an entire watershed and thereby mitigate the adverse effects of erosion and sedimentation from development.	Sediment Control	
Subdivision Code	Yes	Subdivision is defined in the State enabling Statutes as: the division of any parcel of land into a number of lots, blocks, or sites as specified i a local ordinance, law or regulation, with or without streets or highways, for the purpose of sale, transfer of ownership, or development. There is not a requirement by NYS for subdivisions. Each municipality is permitted to further define subdivision for its own purposes in connection with its subdivision review procedure. The enabling statutes provide that a plat showing a division of land which is subject to a municipality's subdivision regulations, may not also be subject to review under its site plan review authority. (general city law s. 32 & 33, Town Law s. 276 & 277, Village Law s. 7-728 & 7-730).	Ch. 158	Planning/Zoning
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	The zoning regulations and districts as herein established have been designed to implement and promote the Master Plan for the Town of Putnam Valley for the purpose of promoting the health, safety and general welfare of the town.	Ch. 165	Building Department

Planning Capabilities

Table 10-21. Planning Capabilities in Putnam Valley

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	A vision resulting from the planning process is that the community should take action to protect its abundant natural resources and to	Adopted 2007 (online)	Planning Board

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		conserve a network of open lands that extends throughout the town, not only to protect the quality of its water and preserve its rural character, but also to provide vital habitats to continue the Town's important role as a critical and diverse regional biodiversity area.		
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	Yes	Annual Budget with input from department heads.	Ongoing, specifically noted is highway projects	Department Heads, Town Board
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency Management Plan (CEMP)	Yes	The development of the New York State Comprehensive Emergency Management Plan (CEMP) is required under NYS Executive Law, Article 2B. The plan is developed and maintained by the New York State Office of Emergency Management and agencies that comprise the NYS Disaster Preparedness Commission (DPC)	PCBES; Multiple Plans (Haz-Mat, CEMP); January 2020	BES
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	Yes	Element of Comprehensive Plan	Adopted 2007 (online)	Planning Board
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	No	-	-	-
Habitat Conservation / Wildlife Management Plan	No	-	-	-
Local Waterfront Revitalization Plan	No	-	-	-
Open Space Plan	No	In development	-	-
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	Yes	The 2025 Mid-Hudson Valley Regional Community Health Assessment (CHA) provides a comprehensive overview of the health status, needs, and priorities across the seven Mid-Hudson counties.	Multiple Plans; Chapter 10.04 of Putnam County Charter	PC Department of Health

Capability Type	In Place in Municipality? Yes or No	Comments	Plan Name and Year	Responsible Department / Agency / Organization
		The Community Health Assessment (CHA) is a descriptive summary of a population, its health status, and the distribution of health issues and the factors that impact health. It identifies the population's main health issues and their determinants and summarizes the assets and resources that can be mobilized to address the issues identified. The findings of the CHA inform the collaborative development of the Community Health Improvement Plan (CHIP). The Putnam County 2025-2030 Community Health Improvement Plan covers Putnam County, New York. The community health improvement plan (or CHIP) is a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. In formulating the Putnam County Community Health Improvement Plan (CHIP) 2025—2030, the Putnam County Department of Health (PCDOH) has identified three priorities to be addressed from the New York State Department of Health's Prevention Agenda 2025—2030. They are Poverty, Anxiety and Stress, and Preventive Services.		
Sheltering Plan	No	There are no sheltering agreements currently in place. The Senior Center can take some residents and has a kitchen available. However, the kitchen is not fully functioning.	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	See Stormwater Management and MS4 Regulations above	As Needed	SWMO
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

10.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 10-22 details the available administrative and technical capabilities of the Town.

Table 10-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Comments
Civil Engineer	Yes	Town Engineering Consultant retained
Construction/Building/Code Enforcement Department	Yes	Building Department
Economic Development Commission/Committee	No	-
Emergency Management/Public Safety Department	Yes	County operated EOC
Environmental Commission/Specialist	Yes	Town Board members are liaisons
Grant Writer	Yes	Millenium Strategies LLC
Maintenance Programs to Reduce Risk	Yes	The Highway Department manages vegetation.
Mitigation Planning Committee	No	-
Mutual Aid Agreements	No	-
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	Art of Brand Consulting
Planning Board	Yes	The planning board's responsibilities include reviewing proposed development projects.
Planning Department	Yes	Town Planner consultant retained
Personnel skilled or trained in GIS and/or HAZUS-MH applications	No	GIS coordinator consultant retained
Planner or Engineer with knowledge of land development and land management practices	Yes	Town Planner- Cornerstone Associates Town Engineer – Folchetti & Associates Stormwater Coordinator – Michael Towle
Planners or engineers with an understanding of natural hazards	Yes	Town Planner- Cornerstone Associates Town Engineer – Folchetti & Associates Stormwater Coordinator – Michael Towle
Professionals or Engineers trained in construction practices related to	Yes	Town Planner- Cornerstone Associates Town Engineer – Folchetti & Associates Stormwater Coordinator – Michael Towle

Capability Type	In Place in Municipality? Yes or No	Comments
buildings and/or infrastructure		
Professionals trained in conducting damage assessments	No	-
Public Works/Highway Department	Yes	Highway Department with over 30 personnel
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	Yes	Planners and Engineers retained
Surveyor(s)	No	-
Zoning Board of Appeals	Yes	A five member ZBA holds meetings monthly
Other	No	-

10.6.3 Fiscal Capability

Table 10-23 summarizes financial resources available to Putnam Valley.

Table 10-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement project funding	No
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, recreation fee for subdivisions
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	No
Other Federal (non-FEMA) funding programs	Senate Fiscal Appropriations
FEMA funding programs	FEMA Disaster relief for DR-4723
Other State funding programs	NYSDOT
Open Space Acquisition funding programs	No

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	EPA Clean Water Grant

10.6.4 Education and Outreach Capability

Table 10-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 10-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	Yes, prepared and placed on website and sent to residents via TPV alert by Town Supervisor monthly
Hazard awareness campaigns, such as school and community programs and events	No
Hazard mitigation information available on your website	Yes, COVID info online
Local News	Cablevision Channels 18 and 20, Putnam Press and Time
Natural disaster/safety programs in place for schools	Integrated in earth science course in 9th grade
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No
Public information officer or communications office	No
Social media for hazard mitigation education and outreach	Yes, Supervisor
Warning systems for hazard events	Yes, Indian Point Sirens

10.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 10-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*
- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 10-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Moderate
Disease Outbreak	Weak
Drought	Weak

Hazard	Strong, Moderate, Weak, None, N/A
Earthquake	Moderate if not a strong earthquake; Weak if epi-centered in the County or Town
Extreme Temperatures	Moderate
Flood	Moderate if minor or nuisance flooding; Weak if substantial
Harmful Algal Blooms	Moderate
Severe Storm	Moderate
Severe Winter Storm	Moderate
Terrorism	Weak
Wildfire	Moderate

10.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

10.7.1 Past Mitigation Action Status

The tables below indicate progress on the Town's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

T. Putnam Valley-1—Roaring Brook Dam	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Putnam Valley Engineering
Supporting Agency / Department	DPW
Action Location	-
Summary of Original Problem	The Roaring Brook Dam requires retrofitting to stabilize the Dam. Potential damage to the spillway. Stability Reports have been done and are available for view
Summary of Solution (Project)	Undertake assessment of dam conditions. Bids for retrofitting the dam have been solicited and are expected back 11/2020
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Dam will have to be inspected yearly for compliance issues and repairs made if needed waiting for reclassification by NYS DEC. Dam Rehabilitation Completed, waiting for reclassification by NYS DEC
If discontinue, explain why	Not applicable

T. Putnam Valley-2—Lovers Lane Bridge	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Putnam Valley
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The bridge was blown out from flood event due to a dislodged tree, resulting in significant damage to the bridge. The bridge has been closed for 15 years and entails a significant detour
Summary of Solution (Project)	Replace bridge and construct to a higher standard.
Action Category	SIP, SP
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Replace bridge and construct to a current NYSDEC standard
If discontinue, explain why	Not applicable

T. Putnam Valley-3—Wicopee Road	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Putnam Valley
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The culvert on Wicopee Road is deteriorated.
Summary of Solution (Project)	Replace culvert and construct to a higher standard.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	New Wiccopee Road Culvert Completed

T. Putnam Valley-4—Horton Hollow/Canopus Hollow	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Putnam Valley
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The culvert on this road is undersized and cannot handle the 25-year storm event.
Summary of Solution (Project)	Enhance design storm of existing culvert to handle new flows and existing conditions
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Enhance design storm of existing culvert to handle 20% additional flow over the 100-year storm event.
If discontinue, explain why	Not applicable

T. Putnam Valley-5—Backup Power for Critical/Essential Facilities	
Hazards Addressed	Severe Storm, Severe Winter Storm
Lead Agency / Department	Town of Putnam Valley
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	High wind events and winter storms have caused the widespread loss of electrical power, including power to local schools and home subdivision water treatment. The local schools, Putnam Valley Central School 2-locations (171 Oscawana Lake Road and Peekskill Hollow Road) is a critical facility in that it provides administrative services, Emergency Operations support and acts as a shelter and warming center to the local community during events. Loss of power forces the Town to transfer operations to other locations while operating at a greatly diminished capacity. Additional Putnam Valley has a 25- home subdivision, Glenmar Gardens, which has its own potable water system. Their power goes out during severe storms severely impacting their water supply.
Summary of Solution (Project)	Install back-up power at the following critical facilities: • Putnam Valley Central School, 171 Oscawana Lake Road • Putnam Valley Central School, Peekskill Hollow Road • Glenmar Gardens Subdivision - potable water system Generators will have sufficient capacity to allow the Town of quickly respond to a variety of disasters i.e. Hurricane, Nor'easter, Severe Storm, Severe Winter Storm, Earthquake and others by keeping the larger facilities open. This will prove useful as a shelter, emergency operations center, warming and gather places. It will also address community's needs while allowing the School(s) continuity during routine power or brown out situation. For the residents of the Glenmar Gardens subdivision, a generator will afford them uninterrupted and vitally necessary water service.
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Remove schools as they are their own entities
If discontinue, explain why	Not applicable

T. Putnam Valley-6—Adam's Corners Stream Rehabilitation	
Hazards Addressed	Flood, Severe Storm, Severe Winter Storm (heavy snowmelt)
Lead Agency / Department	Town Supervisor
Supporting Agency / Department	DPW, working with PC SWCD, NYSDEC and NRCS
Action Location	-
Summary of Original Problem	Location: Adam's Corner – Intersection of Church Road and Peekskill Hollow Road A large island has built up in the stream and is beginning to choke off the stream. This has greatly increased the risk of flooding to private property and structures in the area. Private property flooding during Irene and Sandy (a Repetitive Loss property and a neighbor) – believe to their engineer to be caused by stream silt build up – the stream is backing up in this area – reviewed with NYSDEC who advised the Town not to touch the area.
Summary of Solution (Project)	Work with County and NYSDEC to address the build-up of silt and islands where they are causing backups and changing the direction of flow leading to further stream bank erosion. The Town does not have the equipment needed to do the clearing work. This area is off county roads; thus, the County would need to be involved, even leading, in the effort.
Action Category	NSP, NR
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Putnam Valley-7—Oscawana Lake Dam Upgrades	
Hazards Addressed	Flood, Severe Storm, Severe Winter Storm (heavy snowmelt)
Lead Agency / Department	Town DPW
Supporting Agency / Department	NYSDEC
Action Location	-
Summary of Original Problem	Smaller, old dam at Abley Park. Lack of being able to control level results in local properties and septic systems getting flooded. This stream leads down to City of Peekskill drinking water supply.
Summary of Solution (Project)	Engineer and install a bigger (deeper) flow control to be able to lower the lake by maybe 4'to better regulate the lake
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Project complete

T. Putnam Valley-8—Promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain	
Hazards Addressed	Flooding, Severe Storm
Lead Agency / Department	Town of Putnam Valley – Engineering
Supporting Agency / Department	DPW
Action Location	-
Summary of Original Problem	There are acute areas of vulnerability in Putnam Valley that include both areas of flood damage to individual properties as well as locations of critical facilities located in the Special Flood Hazard Area.
Summary of Solution (Project)	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 (5-RL) and Severe Repetitive Loss (2-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. Specifically identified properties in the following locations: - Lovers Lane - White Road - Peekskill Hollow Road - Church Road
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Putnam Valley-9—Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	supported by relevant local department leads
Action Location	-
Summary of Original Problem	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities.
Summary of Solution (Project)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically: • Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation. • Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include: o NFIP Community Rating System (CRS) o Benefit-Cost Analysis (BCA) o Substantial Damage Estimating (SDE) o NFIP Elevation Certificates (EC) o Certified Floodplain Manager (CFM) Training and Certification o County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Not applicable

T. Putnam Valley-10—Vegetation Management Planning and Operational Enhancements	
Hazards Addressed	Severe Storm, Severe Winter Storm
Lead Agency / Department	Putnam Valley Highway Dept
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Removing trees along road rights-of-way. Putnam Valley was hit the hardest in Putnam county for the damage
Summary of Solution (Project)	The Town's current chipper truck dates to 1987 with only a 55 foot boom our chipper is a 1997 and only takes an 18 inch log to exceed our current capacity. A new buck truck would allow us to reach higher and be more dependable so we could remove more trees and limbs to prevent power outages and road closures.
Action Category	SIP, PR
Current Status – Please select one:	Discontinued
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	Not applicable
If discontinue, explain why	Project not eligible for HMA funds

T. Putnam Valley-11—Lake Peekskill Dam Repair	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Town of Putnam valley
Supporting Agency / Department	Lake Committee
Action Location	-
Summary of Original Problem	Lake Peekskill Dam is a town-owned concrete gravity dam built in 1928. The dam is considered a Class C high hazard dam by the NYSDEC. The dam's body monoliths do not meet NYSDEC dam safety requirements for sliding and overturning.
Summary of Solution (Project)	The Town proposes stabilization efforts to bring the dam into compliance and increase the level of protection provided.
Action Category	SIP, PR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Design phase for dam repair
If discontinue, explain why	Not applicable

10.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Town of Putnam Valley identified the following mitigation efforts completed since the last HMP:

- Completed projects to upsize culverts and many additional projects to continue this effort are underway.

