



24. TOWNSHIP OF VERNON

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

24.1 HAZARD MITIGATION PLANNING TEAM

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

Table 24-1 summarizes Township officials who participated in the development of the annex and in what capacity. Additional documentation of the Township’s planning activities through Planning Partnership meetings is included in Volume I.

Table 24-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Ken Clark, EMC Address: 21 Church Street, Vernon, NJ Phone Number: (973) 600-7612 Email: kclark@vernontwp.com	Name/Title: Dan Young, Police Chief Address: 21 Church Street, Vernon, NJ Phone Number: (973) 764-6155 Email: dbyoung43@vernonpolice.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Paul Black, Construction Official Address: 21 Church Street, Vernon, NJ Phone Number: (973) 764-4055 x2253 Email: pblack@vernontwp.com	
Additional Contributors	
Name/Title: Ken Clark, EMC Method of Participation: Assisted in the completion of municipal worksheets; reviewed and approved final draft annex.	
Name/Title: Mark Vogel, Former Deputy EMC Method of Participation: Assisted in the completion of municipal worksheets.	
Name/Title: Cory Stoner, Township Engineer Method of Participation: Assisted in the completion of municipal worksheets; reviewed and approved final draft annex.	
Name/Title: Jessica Caldwell, Township Planner Method of Participation: Assisted in the completion of municipal worksheets; reviewed and approved final draft annex.	
Name/Title: Ed Babcock, Public Works Superintendent Method of Participation: Assisted in the completion of municipal worksheets; reviewed and approved final draft annex.	
Name/Title: Paul Black, Construction Official Method of Participation: Assisted in the completion of municipal worksheets; reviewed and approved final draft annex.	



Name/Title: Marcy Gianattasio, Municipal Clerk
Method of Participation: Assisted in the completion of municipal worksheets.

Name/Title: Tina Kraus, Business Administrator
Method of Participation: Assisted in the completion of municipal worksheets; reviewed and approved final draft annex.

Name/Title: Lauren Shaw, Municipal Clerk
Method of Participation: Reviewed and approved final draft annex.

Name/Title: Dan Young, Police Chief
Method of Participation: Assisted in the completion of municipal worksheets.

24.2 COMMUNITY PROFILE

Vernon Township is located in the northeast corner of Sussex County. It has a total area of 70.6 square miles. The Township is most populous municipalities and has the largest area in the county. It is bordered to the north by New York State, to the south by Hardyston Township, to the east by Passaic County, and to the west by Wantage Township. The following unincorporated communities are located within the Township: Owens, Willow Brook, Wantage, Independence Corner, McAfee, Sand Hills, Glenwood, Vernon Valley, DeKays, Highlands Lakes, Kampe, Cherry Ridge, and Wawayanda. There are many ponds and streams located throughout the Township and include, but not limited to: Highland Lake, Wawayanda Lake, Lake Wildwood, Double Kill, Wawayanda Creek, Pochuck Creek and its tributaries, Black Creek and its tributaries, and the Walkill River. According to the U.S. Census, the 2020 population for Vernon was 22,358, a 6.6-percent decrease from the 2010 Census.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2021 American Community Survey 5-Year Population Estimates indicates that 15.3-percent of the population is 5 years of age or younger, 14.5-percent is 65 years of age or older, 4.9-percent is non-English speaking, 14.8-percent is below the poverty threshold, and 12-percent is considered disabled.

The Steering Committee also identified households that are above the Federal Poverty Level but earn less than the basic cost of living as socially vulnerable. For the Township of Vernon, 21-percent of households earn less than the basic cost of living and are considered socially vulnerable.

Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

24.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Vernon 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 Vernon to identify opportunities for integrating mitigation concepts into ongoing Township procedures.

24.3.1 Planning and Regulatory Capability and Integration

Table 24-2 summarizes the planning and regulatory tools that are available to Vernon.