- Flood mitigation for beaches/parks on Lake Peekskill (Carrara's Beach, North Beach) and Lake Oscawana (Hilltop Beach and Abele Park).

10.7.3 Identified Issues

The Town of Putnam Valley has identified the following vulnerabilities within their community for mitigation strategy development:

- Tompkins Corner Cultural Center and a private mobile tower, owned by the Putnam Valley VFD, are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.
- The Lovers Lane Bridge, which extends over Shrub Oak Brook, was blown out from a flood event due to a dislodged tree, resulting in significant damage to the bridge. The bridge has been closed for 15 years and entails a significant detour. The extended closure of this bridge has caused delays in emergency responses and impeded travel for residents and visitors to the Town.
- The culvert on Horton Hollow/Canopus Hollow is undersized and cannot handle the 25-year storm event. Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Though there are several culverts to be addressed throughout the Town, the Horton Hollow/Canopus Hollow culvert is significantly undersized and contributes to instances of flooding on the roadway.
- High wind events and winter storms have caused the widespread loss of electrical power, including power to a home subdivision water treatment. Glenmar Gardens, a 25- home subdivision, has its own potable water system. The power goes out during severe storms severely impacting the water supply.
- At Adam's Corner, an intersection at Church Road and Peekskill Hollow Road, a large island has built up in streams off the Peekskill Hollow Creek and is beginning to choke off the flow of water. This has greatly increased the risk of flooding to private property and structures in the area as the water flows outside of its normal boundaries. Flooding occurred during Irene and Sandy at repetitive loss properties in this location, as the streams and Peekskill Hollow Creek abut private residencies. NYS DEC advised the Town not to impede on the area.
- There are acute areas of vulnerability in Putnam Valley that include both areas of flood damage to individual properties as well as locations of critical facilities located in the Special Flood Hazard Area. There are 22 repetitive loss properties in the Town.
- The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.
- The Lower (south) Wiccopee Dam is a Class I High Hazard Dam that is located on the Wiccopee Reservoir, connecting to the Wiccopee Brook. The dam is owned by the City of Peekskill (Westchester County, NY). Failure of the dam could result in inundation of residential properties, woodland areas, and transportation routes including Wiccopee Road, Oscawana Heights Road, among others. The dam's use is a secondary water supply. During the dam's last inspection in March 2025, it was found to be unsound, with deficiencies recognized; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- The Roaring Brook Dam is a Class I High Hazard Dam that is located on Roaring Brook Lake, connecting to the Roaring Brook. The dam is owned by the Town of Putnam Valley. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation

routes including Lake Shore Road, the Taconic State Parkway, Pudding Street, among others. The failure of this dam would result in excess water to flow into Peekskill Hollow Creek, which is located downstream of Roaring Brook Lake, and may cause cascading impacts to properties along the creek. During the dam's last inspection in May 2024, it was found to be unsound, but in fair condition. The Roaring Brook Dam has been retrofitted to stabilize the dam. The dam will have to be inspected yearly for compliance issues and repairs, if needed, while waiting for reclassification of its condition rating by NYS DEC.

- The Lake Peekskill Dam is a Class I High Hazard Dam that is located on the Hollow Brook. The dam is owned by the Lake Peekskill Improvement District. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, and transportation routes including Lake Drive, Johnson Street, Hollow Brook Road, Oscawana Lake Road, among others. During the dam's last inspection in March 2025, it was found to be unsound, with deficiencies recognized; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- The Upper (north) Wiccopee Dam is a Class I High Hazard Dam that is located on the Wiccopee Brook. The dam is owned by the City of Peekskill (Westchester County, NY). Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including Lost Lake Drive, Fairfield Drive, among others. The dam's use is a secondary water supply. The failure of this dam would result in excess water to flow into the southern portion of the Wiccopee Reservoir. This failure may cause additional stress to the Lower (south) Wiccopee Dam, resulting in an additional failure. During the dam's last inspection in March 2025, no deficiencies were found. Roaring Brook Lake Dam recently received $1 million in upgrades by the City of Peekskill.
- Floradan Estates Dam, an intermediate hazard dam, poses a high risk of flooding the residents of the Town of Putnam Valley that live along Oscawana Brook and Peekskill Hollow Brook. Failures associated with intermediate hazard dams may cause significant damage to property and project operation, but loss of human life is not envisioned. This classification applies to predominantly rural agricultural areas, where dam failure may damage isolated homes, major highways or railroads or cause interruption of service of relatively important public utilities.
- Flood risk in the Town is primarily along the Peekskill Hollow Brook, Canopus Brook, Sprout Brook, Oscawana Brook, areas adjacent to the lakes in Town, and branching streams and tributaries. Floods from these water ways may stem from heavy rains, snowmelt, or ice jams. Impacted areas include, but are not limited to:
  - Tinker Hill Road, Peekskill Hollow Road, White Road, and New Hill Road experience flooding during heavy rains, leading to road way erosion, debris in culverts and on the road, and flooded roads. Peekskill Hollow Creek flows along all listed roads.
  - Horton Hollow Road and Sprout Brook Road experience flooding during heavy rains, leading to road way erosion, debris in culverts and on the road, and flooded roads. Canopus Creek flows along both roads.
  - Oregon Corners is the business district, located at the intersection of Oscawana Lake Road and Peekskill Hollow Road. The business district is bordered by the Peekskill Hollow Creek and several small tributaries. Oregon Corners is also located downstream of Lake Peekskill, a high hazard potential dam.
- Between 2020 to 2025, harmful algal blooms have occurred at Lake Peekskill, Barger Pond, Oscawana Lake, Wiccopee Reservoir, and Roaring Brook Lake. According to the Harmful Algal Bloom Action Plans developed by NYS DEC for other lakes in Putnam County, the significant sources of phosphorus loading in lakes are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in the lakes can impact recreational opportunities and cause a loss of income.

10.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Putnam Valley participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Putnam Valley 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 Town priorities.

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 10-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-PutnamValleyT-01. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Tompkins Corner Cultural Center and a private mobile tower, owned by the Putnam Valley VFD, are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level.	
Description of the Solution:	The Town will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s). There is a design in place to put in a bridge/culvert which will reduce flood risk.	
Estimated Cost:	Low	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of several critical facilities in the Town.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Relocate facilities	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-PutnamValleyT-02. Lovers Lane Bridge

Lead Agency:	Engineering	
Supporting Agencies:	Highway Department	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Lovers Lane Bridge, which extends over Shrub Oak Brook, was blown out from a flood event due to a dislodged tree, resulting in significant damage to the bridge. The bridge has been closed for 15 years and entails a significant detour. The extended closure of this bridge has caused delays in emergency responses and impeded travel for residents and visitors to the Town.	
Description of the Solution:	The engineer will perform a study to determine the appropriate materials to replace the bridge and construct it to meet NYS DEC standards, or higher.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Town Budget, County Budget, BRIDGENY, CHIPS	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4	
Benefits:	This action will reconstruct and open a bridge in the Town which has been closed and causing detours for the past 15 years.	
Impact on Socially Vulnerable Populations:	This action would permit first responders to respond to emergencies more promptly should there be an interruption along the original route for service.	
Impact on Future Development:	Future development would have an additional means of egress and a shorter response time for emergency services.	
Impact on Critical Facilities/Lifelines:	This action will reopen transportation routes to the public for daily use and evacuation needs; the bridges provide a point of access for first responders into communities that may have faced damage from a hazard event on either side of the bridges.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will work to ensure the structure of the bridges are impervious to erosion at their base due to rising water levels.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Remove bridge and do not replace	Will result in permanent detour and traffic delays and issues
	Remove bridge and replace it with pedestrian bridge	Location is not suitable for an exclusive pedestrian-only bridge

Action 2027-PutnamValleyT-03. Undersized Culverts

Lead Agency:	Engineer		
Supporting Agencies:	Highway Department		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	The culvert on Horton Hollow/Canopus Hollow is undersized and cannot handle the 25-year storm event. Undersized culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these undersized pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system. Though there are several culverts to be addressed throughout the Town, the Horton Hollow/Canopus Hollow culvert is significantly undersized and contributes to instances of flooding on the roadway.		
Description of the Solution:	The Town Engineer will complete an engineering survey of the drainage systems in Town that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town Highway Department will complete the necessary upsizing for the culverts. For the Horton Hollow/Canopus Hollow culvert, enhance design storm of the culvert to handle 20% additional flow over the 100-year storm event.		
Estimated Cost:	TBD after study is complete		
Potential Funding Sources:	FEMA HMA, CHIPS, Town Budget		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 5		
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.		
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.		
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.		
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. 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:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.		
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.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☒High	☐Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	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 2027-PutnamValleyT-04. Generator for Critical Facility

Lead Agency:	Glenmar Gardens	
Supporting Agencies:	Engineer, Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	High wind events and winter storms have caused the widespread loss of electrical power, including power to a home subdivision water treatment. Glenmar Gardens, a 25- home subdivision, has its own potable water system. The power goes out during severe storms severely impacting the water supply.	
Description of the Solution:	Install back-up power at the Glenmar Gardens Subdivision - potable water system, a critical facility. Generators will have sufficient capacity for the residents of the Glenmar Gardens subdivision, a generator will afford them uninterrupted and vitally necessary water service.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 4	
Benefits:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities and ensuring the power is reinstated rapidly will provide needed potable water for populations.	
Impact on Future Development:	This action results in protection of critical facilities that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of critical facilities and their essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Microgrid	Costly and difficult to implement.
	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.

Action 2027-PutnamValleyT-05. Adam's Corners Stream Rehabilitation

Lead Agency:	Town Supervisor		
Supporting Agencies:	Highway, County DPW, PC SWCD, NYS DEC, NRCS		
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire	
Description of the Problem:	At Adam's Corner, an intersection at Church Road and Peekskill Hollow Road, a large island has built up in streams off the Peekskill Hollow Creek and is beginning to choke off the flow of water. This has greatly increased the risk of flooding to private property and structures in the area as the water flows outside of its normal boundaries. Flooding occurred during Irene and Sandy at repetitive loss properties in this location, as the streams and Peekskill Hollow Creek abut private residencies. NYS DEC advised the Town not to impede on the area.		
Description of the Solution:	Work with County and NYS DEC to address the build-up of silt and islands where they are causing backups and changing the direction of flow leading to further stream bank erosion. The Town does not have the equipment needed to do the clearing work. This area is off county roads; thus, the County would need to be involved, even leading, in the effort.		
Estimated Cost:	High		
Potential Funding Sources:	Town Budget, County Budget, FEMA HMA, NRCS EWP		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 5		
Benefits:	The action will result in the restoration of natural stream function and reduce damages to property and infrastructure. Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties.		
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.		
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.		
Impact on Critical Facilities/Lifelines:	The stabilization measures will permit roads to remain open as a transportation route.		
Impact on Capabilities:	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.		
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)	
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)	
Priority	☐High	☒Medium	☐Low
Alternative	**Action**	**Evaluation**	
	No action	Current problem persists	
	Elevate nearby roads	Cost prohibitive	
	Acquire all properties which flood	Cost prohibitive	

Action 2027-PutnamValleyT-06. Repetitive Loss Properties

Lead Agency:	Code Enforcement	
Supporting Agencies:	Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are acute areas of vulnerability in Putnam Valley that include both areas of flood damage to individual properties as well as locations of critical facilities located in the Special Flood Hazard Area. There are 22 repetitive loss properties in the Town.	
Description of the Solution:	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 and Severe Repetitive Loss, 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. Specifically identified properties in the following locations: • Lovers Lane • White Road • Peekskill Hollow Road • Church Road	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Town's current NFIP capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	**Action**	**Evaluation**
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.

	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-PutnamValleyT-07. Risk Reduction Initiative

Lead Agency:	Putnam County	
Supporting Agencies:	Town Staff	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.	