Table 24-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
CODES, ORDINANCES, & REGULATIONS				
Building Code	Yes	Chapter 205: Construction Codes, Uniform	State & Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? <i>The State Uniform Construction Code, building subcode, is hereby adopted and incorporated as fully as if set forth at length herein. The provisions shall be controlling in the construction, alteration, renovation, rehabilitation, maintenance, occupancy, and use of all buildings and structures therein contained within the corporate limits of the Township. The Construction Official is the chief administrator of the enforcing agency.</i>				
Zoning/Land Use Code	Yes	Chapter 330: Land Development	Local	Zoning Officer, Code Enforcement Officer
How has or will this be integrated with the HMP and how does this reduce risk? <i>The code enables where appropriate, flexibility of design and development of land in such a manner as to preserve its natural and scenic qualities, protect areas of meaningful ecological value, reduce flood hazards, facilitate the adequate and economical provision of streets and utilities, minimize negative environmental impacts, improve the aesthetic quality of new residential developments, encourage the conservation of energy, increase recreational opportunities, and otherwise promote the planned and environmentally desirable use of land.</i>				
Subdivision Code	Yes	Chapter 330, Article VI: Subdivision and Site Plan Review and Approval	Local	Municipal Land Use Board
How has or will this be integrated with the HMP and how does this reduce risk? <i>Land to be subdivided shall be of such character that it can be used safely for building or development purposes without danger to health or peril from fire, flood, or other menace, and without resulting in significant damage to the ecology of the area in which it is located. Land subject to fire, flood or other hazards shall not be subdivided nor developed for residential purposes, nor for such other uses as may increase danger to health, life, or property, or aggravate a flood hazard, but such land may be set aside for uses as shall not involve such danger nor produce unsatisfactory living conditions.</i>				
Site Plan Code	Yes	Chapter 330, Article VI: Subdivision and Site Plan Review and Approval	Local	Municipal Land Use Board
How has or will this be integrated with the HMP and how does this reduce risk?				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
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Approval of a site plan is required for a) the development or redevelopment of any building, structure or lot or portion thereof for a new use; b) the expansion or relocation of any existing use; or c) any change of use of a building, structure or lot or portion thereof. The Planning Board sets forth appropriate conditions and safeguards which are in harmony with several identified purposes, including drainage. Per the ordinance, a proposed stormwater drainage system shall be adequate to prevent any increase in the rate of surface runoff or otherwise contribute to downstream flooding during a storm of any magnitude, up to and including a one-hundred-year frequency storm.

Stormwater Management Code	Yes	Chapter 330, Article XII: Stormwater Management	Local	Municipal Land Use Board, Township Engineer
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How has or will this be integrated with the HMP and how does this reduce risk?
The purpose of this article is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction. An identified objective of this ordinance is to minimize increases in the volumes and rates of stormwater runoff from land development activities in order to reduce flooding and streambank erosion.

Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?

Real Estate Disclosure Requirements	Yes	Senate Bill 3110; P. L. 2023, c. 93, July 3, 2023	State	Sellers and Landlords of commercial or residential property
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How has or will this be integrated with the HMP and how does this reduce risk?
For leases, the law amends the New Jersey Truth-in-Renting Act, N.J.S.A. 46:8-43 et seq., to require every landlord to notify in writing each of the landlord’s tenants, prior to lease signing or renewal, whether the property is located in the Federal Emergency Management Agency (FEMA) Special Flood Hazard Area (“100-year floodplain”) or Moderate Risk Flood Hazard Area (“500-year floodplain”) and if the landlord has actual knowledge that the rental premises or any portion of the parking areas of the real property containing the rental premises has been subjected to flooding. The law does not apply to (1) landlords who lease commercial space or residential dwellings for less than one month, (2) residential dwellings in a premises containing not more than two units, (3) owner-occupied premises containing not more than three units, or (4) hotels, motels, or other guest houses serving transient or seasonal guests for a period of less than 120 days.

The model notice is to contain the heading “Flood Risk” and questions for the landlord to answer regarding the landlord’s actual knowledge of past flooding of the property. The questions regarding the property being in a FEMA Special or Moderate Risk Flood Hazard Area shall not contain the option for “unknown.” To determine how the questions are to be answered, FEMA’s current flood insurance rate maps for the leased premises area must be consulted. The landlord will be required to answer whether the rental premises or any portions of the parking areas of the real property containing the rental premises ever experienced any flood damage, water seepage, or pooled water due to a natural flood event and, if so, the number of times that has occurred.

The notice to residential tenants must also indicate that flood insurance may be available to renters through FEMA’s National Flood Insurance Program to cover their personal property and contents in the event of a flood and that standard renter’s insurance does not typically cover flood damage.

For sales, the law also amends the New Jersey Consumer Fraud Act, N.J.S.A. 56:8-1 et seq., to require sellers of real property to disclose, on the property condition disclosure statement, whether the property is located in the FEMA Special or Moderate Risk Flood Hazard Area and any actual knowledge of the seller concerning flood risks of the property to the purchaser before the purchaser becomes obligated under any contract for the purchase of the property.