Description of the Solution:	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically:
	• Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation.
	• Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include:
	  • NFIP Community Rating System (CRS)
	  • Benefit-Cost Analysis (BCA)
	  • Substantial Damage Estimating (SDE)
	  • NFIP Elevation Certificates (EC)
	  • Certified Floodplain Manager (CFM) Training and Certification
	• County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures	

Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the Town's overall preparedness for emergency events, increase knowledge of the various hazards which can impact the Town, and inform staff of how to maintain eligibility for the NFIP. Providing an opportunity for staff and officials to become further educated on floodplain management practices and standards can aid in the development of plans and procedures in a way that is conscious of the flood hazard.	
Impact on Socially Vulnerable Populations:	Town staff will become familiar with how to assist displaced persons following an emergency event. Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where at risk populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
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 the wildfire hazard. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways to prepare for, plan for, and prevent interruptions in service as a result of a flood.	
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. Officials that attend trainings will have a more confident understanding of floodplain management principles and the basics of NFIP requirements and standards.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Take FEMA IS courses		Will increase knowledge, but the information is generalized and not county- or town-specific
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Action 2027-PutnamValleyT-08. Lower (south) Wiccopee Dam Rehab

Lead Agency:	Dam Owners (City of Peekskill)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Lower (south) Wiccopee Dam is a Class I High Hazard Dam that is located on the Wiccopee Reservoir, connecting to the Wiccopee Brook. The dam is owned by the City of Peekskill (Westchester County, NY). Failure of the dam could result in inundation of residential properties, woodland areas, and transportation routes including Wiccopee Road, Oscawana Heights Road, among others. The dam's use is a secondary water supply. During the dam's last inspection in March 2025, it was found to be unsound, with deficiencies recognized; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.	
Description of the Solution:	The Municipal Engineer will encourage the City of Peekskill to complete, or share, an engineering study of the Lower (south) Wiccopee Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the City of Peekskill in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PutnamValleyT-09. Roaring Brook Dam Rehab

Lead Agency:	Municipal Engineer	
Supporting Agencies:	County BES, NYS DEC	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Roaring Brook Dam is a Class I High Hazard Dam that is located on Roaring Brook Lake, connecting to the Roaring Brook. The dam is owned by the Town of Putnam Valley. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Lake Shore Road, the Taconic State Parkway, Pudding Street, among others. The failure of this dam would result in excess water to flow into Peekskill Hollow Creek, which is located downstream of Roaring Brook Lake, and may cause cascading impacts to properties along the creek. During the dam's last inspection in May 2024, it was found to be unsound, but in fair condition. The Roaring Brook Dam has been retrofitted to stabilize the dam. The dam will have to be inspected yearly for compliance issues and repairs, if needed, while waiting for reclassification of its condition rating by NYS DEC.	
Description of the Solution:	While waiting for reclassification of its condition rating by NYS DEC, the Municipal Engineer will complete, or share, an engineering study of the Roaring Brook Dam to identify any potential needs for retrofits or improvements. An evaluation of the dam's condition rating in June 2024 notes the rating was received due to inadequate spillway capacity and insufficient hydraulic capacity of the low-level outlet to drain 90% of the impoundment in 14 days. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PutnamValleyT-10. Lake Peekskill Dam Rehab

Lead Agency:	Dam Owners (Lake Peekskill Improvement District)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Lake Peekskill Dam is a Class I High Hazard Dam that is located on the Hollow Brook. The dam is owned by the Lake Peekskill Improvement District. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, and transportation routes including Lake Drive, Johnson Street, Hollow Brook Road, Oscawana Lake Road, among others. During the dam's last inspection in March 2025, it was found to be unsound, with deficiencies recognized; the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.	
Description of the Solution:	The Municipal Engineer will encourage the Lake Peekskill Improvement District to complete, or share, an engineering study of the Lake Peekskill Dam to identify any potential needs for retrofits or improvements. According to the March 2025 inspection report, the dam's body monolith's do not meet NYS DEC requirements for sliding and overturning. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the Lake Peekskill Improvement District in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PutnamValleyT-11. Upper (north) Wiccopee Dam Rehab

Lead Agency:	Dam Owners (City of Peekskill)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Upper (north) Wiccopee Dam is a Class I High Hazard Dam that is located on the Wiccopee Brook. The dam is owned by the City of Peekskill (Westchester County, NY). Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including Lost Lake Drive, Fairfield Drive, among others. The dam's use is a secondary water supply. The failure of this dam would result in excess water to flow into the southern portion of the Wiccopee Reservoir. This failure may cause additional stress to the Lower (south) Wiccopee Dam, resulting in an additional failure. During the dam's last inspection in March 2025, no deficiencies were found. Roaring Brook Lake Dam recently received $1 million in upgrades by the City of Peekskill.	
Description of the Solution:	The Municipal Engineer will encourage the City of Peekskill to complete, or share, an engineering study of the Upper (north) Wiccopee Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town will support the City of Peekskill in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 4, 6	
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.	
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 at risk populations exists.	
Impact on Future Development:	Future development located in or near the dam inundation area will be further protected from a dam failure event.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
Climate Change Considerations:	Climate change is resulting in an increase to annual precipitation. Much of this increase is in the form of heavy rainfall events. Consideration should be taken for increases in frequency and severity of rainfall events to ensure that the dam is designed to withstand these increases.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-PutnamValleyT-12. Floradan Estates Dam Outreach

Lead Agency:	Highway Department	
Supporting Agencies:	Town Administration, County BES, NYS DEC, Dam Owners	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Floradan Estates Dam, an intermediate hazard dam, poses a high risk of flooding the residents of the Town of Putnam Valley that live along Oscawana Brook and Peekskill Hollow Brook. Failures associated with intermediate hazard dams may cause significant damage to property and project operation, but loss of human life is not envisioned. This classification applies to predominantly rural agricultural areas, where dam failure may damage isolated homes, major highways or railroads or cause interruption of service of relatively important public utilities.	
Description of the Solution:	The Town will coordinate with the NYS DEC, Putnam County and the private dam owners about any changes to the status of the Dam and aid in the development of updated EAPs as necessary. The Town will work with dam owners to ensure inspections and safety procedures are up to date. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Dam Owner will pursue funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	Low	
Potential Funding Sources:	Town Budget	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Utilize information from NYS DEC	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 2027-PutnamValleyT-13. Flood Mitigation Along Water Ways

Lead Agency:	Engineering	
Supporting Agencies:	Highway Department, County DPW, NYS DOT	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Flood risk in the Town is primarily along the Peekskill Hollow Brook, Canopus Brook, Sprout Brook, Oscawana Brook, areas adjacent to the lakes in Town, and branching streams and tributaries. Floods from these water ways may stem from heavy rains, snowmelt, or ice jams. Impacted areas include, but are not limited to: • Tinker Hill Road, Peekskill Hollow Road, White Road, and New Hill Road experience flooding during heavy rains, leading to road way erosion, debris in culverts and on the road, and flooded roads. Peekskill Hollow Creek flows along all listed roads. • Horton Hollow Road and Sprout Brook Road experience flooding during heavy rains, leading to road way erosion, debris in culverts and on the road, and flooded roads. Canopus Creek flows along both roads. • Oregon Corners is the business district, located at the intersection of Oscawana Lake Road and Peekskill Hollow Road. The business district is bordered by the Peekskill Hollow Creek and several small tributaries. Oregon Corners is also located downstream of Lake Peekskill, a high hazard potential dam.	
Description of the Solution:	The Town Engineer will assess the feasibility and cost-effectiveness of various stabilization measures, such as including gabions, riprap, drainpipes and/or related improvements to prevent future flooding surrounding Peekskill Hollow Brook, Canopus Brook, Sprout Brook, Oscawana Brook, areas adjacent to the lakes in Town, and branching streams and tributaries. The Town may also choose to look into acquiring property for open space to reduce flood risk.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, Town Budget, NYS DEC	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage to properties.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development surrounding the water ways will have its risk of flood impacts reduced.	
Impact on Critical Facilities/Lifelines:	The stabilization measures will permit roads to remain open as a transportation route.	
Impact on Capabilities:	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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Elevate nearby roads	Cost prohibitive

	Acquire all properties which flood	Cost prohibitive

Action 2027-PutnamValleyT-14. Reduce HAB Occurrences

Lead Agency:	Town Board	
Supporting Agencies:	Putnam County Health, NYS DEC, NYS DOH	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☒Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Between 2020 to 2025, harmful algal blooms have occurred at Lake Peekskill, Barger Pond, Oscawana Lake, Wiccopee Reservoir, and Roaring Brook Lake. According to the Harmful Algal Bloom Action Plans developed by NYS DEC for other lakes in Putnam County, the significant sources of phosphorus loading in lakes are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in the lakes can impact recreational opportunities and cause a loss of income.	
Description of the Solution:	The Town will work with Putnam County Health, NYS DEC, and NYS DOH to develop Harmful Algal Bloom Action Plans for various lakes in the Town, and work to accomplish the following actions, as appropriate, to reduce risk: • Construct a wastewater treatment plant and install infrastructure required to connect homes; • Stabilize and reinforce the banks of connecting rivers, creeks, brooks, and streams; • Create riparian buffers along streams to inhibit or restrict nutrient-enriched stormwater runoff and eroded soil from reaching the stream; and • Implement multiple stormwater Best Management Practices (BMPs) to reduce sediment loading into the lakes. This may include the purchase of a street sweeping vacuum truck to prevent sediment and organic debris from entering storm drains, ditches, tributaries, and the lakes.	
Estimated Cost:	High	
Potential Funding Sources:	PCMHAB (NOAA), NWQP (USGS), WEP (USDA), NYS DEC, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3	
Benefits:	Addressing the HAB occurrences in the lakes can contribute to a safer recreational environment.	
Impact on Socially Vulnerable Populations:	Addressing the HAB occurrences in the lakes can contribute to a safer recreational environment.	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	While the lakes are not a critical facility or a lifeline, they are a source of income for the Town during the spring and summer seasons though beach goers, fishing licensing, and boating.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	Increased occurrences in extreme heat can contribute to the growth of excess nutrients in lake environments. Anticipated increases in heavy rains can force additional runoff from surrounding properties toward and into the lakes.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	No longer permit recreational use on lakes in the Town	Loss of income for the Town
	Institute ban on agricultural practices above the grades of all lakes	Loss of income for agriculture sector

Table 10-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-PutnamValleyT-01	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-PutnamValleyT-02	Lovers Lane Bridge	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-PutnamValleyT-03	Undersized Culverts	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-PutnamValleyT-04	Generator for Critical Facility	1	1	1	1	0	0	0	1	1	1	1	1	1	0	**10**	Medium
2027-PutnamValleyT-05	Adam's Corners Stream Rehabilitation	1	1	1	1	0	0	1	1	1	1	1	1	0	0	**10**	Medium
2027-PutnamValleyT-06	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	0	1	1	0	1	**11**	High
2027-PutnamValleyT-07	Risk Reduction Initiative	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2027-PutnamValleyT-08	Lower (south) Wiccopee Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PutnamValleyT-09	Roaring Brook Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PutnamValleyT-10	Lake Peekskill Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PutnamValleyT-11	Upper (north) Wiccopee Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-PutnamValleyT-12	Floradan Estates Dam Outreach	1	1	1	1	0	0	0	1	1	0	1	1	1	0	**9**	Medium
2027-PutnamValleyT-13	Flood Mitigation Along Water Ways	1	1	1	1	0	0	1	1	1	1	1	1	0	1	**11**	High

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-PutnamValleyT-14	Reduce HAB Occurrences	1	0	1	1	1	0	1	1	1	0	1	1	0	1	**10**	Medium

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)

11. TOWN OF SOUTHEAST

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

11.1 HAZARD MITIGATION PLANNING TEAM

The Town of Southeast identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments.

Table 11-1 summarizes the Town officials who participated in the development of the annex. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 11-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Joseph Castellano, Town Supervisor Address: 1360 Route 22, Brewster, NY 10509 Phone Number: 845-279-5345 Email: jcastellano@southeast-ny.gov	Name/Title: Michael Burdick, Highway Superintendent Address: 1360 Route 22, Brewster, NY 10509 Phone Number: 845-279-2141 Email: mburdick@southeast-ny.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Michael Levine, Building Inspector Address: 1360 Route 22, Brewster, NY 10509 Phone Number: (845) 279-2123 Email: mlevine@southeast-ny.gov	
Additional Contributors	
Name/Title: Laurie Bell, Assessor Method of Participation: Coordinate Annual Updated Information	
Name/Title: Christ DuBois, Confidential Secretary to the Town Supervisor Method of Participation: Coordinate Annual Updated Information	
Name/Title: Bruce Bridges, Special Districts Coordinator Method of Participation: Coordinate Annual Updated Information	

11.2 COMMUNITY PROFILE

11.2.1 Community Classifications

Table 11-2 summarizes classifications for community programs available to Southeast.

Table 11-2. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Community Rating System (CRS)	No	-	-
Firewise Communities classification	No	-	-
National Weather Service StormReady Certification	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Communities	No	-	-
NYSERDA Clean Energy Community	Yes	Not Designated	September 5, 2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

11.2.2 Community Profile

The Town was founded in 1788 and was named after its located relative to Putnam County. The Town is governed by a town board consisting of a supervisor and four councilmen.

Table 11-3 through Table 11-6 note land area, population, and building stock information for the Town of Southeast.

Table 11-3. Total Land Area in the Town of Southeast

Jurisdiction	Total Land Area	
	Acres	Square Miles
Southeast (T)	20,042.6	31.3

Source: Putnam County 2024; NYS ITS Geospatial Services 2023
Note: Excludes areas designated as water

Table 11-4. Population Estimates in the Town of Southeast

U.S. Census Bureau 2020 Decennial		2024 ACS 5-Year Estimates	
Total Population	% of County Total	Total Population	% of County Total
15,550	15.9%	15,668	16.0%

Source: U.S. Census Bureau 2020 Decennial Total Population, U.S. Census Bureau 2024 ACS Vulnerable Population
Brewster (V) is 100% within Southeast (T). Subtracted village totals from town to assign correct town totals.

Table 11-5. Vulnerable Populations in the Town of Southeast

Vulnerable Populations - American Community Survey 5-Year Population Estimates (2024)									
Population Over 65		Population Under 5		Non-English Speaking Population		Population with Disability		Population Below Poverty Level	
Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total	Total	% of Jurisdiction Total
3,285	21.0%	882	5.6%	984	6.3%	1,589	10.1%	1,115	7.1%

Source: U.S. Census Bureau 2024 ACS Vulnerable Population
Note: 2.68 persons per household. This number was used to calculate the Non-English Speaking populations.
Note: Brewster (V) is 100% within Southeast (T). Subtracted village totals from town to assign correct town totals.

Table 11-6. General Building Stock in the Town of Southeast

General Building Stock									
All Buildings		Residential		Commercial		Industrial		Other	
Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value	Building Count	Replacement Cost Value
5,488	$5,049,468,784	4,335	$2,533,616,943	1,046	$1,837,695,132	65	$384,909,399	42	$293,247,310

Source: Putnam County 2025, 2026; NYSERDA 2026; NYS 2024; RS Means 2026
Notes: Other = Government, Religion, Agricultural, and Education

11.3 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 Southeast's risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

Each jurisdiction has unique assets, vulnerabilities and overall risk. A multi-jurisdictional plan needs to identify every hazard (from the whole planning area). In hazard mitigation planning, risk is the potential for damage or loss when natural hazards interact with people or assets. These assets may be buildings, infrastructure or natural and cultural resources. A risk assessment is a robust, data-driven analysis. It explains what might happen. It also finds where the local jurisdiction is vulnerable to hazards. Risk is the relationship, or overlap, between hazards and community assets; the smaller the overlap, the lower the risk.

Each community must describe how the selected hazards affect its jurisdiction. Some hazards will have similar effects across the area: extreme temperatures, windstorms, winter weather, drought, heavy rain, etc. Some have a smaller location and will vary based on geography. Multi-jurisdictional plans must explain these differences.

11.3.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Southeast are shown in Figure 11-1 and Figure 11-2. 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 Southeast has significant exposure.

Figure 11-1. Southeast Hazard Area Map #1

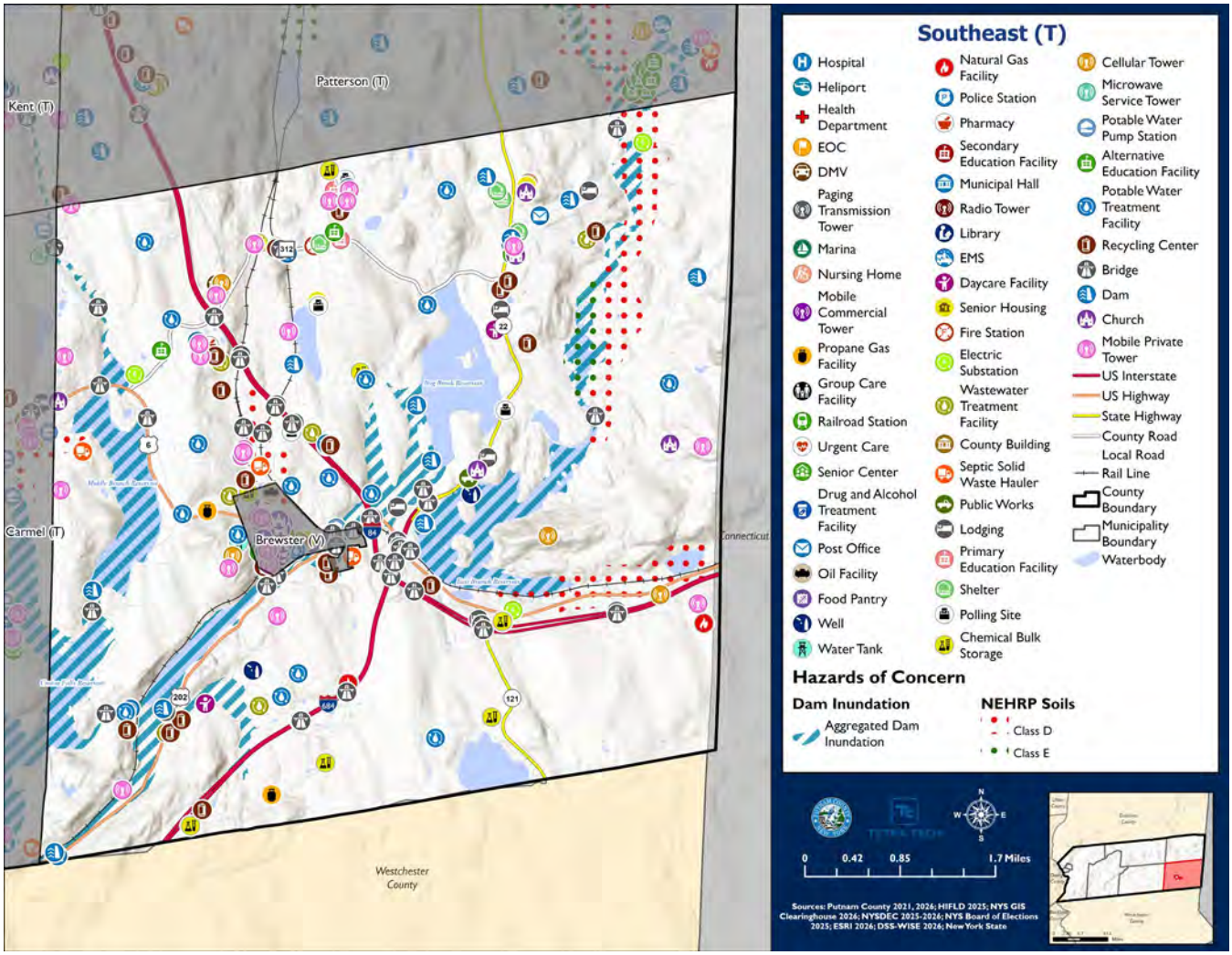
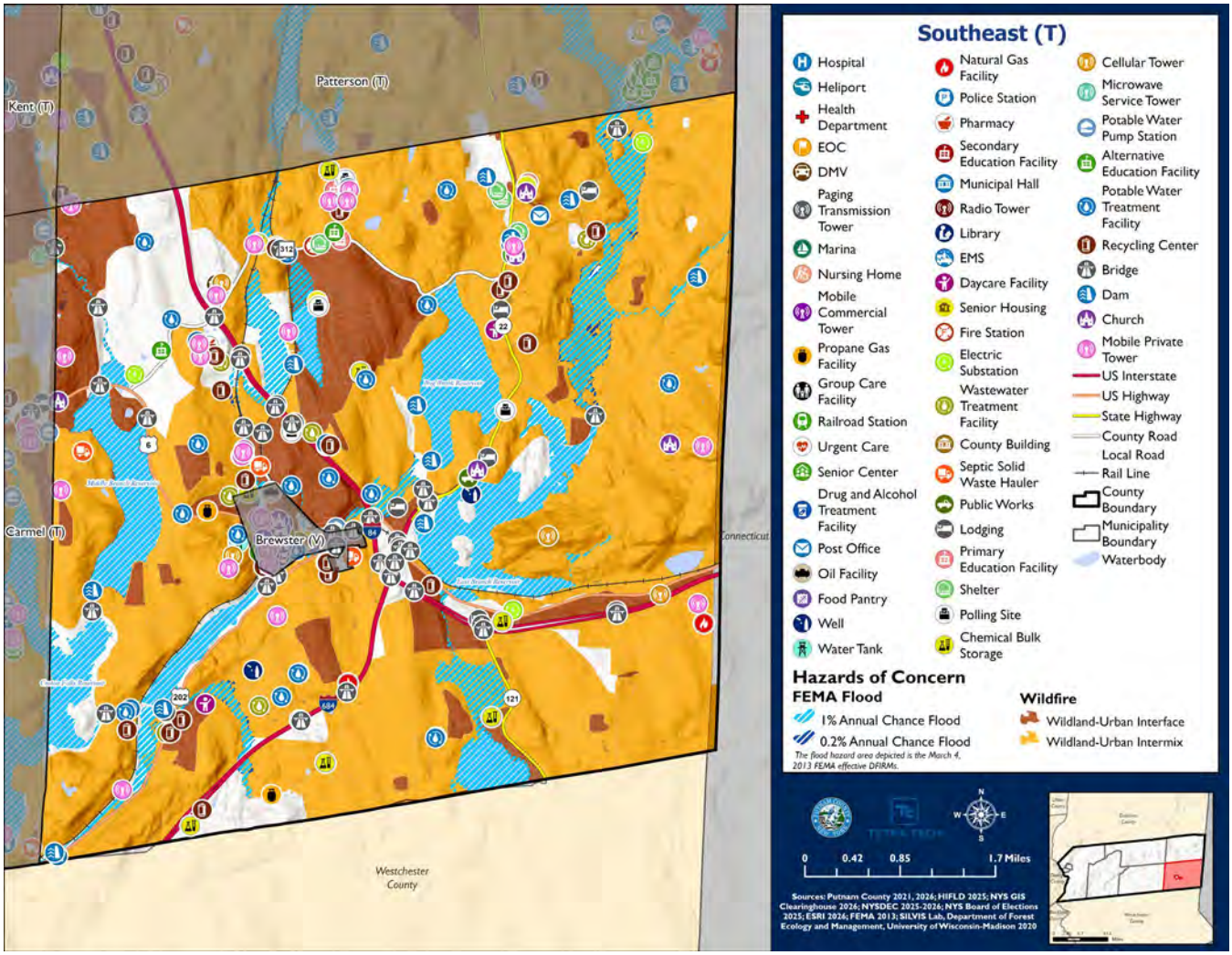


Figure 11-2. Southeast Hazard Area Map #2



11.3.2 Previous Event History

The history of natural and non-natural hazard events in Southeast is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 11-7 and Table 11-8 provide details on the loss and damage in Southeast during hazard events since the last hazard mitigation plan update.

Table 11-7. Presidential Disaster Declarations History in Southeast

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Southeast
January 20, 2020-May 11, 2023	EM-3434-NY DR-4480-NY	COVID-19 Pandemic	The Town abided by social distancing, masking mandates and work from home orders. The County also

Event Date	Declaration Number	Summary of Event	Summary of Damage and Losses in Southeast
August 4, 2020	DR-4567-NY	Tropical Storm Isaias	The Town did not incur any documented damages or losses.
August 21-24, 2021	EM-3565-NY	Hurricane Henri	The Town did not incur any documented damages or losses.
September 1-3, 2021	EM-3572-NY DR-4615-NY	Remnants of Hurricane Ida	The Town did not incur any documented damages or losses.
July 9-10, 2023	DR-4723-NY	Severe Storms and Flooding	The Town did not incur any documented damages or losses.

EM = Emergency Declaration (FEMA)
FEMA = Federal Emergency Management Agency
DR = Major Disaster Declaration (FEMA)

Table 11-8. Hazard Event History in Southeast

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Southeast
April 13, 2020	$50,000	A tree was reported down on US 6 eastbound in Carmel and A downed tree and wires laid were reportedly across NY 9D in both directions north of Main Street in Cold Spring.	The Town did not incur any documented damages or losses.
August 27, 2020	$30,000	A severe thunderstorm resulted in uprooted trees and power lines down.	The Town did not incur any documented damages or losses.
August 12, 2023	$8,000	Multiple severe thunderstorms developed and moved through southeast NY, producing damaging wind gusts. Multiple trees were reported down on Terry Hill Road, Farmers Mill Road near Kentview Drive and on Fair Street near Routh 311 in Lake Carmel NY.	The Town did not incur any documented damages or losses.
September 8, 2023	$10,000	Thunderstorms developed and were severe and produced damaging winds and large hail. A tree with large branches fell on a school bus on Agor Lane in Mahopac with 25 children and a driver inside.	The Town did not incur any documented damages or losses.
May 23, 2024	$5,000	Isolated thunderstorms formed and some were severe and produced damaging winds and large hail. Multiple trees down across the south portion of town on Stoneleigh Avenue, Drewville Road, Weber Hill Road and Seminary Hill Road near Willow Road.	The Town did not incur any documented damages or losses.
June 23, 2024	$57,000	Damaging thunderstorms developed and produced strong winds which resulted in tree and powerline damage throughout the County. Multiple trees were reported on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.	The Town reported multiple trees on a house on Maple Road, a house on Vales Grove, and a house on Lake Shore Drive.
July 17, 2024	$7,000	Strong thunderstorms produced strong winds that knocked trees down in Fahnestock State Park, Shear	The Town reported strong thunderstorms that resulted in

Event Date	Estimated Property Damages	Summary of Event	Summary of Damage and Losses in Southeast
		Hill Road, Belden Road, Garity Boulevard, and Rocco Drive.	trees downed on Garity Boulevard and Rocco Drive.

Note: All events reported resulted in property damages incurred of $5,000 or more at the County level.