The disclosure statement must contain the heading “Flood Risk” and ask the seller the following questions:

- *Is any or all of the property in the Special Flood Hazard Area (“100-year floodplain”) or a Moderate Risk Flood Hazard Area (“500-year floodplain”) according to FEMA’s current flood insurance rate maps?*



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
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- Is the property subject to any requirement under federal law to obtain and maintain flood insurance on the property? Properties in the Special Flood Hazard Area with mortgages from federally regulated or insured lenders are required to obtain and maintain flood insurance.
- Have you ever received assistance from, or are you aware of any previous owners receiving assistance from FEMA, the U.S. Small Business Administration, or any other federal disaster flood assistance for flood damage on the property? For properties that have received flood disaster assistance, the requirement to obtain flood insurance passes down to all future owners.
- Is there flood insurance on the property? A standard homeowner’s insurance policy typically does not cover flood damage.
- Is there a FEMA elevation certificate available for the property? If so, it must be shared with the buyer. An elevation certificate is a FEMA form, completed by a licensed surveyor or engineer, that provides critical information about the flood risk of the property and is used by flood insurance providers to determine the appropriate insurance rating for the property.
- Have you ever filed a claim for flood damage to the property with any insurance provider? If the claim was approved, what was the amount received?
- Has the property experienced any flood damage, water seepage, or pooled water due to a natural flood event, such as heavy rainfall, coastal storm surge, tidal inundation, or river overflow? If so, how many times?

Not all provisions of this law have become effective at the time of the writing of this plan.

Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

Environmental Protection Ordinance(s)	Yes	Chapter 478: Soil Erosion and Sediment Control, Chapter 483: Soil Removal, Chapter 484: Soil Fill Placement, Chapter 369: Nuclear-Free Zone, Chapter 227: Dumping/Litter, Chapter 440: Pesticides	Local	Construction Code Official or Municipal Engineer; Joint Land Use Board; Zoning Officer; Township Attorney; PD / DOH / NJDEP / Zoning; DOH
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How has or will this be integrated with the HMP and how does this reduce risk?

Chapter 478: Soil Erosion and Sediment Control – The purpose of this chapter is to control soil erosion and sediment damages and related environmental damage by requiring adequate provisions for surface water retention and drainage and for the protection of exposed soil surfaces in order to promote the safety, public health, convenience and general welfare of the community.

Chapter 483: Soil Removal – The Mayor and Township Council of the Township of Vernon find and determine that the unregulated and uncontrolled relocation, filling, excavation and removal of soil on a large scale or for sale or for use other than on the premises has or may result in conditions detrimental to the public safety, health, and general welfare, substantially hampering and deterring the efforts of the Township of Vernon to effectuate the general purpose of municipal planning.

Chapter 484: Soil Fill Placement – The Township Council finds that the unregulated and uncontrolled placement and movement of soil and other mineral deposits can result in conditions detrimental to the public safety, health and general welfare. Such conditions substantially hamper and deter the efforts of the Township to effectuate the general purposes of municipal planning. Soil movement operations and filling operations should relate to the overall physical development of the area within which the operation is located. It is essential that all soil movement operations and filling operations be reviewed and approved by the Township Zoning Officer and/or Township Engineer. All soil movement operations and filling operations must be conceived and operated in such a way that there will be no appreciable harmful effects to the environment. In order to best ensure that all soil movement operations and filling operations are an asset to the Township of Vernon, rather than a liability, all such operations shall adhere to the conditions, restrictions and provisions outlined in this chapter.

Chapter 369: Nuclear-Free Zone – The development, production, storage, deployment, usage, landfilling, fabrication, destruction and transportation of radioactive materials in and through the Township of Vernon is hereby prohibited. The Township Attorney is authorized to take appropriate action to enforce the prohibitions. The prohibitions contained in



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
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this chapter shall not apply to naturally occurring materials containing low, normal or background levels of radiation. This chapter shall not apply to consumer products in general use such as smoke detectors and time pieces. Nor shall it apply to commonly accepted medical uses such as x-rays and pharmaceuticals. This chapter shall not apply to movement for burial or storage elsewhere of radioactive-contaminated soil or other materials.

Chapter 227: Dumping/Litter – The careless, improper, uncontrolled and unauthorized discarding, disposal, or dumping of solid waste, bulky waste, garbage, liquid waste, litter and refuse upon public or private lands, roadways, buildings or in receptacles not owned, leased or occupied by the person doing so is a public nuisance, cause of civic disgrace, a health, fire and safety hazard and pollutant of the environment of and within the Township of Vernon which should be banned, controlled and regulated for the advancement and protection of the public health, safety and welfare. Currently the Township has two ordinances of record each addressing portions of the problem, Ordinance Nos. 85-14 and 93-5. It is determined by the Mayor and Township Council that consolidation of these two separate ordinances into one comprehensive ordinance will result in more efficient advancement of the policy goals encompassed by both and clarify for the agency enforcing same and the public regulated thereby the conduct intended to be addressed and prescribed.