11.3.3 Critical Facilities and Exposure to Hazards

Critical facilities and infrastructure are services and facilities that are essential to a society's basic operations and their continuous operation is necessary for the health, welfare and economic viability of communities. These include water treatment, energy, communication systems, hospitals and health care systems, police and fire services and stations, schools, and shelters. The continued operations of critical facilities and infrastructure during and following a disaster are key factors in the severity of impacts and the speed of recovery. Table 11-9 includes an inventory of critical facilities and infrastructure for the Town of Southeast.

Table 11-9. Critical Facilities Flood Vulnerabilities

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Event	0.2% Event		
Putnam Lake	Electric Substation	Y	Y	2027-SoutheastT-02	-
Village of Brewster Wells	Well	Y	Y	2027-SoutheastT-02	-
Water Supply - Brewster	Potable Water Treatment Facility	N	Y	2027-SoutheastT-02	-

Source: Putnam County 2021, 2026; NYSDEC 2025, 2026; ESRI 2026; NYS GIS Clearinghouse 2026; NYS Board of Elections 2025; HIFLD 2025

Note: Twelve bridges and one dam were identified to be located in the flood hazard areas. All bridges and dams, as applicable, within the jurisdiction were constructed to required standards, protecting the structure(s) to the required flood level(s).

11.3.4 Local Hazard Impacts Assessment

Representatives from the Town of Southeast Hazard Mitigation Planning Team assessed impacts of hazards on buildings, structures, facilities, infrastructure, community assets and systems, people and the local economy, shown in Table 11-10.

Table 11-10. Local Hazard Impacts Assessment

Hazard Name	Local Impacts: People, Community Services, Local Economy
Dam Failure	The Town reported no known impacts.
Disease Outbreak	The Town reported no known impacts.
Drought	The Town reported no known impacts.
Earthquake	The Town reported no known impacts.
Extreme Temperatures	The Town reported no known impacts.

Hazard Name	Local Impacts: People, Community Services, Local Economy
Flood	A majority of the existing road systems in the Town have corrugated metal pipes and collapsed catch basins. The Town is vulnerable to flooding from the East Branch of the Croton River. There are repetitive flood losses in the Town as well as critical facilities located within the special flood hazard area.
Harmful Algal Blooms	The Town reported limited use of Tonetta Lake due to harmful algal blooms.
Severe Storm	There is potential for interruption of Electric and Cable Services. The Town Hall was struck by lightning in a July 2026 storm which affected the internet, but no structural damages.
Severe Winter Storm	There are potential temporary road restrictions to enable adequate plowing and EMS responses.
Terrorism	The Town reported no known impacts.
Wildfire	The Town reported no known impacts.

11.3.5 Vulnerable Community Assets

Representatives from the Town of Southeast Hazard Mitigation Planning team assessed specific impacts to the assets included in Table 11-11. If a community asset is not present in the municipality the Planning Team stated, 'Not Applicable.'

Table 11-11. Vulnerable Community Assets

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Agriculture (Crops, Livestock, related products)	Ryder Farm, no known impacts.	**Area: Concentration of Local Businesses, Major Employers**	Village of Brewster, Danbury Road, Route 22, Route 312, Mount Ebo Road South, Fields Lane, Independent Way, International Boulevard, no known impacts.
Area: Concentration of Residences	Fortune Ridge, 9 Condominium Complexes, Brewster Heights, Tonetta Lake Heights, Tonetta Lake Park, no known impacts.	**Local Roads, Highways, Culverts, Bridges**	Roads and culverts repaired and maintained on a schedule.
Municipal Buildings	May be used as heating/cooling centers as needed with generator.	**Medical Centers (non-hospital)**	Not applicable
College/University		**Place of Worship**	May be used as heating/cooling centers as needed, no known impacts.
Community Centers, Parks, Recreational Sites and Local Events (economic drivers such as fairs, beaches, skiing, farming, fishing, etc.)	Lake Tonetta Beach and Park experience harmful algal blooms. Lakeview Manor Community Center (can be used as heating/cooling center as needed with generator).	**Public Transportation including fleets, transportation infrastructure (i.e., railroads, signals, bus/train stops etc.), mobile asset and equipment storage, critical public transit routes, Airport(s)**	No known impacts

Community Asset	Hazard Impacts and Asset Vulnerabilities	Community Asset	Hazard Impacts and Asset Vulnerabilities
Cultural/Historic Buildings/Sites	67 Main Street Museum, Gallery and Old Theater, no known impacts.	**Schools (K-12)**	JFK Elementary School, CVStarr Intermediary School, Wells Middle School, Brewster High School (can be used as heating/cooling center as needed with generator), no known impacts.
Elder-care Facilities	Putnam Ridge Nursing Home with generator, no known impacts.	**Utilities**	NYSEG for electric; Comcast for cable and telephone, occasional interruptions due to severe storms.
Fire/Police Stations	Brewster Fire Department on North Main Street, Brewster Fire Department Sub-Station on Route 312, NYS Police on Route 22, no known impacts.	**Wastewater Treatment Plants**	Blackberry Sewer, Mount Ebo Sewer, Peach Lake Sewer, no known impacts.
Gas Stations, Grocery Stores, Supermarkets	Approximately 13 Gas Stations, 2 Supermarkets, 1 Grocery Store, no known impacts.	**Water: Drinking Water Resources**	Majority are individual private wells; Municipal Systems: Blackberry, Fox Hill, Birch Hill, Springhouse, Brewster Heights, Hillcrest, Peaceable, Mountain Brook, Starr Ridge, no known impacts.
Hospitals	Not applicable	**Other**	Not applicable

11.3.6 Dams

Table 11-12 includes all dams in the Town of Southeast. This dam data is sourced from NYSDEC's inventory of dams and lists selected attributes of each dam. The dam classification (high, medium or low) corresponds to dam hazard classifications:

- **Class A: Low Hazard** - Dam failure may cause relatively minor economic or environmental damage.
- **Class B: Intermediate Hazard** - Dam failure may cause significant economic or environmental damage, but loss of life is not expected. There are about 570 Intermediate Hazard dams in New York.
- **Class C: High Hazard** - Dam failure may cause loss of life or other severe consequences. There are about 427 High Hazard dams in New York.
- **Class D: No Hazard** - Dams which have failed or have been removed and no longer present a risk.

In 2019, the Federal Emergency Management Agency (FEMA) announced the High Hazard Potential Dam (HHPD) Rehabilitation Grant Program, which has the potential to enhance New York's Dam Safety Program by providing technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible High Hazard Potential Dams (Class C dams).

Class C, or High Hazard Potential dams, are attributed to any dam whose failure or mis-operation will cause loss of human life and significant property damage. However, dams with other classifications may still present real and present risks to people and property.

Table 11-12. Dams Located in Southeast

State ID	Name	River Name	Owners	Owner Type	Purposes	Classification
231-2931	Lounsbury Wildlife Pond #1 Dam	TR-E BR CROTON RIVER	R C & A B LOUNSURY	N/A	Other	Low Hazard Dam
231-2944	Lounsbury Wildlife Pond #2 Dam	TR-E BR CROTON RIVER	RICHARD LOUNSBURY	N/A	Other	Low Hazard Dam
231-5058	Milltown Estates Dam	SALMON'S DAILY BROOK	Salmons Daily Brook Farms HOA, Inc.	Private	Other	Low Hazard Dam
231-4434	Mt Ebo Corporate Center Dam	TR-EAST BR CROTON RIVER	MT EBO ASSOCIATES	Private	Flood Control and Storm Water Management, Other	Low Hazard Dam
231-4606	Lake Tonetta Dam	TONETTA BROOK	TONETTA LAKE PARK ASSOCIATION	Private	Recreation	Low Hazard Dam
231-4779	Bog Brook Water Control Dam	BOG BROOK	TOWN OF SOUTHEAST	Local Government	Other	Low Hazard Dam
231-0483	Juengst Dam	EAST BRANCH CROTON RIVER	EDWARD KELLY	N/A	Recreation	Low Hazard Dam
231-0496	Diverting Reservoir Dam	EAST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0503	Middle Branch Dam	MIDDLE BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0527	Sodom Dam	EAST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0528	Bog Brook Dam #2	TR-EAST BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam
231-0528A	Bog Brook Dam #1	TR-E BRANCH CROTON RIVER	NYCDEP DAMS EAST OF THE HUDSON RIVER	Local Government	Water Supply - Primary	High Hazard Dam

Instructions: Please provide any information about dam risk in your community in the grey box below.

New York City DEP made major improvements to three major dams.

11.3.7 Hazard Risk 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 probability of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; spatial extent of the impacts from the hazard; level of warning time; and duration of the event. Impacts from a particular hazard may have decreased due to an implemented project or relocation of an asset that was previously at risk. Alternatively, risk may have increased because population has increased in a hazard prone area.

Table 11-13 identifies the preliminary hazard ranking for Southeast, whether the Town agrees or disagrees with the preliminary ranking, the desired ranking, and the justification or supporting information for the change in hazard ranking. Mitigation actions were developed for all high-ranked hazards as presented in the jurisdictional annexes. For jurisdictions that do not have two or more high rankings, medium rankings that have associated actions can be considered as hazards of concern.

Table 11-13. Hazard Ranking

Hazard Name	Preliminary Ranking	Agree or Disagree with Ranking	If Disagree, Identify New Ranking	Justification for Change of Ranking	Final Hazard Ranking
Dam Failure	Low	Agree	-	NYC made major improvements to their 3 major dams	Low
Disease Outbreak	Medium	Disagree	Low	Lessons learned from COVID-19	Low
Drought	High	Disagree	Low	No known concerns relating to drought	Low
Earthquake	Low	Agree	-	-	Low
Extreme Temperatures	Medium	Disagree	Low	The Town works with the County to advertise heating and cooling shelters.	Low
Flood	Medium	Agree	Medium	-	Medium
Harmful Algal Blooms	Low	Disagree	Medium	Concerns relating to Tonetta Lake	Medium
Severe Storm	High	Disagree	Medium	-	Medium
Severe Winter Storm	High	Disagree	Medium	-	Medium
Terrorism	Low	Agree	-	-	Low
Wildfire	Medium	Disagree	Low	No recent wildfire events	Low

11.4 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 11-14 through Table 11-17.

11.4.1 Development and Permitting

Table 11-14. Development and Permitting Capability

Topic	Comment
Does your municipality or the county issue building permits for development in your community?	Yes, Building Department and Enforcement
What is your process for tracking building permits?	M6 Software
Are permits tracked by hazard area? (For example, floodplain development permits.)	No
Does your community have a buildable land inventory? If yes, please describe.	No, The Town has development spread throughout the Town set among reservoirs and parkland.

Table 11-15. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	3	0	2	5
Permits within SFHA	0	0	0	0
2021				
Total Permits	12	1	3	16
Permits within SFHA	0	0	0	0
2022				
Total Permits	6	0	0	6
Permits within SFHA	0	0	0	0
2023				
Total Permits	8	3	2	13
Permits within SFHA	0	0	0	0
2024				
Total Permits	8	0	3	11
Permits within SFHA	0	0	0	0
2025				
Total Permits	12	0	0	12
Permits within SFHA	0	0	0	0

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

Table 11-16. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Fortune Ridge	Residential	103 single family	Off Deans Corner Rd	N/A	+/- ¾ built out, still building

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Brewster Subaru	Commercial	Car Dealership	Danbury Road	N/A	Completed
Restaurant Depot	Commercial	Wholesale Food	Danbury Road	N/A	Completed
Dykeman's Corp Park	Commercial	1 20K Warehouse	Route 312	N/A	Completed
Ace Endico Addition	Commercial	Warehouse Addition	International Blvd	N/A	Completed
Alfacor	Commercial	2 Warehouses	Fields Lane	N/A	Completed
280 Fields Lane	Commercial	1 Warehouse	Fields Lane	N/A	Completed
Drew Realty	Commercial	1 Warehouse	Fields Lane	N/A	Completed
Lincoln Logistics	Commercial	2 Distribution Centers	Pugsley Road	N/A	Completed
Enterprise	Commercial	1 Warehouse/Off	Route 22	N/A	Completed
Palladino	Commercial	Warehouses/Offices/ Showroom	Old Doansburg Road	N/A	Completed
Barrett Hill	Residential	148 Rental Appartments	Monticello Drive	N/A	Completed

Table 11-17. 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 Zones*	Description / Status of Development
Alfacor	Commercial	1 Warehouse	Fields Lane	N/A	Pending Final Approval
Rraci's Starr Rdge	Commercial	4 Retail Buildings	Starr Ridge Road	N/A	Site Plan Review
PLDC, LLC	Commercial	2 Warehouse/Off	Zimmer Road	N/A	Pending Final Approval
2 Geneva Road	Commercial	1 Warehouse	2 Geneva Road	N/A	Site Plan Review
Laborers Local 60	Commercial	1 Warehouse/Off	25 Independent Way	N/A	Pending Final Approval

11.5 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 11-1 is responsible for maintaining this information.

11.5.1 NFIP Statistics

Table 11-18 summarizes the NFIP policy and claim statistics for the Town of Southeast.

Table 11-18. Southeast NFIP Summary of Policy and Claim Statistics

NFIP Community Number	361041#
FEMA 2020 NFIP Data	
# Policies	43
# Claims (Losses)	13
Total Losses Claimed	$27,544
# Repetitive Loss Properties (NFIP definition)	2
# Repetitive Loss Properties (FMA definition)	-
# Severe Repetitive Loss Properties	-
FEMA 2026 Aggregated Data	
Number of Losses	13
Repetitive Loss Events	4
Net Building Payment	$390,270
Net Contents Payment	$35,316
Total Net Payment	$425,585

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 2020, 2026

Note: "-" = information unavailable

11.5.2 National Flood Insurance Program (NFIP) Flood Vulnerability Summary

The HMP Team provided information on participation in and continued compliance with the NFIP in Table 11-19.

Table 11-19. NFIP Summary

NFIP Topic	Comments
Describe areas prone to flooding in your jurisdiction.	Areas adjacent to brooks, streams and rivers
Who is the Community Floodplain Administrator (FPA)? Do they serve any roles other than FPA? Do they have adequate training and capacity for this role?	The Building Inspector serves as the FPA and has adequate training.
What local department is responsible for floodplain management?	The Building Inspector is hereby appointed Local Administrator to administer and implement this local law by granting or denying floodplain development permits in accordance with its provisions

NFIP Topic	Comments
Are there any certified floodplain managers on staff in your jurisdiction?	No
What is the local law number or municipal code of your flood damage prevention ordinance?	Local Law #1 of 2013
What is the date that your flood damage prevention ordinance was last amended?	February 6, 2013
When was the latest effective Flood Insurance Rate Map (FIRM) adopted, if applicable?	March 4, 2013
Explain NFIP administration services (e.g., permit review, inspections, engineering capability, GIS, etc.)	Permitting, Inspections and GIS
What are the barriers to running an effective NFIP program in your community, if any?	None
Does your floodplain management staff need any assistance or training to support its floodplain management program? If yes, what type of assistance/training is needed?	Training provided by NYS Division of Codes
How do you make Substantial Damage determinations? What is the process to make sure these structures are brought into compliance?	Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	"Substantial improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. The term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Zero
Does the community track the number of buildings in the floodplain? If so, how many structures are in special flood hazard area (SFHA)?	No
How many structures (residential and non-residential) are exposed to flood risk within the community outside of the regulatory maps?	Unknown
Does the community maintain elevation records? If yes, please describe.	As provided during permitting
Describe any areas of flood risk with limited NFIP policy coverage.	Unknown
How does the community teach property owners or other stakeholders about the importance of flood insurance?	Interested property owners inquire to insurance providers
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does your community use?	FEMA NFHL and FEMA NFHL Flood map
Are there other local ordinances, plans or programs (e.g., site plan review) that support	Yes, where applicable during site plan review

NFIP Topic	Comments
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?	

11.6 JURISDICTIONAL CAPABILITY INVENTORY AND ASSESSMENT

Southeast 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 Southeast to identify opportunities for integrating mitigation concepts into ongoing Town procedures.

11.6.1 Planning and Regulatory Capability and Integration

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 11-20 and Table 11-21 detail the available planning and regulatory capabilities of the Town.

Regulatory Capabilities

Table 11-20. Regulatory Capabilities in Southeast

Capability Type	In Place in Municipality? Yes or No	Is the ordinance an effective measure for reducing hazard impacts? Is it adequately administered and enforced? Can this ordinance be expanded / improved to reduce risk?	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Building Codes	Yes	NYS Uniform and Energy Code 2020; Regulated at local and state levels. The Uniform Code (19 NYCRR Parts 1219 to 1229) now includes the 2015 editions of the code books published by the International Code	NYS Uniform and Energy Code	Building Dept.

Capability Type	In Place in Municipality? Yes or No	Is the ordinance an effective measure for reducing hazard impacts? Is it adequately administered and enforced? Can this ordinance be expanded / improved to reduce risk?	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		Council (the "2015 I-Codes"), as amended by the publication entitled the 2017 Uniform Code Supplement (publication date: July 2017). Article 18 of the Executive Law (§§ 370 through 383) establishes the State Fire Prevention and Building Code Council, directs the Code Council to promulgate and maintain the Uniform Code, and charges each city, town, and village in the State (with the exception of the City of New York) with the duty of administering and enforcing the Uniform Code within its municipal boundaries. •Chapter 54, Building Construction and Fire Prevention, last amended 06-08-2007. There is hereby created in the Town of Southeast a Building and Fire Prevention Department which shall be charged with enforcement of the Uniform Code and with enforcement of Chapters 55, 69, 71, 74, 105, 112, 122, 123 and 138 of the Code of the Town of Southeast. •No land shall be altered and no building or part thereof or any major feature of the equipment shall hereafter be moved, erected, constructed, reconstructed, demolished, extended or altered except in conformity with the Uniform Code, the applicable provisions of the Town Code.		
Climate Change Ordinance	No	-	-	-
Emergency Management Ordinance	No	-	-	-
Environmental Protection Ordinance	No	-	-	-
Flood Damage Prevention Ordinance	Yes	•It is the purpose of this chapter to; A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; C. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters; D. Control filling, grading, dredging and other development which may increase erosion or flood damages; E. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands, and; F. Qualify for and maintain participation in the National Flood Insurance Program.	Ch. 74 - State mandated BFE+2 for new construction and substantial improvement	Building Dept – Building Inspector

Capability Type	In Place in Municipality? Yes or No	Is the ordinance an effective measure for reducing hazard impacts? Is it adequately administered and enforced? Can this ordinance be expanded / improved to reduce risk?	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
Growth Management	No	-	-	-
Municipal Separate Storm Sewer System (MS4)	Yes	This article sets forth uniform requirements for direct and indirect contributors into the wastewater collection and treatment system for the Town of Southeast and enables the Town to comply with all applicable state and federal laws required by the Clean Water Act of 1977 and the general pretreatment regulations (40 CFR 403). This article also establishes methods for controlling the introduction of pollutants into the Town's storm sewer system in order to comply with requirements of the SPDES general permit for municipal separate storm sewer systems (MS4s).	Chapter 112	Highway/Planning
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	No	-	-	-
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
Real Estate Disclosure Requirements	Yes	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.	Property Condition Disclosure Act, NY Code - Article 14 §460-467	NYS Department of State, Real Estate Agent
Site Plan Code	Yes	The authority to require site plan review is derived from the State enabling Statutes (General City Law s. 27-a, Town Law s. 247a, Village Law s. 7-725a)The local legislative body has the power to delegate site plan review to the planning board, zoning board, etc	Ch. 123	Planning
Stormwater Management Code	Yes	The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within the Town of Southeast.	Ch. 119	Town Board
Subdivision Code	Yes	The Planning Board of the Town of Southeast is authorized and empowered to approve plats showing lots, blocks or sites, with or without streets or highways, to approve the development of entirely or partially undeveloped plats already filed in the office of the Clerk of the county and to conditionally approve	Ch. 123	Planning

Capability Type	In Place in Municipality? Yes or No	Is the ordinance an effective measure for reducing hazard impacts? Is it adequately administered and enforced? Can this ordinance be expanded / improved to reduce risk?	Ordinance Name or Chapter and Year	Responsible Department / Agency / Organization
		preliminary plats within the part of the Town of Southeast outside the limits of the Village of Brewster.		
Wellhead Protection	No	-	-	-
Zoning/Land Use Code	Yes	This chapter regulates and restricts the location, construction and use of buildings and structures, the use of land and the area, shape and frontage of building lots in order to promote health, safety, morals and general welfare of the Town; to implement a Comprehensive Plan; to lessen congestion in the streets; to secure safety from fire, flood, panic and other dangers; to promote health and general welfare.	Ch. 138	Building Dept.

Planning Capabilities

Table 11-21. Planning Capabilities in Southeast

Capability Type	In Place in Municipality? Yes or No	Does the plan address hazards? Can the plan be used to develop or implement mitigation actions? How can the plan be improved? How can it be integrated with the goals, objectives and proposed actions of this HMP?	Plan Name and Year	Responsible Department / Agency / Organization
Agriculture Plan	No	-	-	-
Business / Downtown Revitalization / Development Plan	No	-	-	-
Climate Adaptation / Resilience Plan	No	-	-	-
Comprehensive Plan	Yes	Town of Southeast Comprehensive Plan Update seeks to balance a healthy economic environment with quality residential and commercial character while protecting the integrity of its natural resources and infrastructure.	Adopted in 2010	Town Board
Continuity of Operations Plan	No	-	-	-
Capital Improvement Plan	No	-	-	-
Community Wildfire Protection Plan	No	-	-	-
Comprehensive Emergency	Yes	County		

Capability Type	In Place in Municipality? Yes or No	Does the plan address hazards? Can the plan be used to develop or implement mitigation actions? How can the plan be improved? How can it be integrated with the goals, objectives and proposed actions of this HMP?	Plan Name and Year	Responsible Department / Agency / Organization
Management Plan (CEMP)				
Disaster Debris Management Plan	No	-	-	-
Economic Development Plan	No	-	-	-
Emergency Operations Plan	No	-	-	-
Floodplain Management or Watershed Plan	No	-	-	-
Habitat Conservation / Wildlife Management Plan	Yes	Element of Comprehensive Plan The long-eared bat and bog turtle habitats are considered during planning approvals.	-	-
Local Waterfront Revitalization Plan	No	-	-	-
Open Space Plan	No	-	-	-
Post-Disaster Recovery Plan	No	-	-	-
Public Health Plan	Yes	County	-	-
Sheltering Plan	-	The Town of Southeast has a plan in place with the Brewster School District for the High School Building	-	-
Stream Corridor Management Plan	No	-	-	-
Stormwater Management Plan	Yes	The Town of Southeast has developed a Stormwater Management Program (SWMP) to reduce pollutants entering water bodies within the Town during rain events. The Town contributes stormwater flow to 6 waterbodies that have been listed by the New York State Department of Environmental Conservation as impaired. Five (5) of those waterbodies are part of the New York City Watershed, known as the Croton Watershed system.	Stormwater Management Plan	MS4 Administrator
Substantial Damage Response Plan	No	-	-	-
Threat and Hazard Identification and Risk Assessment (THIRA)	No	-	-	-
Transportation Plan	No	-	-	-

Capability Type	In Place in Municipality? Yes or No	Does the plan address hazards? Can the plan be used to develop or implement mitigation actions? How can the plan be improved? How can it be integrated with the goals, objectives and proposed actions of this HMP?	Plan Name and Year	Responsible Department / Agency / Organization
Watershed Management of Protection Plan	No	-	-	-
Other	No	-	-	-

11.6.2 Administrative and Technical Capability

Administrative and technical capabilities include the available staffing and subject matter experts available to prevent and reduce the impacts of hazards. Table 11-22 details the available administrative and technical capabilities of the Town.

Table 11-22. Administrative and Technical Capabilities

Capability Type	In Place in Municipality? Yes or No	Is each kind of staffing listed below adequate to enforce regulations? Has this kind of staff been used to assess/mitigate risk in the past / is currently? Is staff in need of additional resources or training?
Civil Engineer	No	Contracted
Construction/Building/Code Enforcement Department	Yes	Building Department
Economic Development Commission/Committee	No	Via Putnam County IDA
Emergency Management/Public Safety Department	No	Via Putnam County BES
Environmental Commission/Specialist	No	-
Grant Writer	Yes	Several
Maintenance Programs to Reduce Risk	Yes	Highway Department undertakes proactive maintenance projects
Mitigation Planning Committee	No	-
Mutual Aid Agreements	Yes	County/FD Mutual aid
Open Space Board/Committee	No	-
Personnel skilled or trained in website development	Yes	Planning Department and Town Clerk
Planning Board	Yes	The Town of Southeast Planning Board office accepts and processes land use applications as follows: Applications for construction, renovation or changes in the use of commercial structures Subdivision of land, both residential and commercial

Capability Type	In Place in Municipality? Yes or No	Is each kind of staffing listed below adequate to enforce regulations? Has this kind of staff been used to assess/mitigate risk in the past / is currently? Is staff in need of additional resources or training?
Planning Department	No	Planning
Personnel skilled or trained in GIS and/or HAZUS-MH applications	Yes	Contracted
Planner or Engineer with knowledge of land development and land management practices	Yes	Contracted
Planners or engineers with an understanding of natural hazards	Yes	Contracted
Professionals or Engineers trained in construction practices related to buildings and/or infrastructure	Yes	Building Department
Professionals trained in conducting damage assessments	Yes	Building Department
Public Works/Highway Department	Yes	Highway Department
Resilience Officer	No	-
Staff with expertise/training in benefit/cost analysis	Yes	
Surveyor(s)	Yes	Contracted
Zoning Board of Appeals	Yes	
Other		

11.6.3 Fiscal Capability

Table 11-23 summarizes financial resources available to Southeast.

Table 11-23. Fiscal Capabilities

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital improvement 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

Capability Type	Has this funding capability been used since the last plan? If yes, please describe.
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes (Open space, special tax districts)
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal (non-FEMA) funding programs	No
FEMA funding programs	No
Other State funding programs	No
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

11.6.4 Education and Outreach Capability

Table 11-24 includes education and outreach programs and methods already in place that could be used to carry out mitigation activities and communicate information about hazards.

Table 11-24. Education and Outreach Capabilities

Capability Type	Is this education and outreach capability currently in use in the Municipality? If yes, please describe.
Community Newsletter	No
Hazard awareness campaigns, such as school and community programs and events	No
Hazard mitigation information available on your website	Yes, Snow Storm Tips and Stormwater Management
Local News	No
Natural disaster/safety programs in place for schools	Not applicable
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No
Public information officer or communications office	Yes, Town Clerk
Social media for hazard mitigation education and outreach	No
Warning systems for hazard events	Yes, Putnam County BES

11.6.5 Hazard Capability Assessment

Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The HMP Team ranked the local government's capability to address risks and impacts of each hazard based on the risk and capability assessments performed above. Table 11-25 shows the ranking.

- ***Strong:*** *Above average capability exists and effectively manages the impacts of this hazard.*

- ***Moderate:*** *Average capability exists but needs some improvement.*
- ***Weak:*** *Below average capability exists and needs substantial improvement.*
- ***None:*** *Capacity does not exist.*
- ***N/A:*** *This hazard is not a risk to the community.*

Table 11-25. Adaptive Capacity

Hazard	Strong, Moderate, Weak, None, N/A
Dam Failure	Strong
Disease Outbreak	N/A
Drought	N/A
Earthquake	N/A
Extreme Temperatures	N/A
Flood	Strong
Harmful Algal Blooms	Strong
Severe Storm	N/A
Severe Winter Storm	N/A
Terrorism	N/A
Wildfire	N/A

11.7 MITIGATION STRATEGY AND PRIORITIZATION

This section discusses the status of mitigation actions from the previous HMP, describes proposed hazard mitigation actions, and prioritizes actions to address over the next five years.

11.7.1 Past Mitigation Action Status

The tables below indicate progress on the Town's mitigation strategy identified in the 2021 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.

Status of Previous Mitigation Actions

T. Southeast-1—Maple Road Culvert Replacement	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	Town of Southeast Highway Superintendent
Action Location	-
Summary of Original Problem	The existing 3 foot diameter steel pipe is undersized resulting in flooding and over topping of roadway. Also the rubble stone head walls are deteriorated and in need of replacement. The roadway was over topped during both recent severe storms.
Summary of Solution (Project)	The proposed mitigation is to replace the existing pipe and head wall with an adequately sized concrete box culvert. An appropriately sized box culvert would safely pass the storm water runoff from all storm events, eliminating the roadway flooding.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Completed

T. Southeast-2—Brewster Hill Road Culvert Replacement	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	Town of Southeast Highway Superintendent
Action Location	-
Summary of Original Problem	The problem is an undersized metal culvert under Brewster Hill Road which causes flooding and over topping of roadway in severe storm events. Due to the condition of the culvert and the recent flooding the potential exists for a major failure in the future.
Summary of Solution (Project)	The proposed mitigation would be to install an adequately sized concrete box culvert that will safely convey the runoff flow from severe storm events without over topping the road and eliminate the potential for future flooding or culvert failure
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Completed

T. Southeast-3—Dredging of Peach Lake Outlet Channel	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	Town of Southeast Highway Superintendent
Action Location	-
Summary of Original Problem	Over time the outlet channel from Peach Lake has become filled with soil and vegetation to the extent that flow is restricted. This has caused reported higher water surface elevations in the lake and is particularly problematic during severe storms.
Summary of Solution (Project)	The mitigation for this condition would be to dredge the outlet channel of accumulated sediment and improve the outlet flow so as to alleviate flooding conditions around the lake.
Action Category	NRP, NR
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Completed

T. Southeast-4— Southeast Stormwater Repair	
Hazards Addressed	Flood, Severe Storm
Lead Agency / Department	Town Highway Department
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	All corrugated pipe is failing. A majority of the existing road system has corrugated metal pipe; roads sink and catch basins collapse. Replacement is complicated by underground utilities
Summary of Solution (Project)	Assessment and upgrades of stormwater conveyance network: Location: Town-wide Mitigation Project/Initiative: Conduct comprehensive assessment of stormwater conveyance network. Town has a long term plan to replace all corrugated pipe with plastic pipe, related to MS4 program.
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	There is an ongoing long-term plan in place to replace all corrugated pipe with plastic.
If discontinue, explain why	

T. Southeast-5—Southeast Road Repair	
Hazards Addressed	Severe Storm, Severe Winter Storm
Lead Agency / Department	Town Highway Department
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Road beds are failing. Some were built substandard with no proper base and poor drainage. Private roads have provided only one point of ingress/egress as gates block secondary access. Locations include: •Indian Wells, between Indian Wells and Gage. Private driveway •Enoch Crosby road and Peter Road •State Line Road.
Summary of Solution (Project)	The Town prioritizes roads for maintenance schedule, and will conduct upgrades and mitigation at that time. Resurface and address drainage roads in Brewster Hill, Maple Road and Cobb Road Culvert-outstanding fixes
Action Category	SIP, SP
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	Ongoing upgrades and mitigation are being made
If discontinue, explain why	-

T. Southeast-6—Southeast Risk Reduction	
Hazards Addressed	All Hazards
Lead Agency / Department	Putnam County
Supporting Agency / Department	supported by relevant local department leads
Action Location	-
Summary of Original Problem	The Town has identified a need to enhance training for officials and build capacity for emergency response and risk reduction capabilities.
Summary of Solution (Project)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically: •Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation. (PCBES-1). •Workshops and Seminars to build local capabilities in floodplain management and disaster recovery (PCBES-11), potentially to include: o NFIP Community Rating System (CRS) o Benefit-Cost Analysis (BCA) o Substantial Damage Estimating (SDE) o NFIP Elevation Certificates (EC) o Certified Floodplain Manager (CFM) Training and Certification o County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	-
If discontinue, explain why	-

T. Southeast-7—Southeast HABS Mitigation	
Hazards Addressed	Harmful algal blooms
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Southeast is impacted by harmful algal blooms at its lake caused by a variety of factors
Summary of Solution (Project)	Explore water quality improvements and algal bloom mitigation at Peach Lake and the outlet channel.
Action Category	NSP, NR
Current Status – Please select one:	In-Progress – Project Underway
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	
If discontinue, explain why	Filtration system installed; additional upgrades to continue

T. Southeast-8—Southeast Flood Mitigation	
Hazards Addressed	Flood
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	The Town is vulnerable to flooding from the East Branch of the Croton River. There are repetitive flood losses in the Town as well as critical facilities located within the special flood hazard area.
Summary of Solution (Project)	Explore non-structural flood mitigation projects to reduce flood damage. Conduct outreach to critical facility owners. Identify drainage “hotspots” and develop mitigation measures like stormwater infrastructure rule changes, new drainage systems, and erosion-arresting measures.
Action Category	EAP, PI
Current Status – Please select one:	Proposed - Not Started
Next Steps	
Include in the 2027 HMP or Discontinue?	Include
If include, revise/reword as appropriate:	-
If discontinue, explain why	-

T. Southeast-9—Southeast Vegetation Management	
Hazards Addressed	Severe Storm; Severe winter Storm
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	-
Action Location	-
Summary of Original Problem	Southeast is vulnerable to electric outages during storms. Electric outages cause individual home water/wastewater systems to fail.
Summary of Solution (Project)	Develop a tree trimming/vegetation management program that identifies corridors with high susceptibility to trees that can down wires. Explore opportunities for expanding public water/sewer service to reduce reliance on household pumps
Action Category	LPR, PR
Current Status – Please select one:	Discontinue – Ongoing Capability
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	This action is ongoing.

T. Southeast-10—Cobb Road Culvert Replacement	
Hazards Addressed	Flood; Severe Storm
Lead Agency / Department	Town of Southeast
Supporting Agency / Department	Town of Southeast Highway Superintendent
Action Location	-
Summary of Original Problem	The existing culvert pipe is undersized resulting in flooding and over topping of roadway
Summary of Solution (Project)	Replace pipe under road with larger size.
Action Category	SIP, SP
Current Status – Please select one:	Completed
Next Steps	
Include in the 2027 HMP or Discontinue?	Discontinue
If include, revise/reword as appropriate:	-
If discontinue, explain why	Completed

11.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed above, the Town of Southeast identified the following mitigation efforts completed since the last HMP:

- Routine upsize of culverts.

11.7.3 Identified Issues

The Town of Southeast has identified the following vulnerabilities within their community for mitigation strategy development:

- Tonetta Lake, Peach Lake and the outlet channel are recreational lakes frequently used by residents and tourists. There have been occurrences of harmful algal blooms on the lakes. According to the Harmful Algal Bloom Action Plans developed by NYS DEC for other lakes in Putnam County, the significant sources of phosphorus loading in lakes are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in the lakes can impact recreational opportunities and cause a loss of income.
- There are several critical facilities which are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level. At risk critical facilities include:
  - Putnam Lake electric Substation
  - Village of Brewster Wells
  - Water Supply – Brewster (Potable Water Treatment Facility)
- The Town is vulnerable to flooding from the East Branch of the Croton River, and due to frequent flooding events in the Town of Southeast, there are two repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.

- A majority of the existing road system has corrugated metal pipes that are corroded as well as undersized drainage. Replacement of these pipes and drainage systems are complicated by underground utilities. Undersized and corroded culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system.
- Many of the roads in Town were bult substandard with poor drainage and have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt. Flood prone roads not only interrupt the movement of persons and goods but can lead to isolation issues where first responders are unable to reach their destination and cause evacuation routes to be inaccessible. Flooded roadways may be caused by debris in culverts from severe storms and severe winter storms. Some impacted private roads have provided only one point of ingress/egress.
- The Town is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.
- The Diverting Reservoir Dam is a Class I High Hazard Dam that is located on the Diverting Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including Lower Mine Road, Route 202, among others. In the most recent inspection report of the dam in April 2024, it was found to be maintained with no deficiencies.
- The Middle Branch Dam is a Class I High Hazard Dam that is located on the Middle Branch Reservoir, connecting to the Middle Branch Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential properties, recreational areas, woodland areas, and transportation routes including Drewville Road, Maple Road, Mine Road Ann Drive, among others. The failure of this dam would result in excess water to flow into Croton Falls Reservoir, which is located connected to the Middle Branch Reservoir by the Middle Branch Croton River, and may cause cascading impacts to properties along the waterbodies. The Croton Falls Dam is located on the Croton Falls Reservoir, where additional cascading impacts could be felt. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.
- The Sodom Dam is a Class I High Hazard Dam that is located on the East Branch Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Route 22, Route 202, Sodom Road, among others. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.
- The Bog Brook Dam #1 is a Class I High Hazard Dam that is located on the Big Brook Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Highview Road, Brewster Hill Road, Route 22, among others. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.
- The Bog Brook Dam #2 is a Class I High Hazard Dam that is located on the Big Brook Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Highview Road, Brewster Hill Road, Route 22, among others. The failure of this dam would result in excess water to potentially flow toward Bog Brook Dam #1 and may cause cascading impacts to additional assets. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.

11.7.4 Proposed Hazard Mitigation Actions for the HMP Update

Southeast participated in the mitigation strategy workshop and identified hazard mitigation actions to reduce the risks and impacts of hazards the community ranked as high-risk. Hazard risk ranking was specific to each community in the County and was based on quantitative (i.e., analysis of the best available data) and qualitative risk assessment processes (i.e., evaluation of previous occurrences, likelihood of future occurrences and vulnerabilities to people and community services; buildings and critical infrastructure; the natural environment and other local priorities).

The action worksheets included at the end of this annex list the mitigation actions that Southeast 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 Town priorities.

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 11-26 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Action 2027-SoutheastT-01. Reduce HAB Occurrences

Lead Agency:	Town of Southeast Town Board	
Supporting Agencies:	Tonetta Lake Advisory Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☒Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Tonetta Lake, Peach Lake and the outlet channel are recreational lakes frequently used by residents and tourists. There have been occurrences of harmful algal blooms on the lakes. According to the Harmful Algal Bloom Action Plans developed by NYS DEC for other lakes in Putnam County, the significant sources of phosphorus loading in lakes are phosphorus inputs associated with septic system discharge; phosphorus being released in-lake sediments; and non-point source nutrient inputs from the contributing watershed. Harmful algal blooms in the lakes can impact recreational opportunities and cause a loss of income.	
Description of the Solution:	The Town will work with Putnam County Health, NYS DEC, and NYS DOH to develop Harmful Algal Bloom Action Plans for various lakes in the Town, and work to accomplish the following actions, as appropriate, to reduce risk: • Stabilize and reinforce the banks of connecting rivers, creeks, brooks, and streams; • Ultrasonic Blue-Green Algae Mitigation Units • Create riparian buffers along streams to inhibit or restrict nutrient-enriched stormwater runoff and eroded soil from reaching the stream; and • Implement multiple stormwater Best Management Practices (BMPs) to reduce sediment loading into the lakes. This may include the purchase of a street sweeping vacuum truck to prevent sediment and organic debris from entering storm drains, ditches, tributaries, and the lakes.	
Estimated Cost:	High	
Potential Funding Sources:	PCMHAB (NOAA), NWQP (USGS), WEP (USDA), NYS DEC, ARPA Funds, Town/County Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 3	
Benefits:	Addressing the HAB occurrences in the Lake can contribute to a safer recreational environment.	
Impact on Socially Vulnerable Populations:	Addressing the HAB occurrences in the Lake can contribute to a safer recreational environment.	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	While Tonetta Lake and Peach Lake are not critical facilities or a lifeline, the Lake is a source of income for the Town during the spring and summer seasons though beach goers, fishing licensing, and boating.	
Impact on Capabilities:	Not applicable	
Climate Change Considerations:	Increased occurrences in extreme heat can contribute to the growth of excess nutrients in lake environments. Anticipated increases in heavy rains can force additional runoff from surrounding properties toward and into Casse Lake.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☒Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☒Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☒Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	No longer permit recreational use on lakes in the Town	Loss of income for the Town
	Institute ban on agricultural practices above the grades of all lakes	Loss of income for agriculture sector

Action 2027-SoutheastT-02. Critical Facility Protection

Lead Agency:	Critical Facility Owners and Managers	
Supporting Agencies:	Town Board	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	There are several critical facilities which are located in the special flood hazard area and may be vulnerable to flooding. Critical facilities must be protected to the 0.2% annual chance flood level. At risk critical facilities include: • Putnam Lake electric Substation • Village of Brewster Wells • Water Supply – Brewster (Potable Water Treatment Facility)	
Description of the Solution:	The Town will encourage the facility managers to conduct a feasibility assessment to determine what additional floodproofing measures are needed at the critical facilities to protect it to the 500-year flood level. Facility managers will be informed of potential mitigation measures. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Facility will carry out the chosen option(s).	
Estimated Cost:	Low	
Potential Funding Sources:	FEMA HMA, USDA Community Facilities Grant Program	
Implementation Timeline:	Within 5 Years	
Goals Met:	1, 2	
Benefits:	Ensures continuity of operations of several critical facilities in the Town.	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that at risk populations rely on.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support for both current and future development in the service area.	
Impact on Critical Facilities/Lifelines:	This action will protect critical facilities, maintaining the critical services that it provides.	
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate facilities	Relocation is expensive and results in loss or delay of critical services in the immediate area

	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2027-SoutheastT-03. Repetitive Loss Properties

Lead Agency:	Engineering	
Supporting Agencies:	Town Administration	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Town is vulnerable to flooding from the East Branch of the Croton River, and due to frequent flooding events in the Town of Southeast, there are two repetitive loss properties, based on NFIP data. The properties have experienced repetitively flooding as documented by paid NFIP claims. Without mitigation, the properties will continue to be vulnerable to future flood events.	
Description of the Solution:	The municipality will conduct an outreach program to all repetitive loss properties. The outreach will inform the property owners of this repetitive loss status and provide mitigation alternatives that the property can do to protect the structure from future flood losses. If the property owner is interested in structural mitigation measures, the municipality will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement the mitigation measure chosen (acquisition, elevation, moving).	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Town Budget, County Budget, Property Owners	
Implementation Timeline:	3 Years	
Goals Met:	1, 2, 5	
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.	
Impact on Socially Vulnerable Populations:	Collecting data regarding homeowners that reside within flood prone areas provides an opportunity to introduce location-specific opportunities for assistance. At risk populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.	
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.	
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:	Outreach which promotes the removal of risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed. This action will enhance the Town's current NFIP capabilities.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☒Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Levee around floodplain	Costly, not enough room.
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2027-SoutheastT-04. Southeast Stormwater Repair

Lead Agency:	Engineer, MS4 Coordinator	
Supporting Agencies:	Highway Department, Utility Companies	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	A majority of the existing road system has corrugated metal pipes that are corroded as well as undersized drainage. Replacement of these pipes and drainage systems are complicated by underground utilities. Undersized and corroded culverts may result in the flooding of roadways due to the inability to handle the influx of water. Debris build-up in these pipes may also result in water back-flow, leading to further roadway flooding instances and impacting the integrity of the drainage system.	
Description of the Solution:	The Town Engineer will complete an engineering survey of the drainage systems in Town that are undersized and corroding that may contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Town Highway Department will complete the necessary upsizing for the culverts and will ensure compliance related to MS4 program.	
Estimated Cost:	TBD after study is complete	
Potential Funding Sources:	FEMA HMA, CHIPS, Town Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 5	
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts 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.	
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open. Evacuation routes will remain intact. Access to health and medical facilities will be maintained, both for healthcare workers and the population who require treatment for injuries and illness.	
Impact on Capabilities:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.	
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.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☒Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	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 2027-SoutheastT-05. Floodprone Roads

Lead Agency:	Highway Department	
Supporting Agencies:	Engineering	
Hazards of Concern:	☐Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☒Flood	☐Harmful Algal Blooms ☒Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	Many of the roads in Town were bult substandard with poor drainage and have been weathered and eroded due to impacts from roadway flooding, heavy rains, and snowmelt. Flood prone roads not only interrupt the movement of persons and goods but can lead to isolation issues where first responders are unable to reach their destination and cause evacuation routes to be inaccessible. Flooded roadways may be caused by debris in culverts from severe storms and severe winter storms. Some impacted private roads have provided only one point of ingress/egress.	
Description of the Solution:	The Town will develop specific mitigation solutions for flood-prone road systems after conducting a flood study. Possible solutions may include: • Elevation of roadways • Installation or improvement of drainage systems • Regrading of roadway and soils • Resurfacing or reshaping roadways	
Estimated Cost:	TBD after mitigation technique is chosen	
Potential Funding Sources:	FEMA HMA, Town Budget, CHIPS	
Implementation Timeline:	Within 5 years	
Goals Met:	1	
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.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
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:	This action improves the Town's reliability in terms of transportation.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☒Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Relocate all flood-prone road system	Not feasible
	Raise all flood prone roads	Cost prohibitive

Action 2027-SoutheastT-06. Risk Reduction Initiative

Lead Agency:	Putnam County	
Supporting Agencies:	Town Staff	
Hazards of Concern:	☒Dam Failure ☒Disease Outbreak ☒Drought ☒Earthquake ☒Extreme Temperatures ☒Flood	☒Harmful Algal Blooms ☒Severe Storm ☒Severe Winter Storm ☒Terrorism ☒Wildfire
Description of the Problem:	The Town is interested in enhancing its capacity to withstand hazards and desires to participate in local/region mitigation and risk-reduction capability trainings. Building these capabilities can help the community become more resilient, prepared, and capable of saving lives, protecting property, and recovering quickly after disasters.	

Description of the Solution:	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities, specifically:
	• Re-Establish Local Emergency Planning Committees (LEPCs) within the County, with an emphasis on stronger municipal level participation.
	• Workshops and Seminars to build local capabilities in floodplain management and disaster recovery, potentially to include:
	  ◦ NFIP Community Rating System (CRS)
	  ◦ Benefit-Cost Analysis (BCA)
	  ◦ Substantial Damage Estimating (SDE)
	  ◦ NFIP Elevation Certificates (EC)
	  ◦ Certified Floodplain Manager (CFM) Training and Certification
	• County-Wide Housing Location/Relocation Planning Initiative for Disaster Displaced Residents and Structures	

Estimated Cost:	Low	
Potential Funding Sources:	County Budget, Town Budget	
Implementation Timeline:	1 year	
Goals Met:	1, 2, 4	
Benefits:	This action will improve the Town's overall preparedness for emergency events, increase knowledge of the various hazards which can impact the Town, and inform staff of how to maintain eligibility for the NFIP. Providing an opportunity for staff and officials to become further educated on floodplain management practices and standards can aid in the development of plans and procedures in a way that is conscious of the flood hazard.	
Impact on Socially Vulnerable Populations:	Town staff will become familiar with how to assist displaced persons following an emergency event. Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where at risk populations have historically resided. Safer dwellings may be developed in a less vulnerable location.	
Impact on Future Development:	Officials that understand best practices in floodplain management will have the opportunity to influence future development and prevent unsafe building in flood hazard areas.	
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 the wildfire hazard. With these businesses becoming more resilient, this action would contribute to their continuity of operations.	
Impact on Capabilities:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways to prepare for, plan for, and prevent interruptions in service as a result of a flood.	
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. Officials that attend trainings will have a more confident understanding of floodplain management principles and the basics of NFIP requirements and standards.	
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☒Education and Awareness Programs (EAP)

CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☒Public Information (PI)		☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☒High	☐Medium	☐Low
Alternative	**Action**		**Evaluation**
	No action		Current problem persists
	Take FEMA IS courses		Will increase knowledge, but the information is generalized and not county- or town-specific
	Establish shared service agreements for floodplain administration from neighboring municipalities		Neighboring municipalities are unlikely to have the staff capacity to take on this role

Action 2027-SoutheastT-07. Diverting Reservoir Dam Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Diverting Reservoir Dam is a Class I High Hazard Dam that is located on the Diverting Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, woodland areas, and transportation routes including Lower Mine Road, Route 202, among others. In the most recent inspection report of the dam in April 2024, it was found to be maintained with no deficiencies.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River, Inc. to complete, or share, an engineering study of the Diverting Reservoir Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-SoutheastT-08. Middle Branch Dam Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Middle Branch Dam is a Class I High Hazard Dam that is located on the Middle Branch Reservoir, connecting to the Middle Branch Croton River. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential properties, recreational areas, woodland areas, and transportation routes including Drewville Road, Maple Road, Mine Road Ann Drive, among others. The failure of this dam would result in excess water to flow into Croton Falls Reservoir, which is located connected to the Middle Branch Reservoir by the Middle Branch Croton River, and may cause cascading impacts to properties along the waterbodies. The Croton Falls Dam is located on the Croton Falls Reservoir, where additional cascading impacts could be felt. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River, Inc. to complete, or share, an engineering study of the Middle Branch Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-SoutheastT-09. Sodom Dam Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Sodom Dam is a Class I High Hazard Dam that is located on the East Branch Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Route 22, Route 202, Sodom Road, among others. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River, Inc. to complete, or share, an engineering study of the Sodom Dam to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-SoutheastT-10. Bog Brook Dam #1 Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Bog Brook Dam #1 is a Class I High Hazard Dam that is located on the Big Brook Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Highview Road, Brewster Hill Road, Route 22, among others. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River, Inc. to complete, or share, an engineering study of the Bog Brook Dam #1 to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low

Alternative	Action	Evaluation
	No action	Current problem persists
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.

	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Action 2027-SoutheastT-11. Bog Brook Dam #2 Rehab

Lead Agency:	Dam Owners (NYC DEP Dams East of the Hudson River)	
Supporting Agencies:	County BES, NYS DEC, Municipal Engineer	
Hazards of Concern:	☒Dam Failure ☐Disease Outbreak ☐Drought ☐Earthquake ☐Extreme Temperatures ☐Flood	☐Harmful Algal Blooms ☐Severe Storm ☐Severe Winter Storm ☐Terrorism ☐Wildfire
Description of the Problem:	The Bog Brook Dam #2 is a Class I High Hazard Dam that is located on the Big Brook Reservoir. The dam is owned by the NYC DEP Dams East of the Hudson River. Failure of the dam could result in inundation of residential and commercial properties, recreational areas, woodland areas, and transportation routes including Highview Road, Brewster Hill Road, Route 22, among others. The failure of this dam would result in excess water to potentially flow toward Bog Brook Dam #1 and may cause cascading impacts to additional assets. During the dam's last inspection in March 2024, it was found to be maintained with no deficiencies.	
Description of the Solution:	The Municipal Engineer will encourage the NYC DEP Dams East of the Hudson River, Inc. to complete, or share, an engineering study of the Bog Brook Dam #2 to identify any potential needs for retrofits or improvements. The Town will also request information and input from its Highway department, County Public Works, and NYS DOT regarding impacted roadways. If cost-effective mitigation measures or retrofit options are identified that can increase the level of safety and length of useful life, the Town may choose to support the NYC DEP Dams East of the Hudson River in a search for funding support, permit approval from NYS DEC, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA HMA, HHPD, Dam Owners	
Implementation Timeline:	5 years	
Goals Met:	1, 2, 4, 6	
Benefits:	This action will improve the safety and security of those who live near the dams and increase the resilience of responding agencies.	
Impact on Socially Vulnerable Populations:	The action will result in better preparedness for those living near areas where the dams are located.	
Impact on Future Development:	Future development near the dams will be more secure as safety procedures and inspections are regularly performed on the dams.	
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 and strengthen the structural integrity of dam, as needed.	
Impact on Capabilities:	This action will improve planning and response capabilities through the understanding of responsibilities and procedures.	
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.	
Mitigation Category	☒Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☒Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☒Emergency Services (ES)
Priority	☒High	☐Medium ☐Low
Alternative	Action: No action	Evaluation: Current problem persists

	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss an environmental, flood control, and stormwater management resource.
	Elevate nearby structures	Very high cost and likely not feasible for commercial properties. Will not reduce potential for dam failure due to poor dam conditions

Table 11-26. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	**Total**	
2027-SoutheastT-01	Reduce HAB Occurrences	1	0	1	1	1	0	1	1	1	0	1	1	0	1	**10**	Medium
2027-SoutheastT-02	Critical Facility Protection	1	1	1	1	1	1	0	1	1	1	0	1	1	0	**11**	High
2027-SoutheastT-03	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	0	1	1	0	1	**11**	High
2027-SoutheastT-04	Southeast Stormwater Repair	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**11**	High
2027-SoutheastT-05	Floodprone Roads	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2027-SoutheastT-06	Risk Reduction Initiative	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2027-SoutheastT-07	Diverting Reservoir Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-SoutheastT-08	Middle Branch Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-SoutheastT-09	Sodom Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-SoutheastT-10	Bog Brook Dam #1 Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High
2027-SoutheastT-11	Bog Brook Dam #2 Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	**11**	High

Note: Volume I, Chapter 19 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14)