Chapter 440: Pesticides – The purpose of this chapter is to regulate the use and application of pesticides, as herein defined, so as to limit human exposure, prevent contamination of surface and ground water supplies, prevent loss of soil fertility and prevent the destruction or endangerment of those species of wildlife and their habitat not defined as pests under the definition of this chapter.

Flood Damage Prevention Ordinance	Yes	Chapter 275	Federal, State & Local	Construction Official
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How has or will this be integrated with the HMP and how does this reduce risk?

It is the purpose of this ordinance to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed 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, bridges located in areas of special flood hazard;*
- F. Help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;*
- G. Ensure that potential buyers 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.*

Wellhead Protection	Yes	Chapter 330	Local	Land Use Department and Engineering Department
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How has or will this be integrated with the HMP and how does this reduce risk?

Emergency Management Ordinance	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?

Climate Change Ordinance	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?

Other	No	-	-	-
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How has or will this be integrated with the HMP and how does this reduce risk?



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
PLANNING DOCUMENTS				
General/Comprehensive Plan	Yes	Master Plan, December 1995; Re-examined July 2010, December 2011, July 2016, February 2022	Local	Land Use Department and Engineering Department
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>This Master Plan is intended to provide direction to elected and appointed officials, the general citizenry, landowners, developers, and other area governmental entities for short-term and long-term growth and development within Vernon. It is a policy guide for community development decisions, community facility planning and budgeting, and a comprehensive guide for the future development of housing, employment, and cultural and educational opportunities for the Vernon community. The plan must be able to respond to changing conditions such as increased population and demand for public services, housing supply, legislative policies, technological development, and economic circumstances.</i></p>				
Capital Improvement Plan	Yes	Municipal Budget	Local	Township Administrator
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>The municipal budget, which acts as the Township's Capital Improvement Plan, includes various potential projects which may assist in hazard mitigation efforts.</i></p>				
Disaster Debris Management Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
Floodplain Management or Watershed Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
Stormwater Management Plan	Yes	Stormwater Management Plan, March 2023	Local	Land Use Department and Engineering Department
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acre of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities. The plan also addresses the review and update of existing ordinances and other planning documents to allow for project designs that include low impact development techniques. The final component of this plan is a mitigation strategy for when a variance or exemption of the design and performance standards is sought.</i></p>				
Stormwater Pollution Prevention Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
Open Space Plan	Yes	2023 Open Space & Recreation Plan Update	Local	Land Use Department and Planner
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>The Open Space and Recreation Plan provides updated mapping, revisits the 2010 goals and greenways, and offers a short and long-term plan for the municipality. This plan update will help guide future planning by providing a supporting framework for decision-making. Implementing the recommendations in the plan update will protect environmental health, recreational opportunities, and aesthetic character of Vernon Township.</i></p>				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Habitat Conservation Plan	Yes	Wallkill River National Wildlife Refuge Comprehensive Conservation Plan, February 2009	Federal	US Fish and Wildlife Service
How has or will this be integrated with the HMP and how does this reduce risk? <i>This Comprehensive Conservation Plan (CCP) for the Wallkill River National Wildlife Refuge (refuge) was prepared pursuant to the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 6688dd, et seq.; Refuge Improvement Act). An Environmental Assessment (EA), required by the National Environmental Policy Act of 1969 (NEPA), was prepared with the draft CCP.</i> <i>This final CCP presents the combination of management goals, objectives, and strategies that will best achieve the vision for the refuge; contribute to the mission of the National Wildlife Refuge System (Refuge System); achieve refuge purposes; fulfill legal mandates; address key issues; incorporate sound principles of fish and wildlife management, and serve the American public. This CCP will guide management decisions and actions on the refuge over the next 15 years. It will also help communicate priorities to the natural resource agencies of the states of New York and New Jersey, conservation partners, local communities, and the public.</i>				
Economic Development Plan	Yes	Master Plan, December 1995; Re-examined July 2010, December 2011, July 2016, February 2022	Local	Land Use Department and Engineering Department
How has or will this be integrated with the HMP and how does this reduce risk? <i>The purpose of the Economic Development Plan element is to evaluate the economic stability of a community and determine job and/or industry deficiencies. In order to provide a comprehensive view of the present and future economic development of Vernon Township, county-wide and township-wide economic trends are analyzed. Specifically, employment categories and occupational characteristics were reviewed, and commuting patterns discussed. Future employment projections are also presented. A brief review of current tax revenues is also discussed.</i>				
Shoreline Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Wildfire Protection Plan	Yes	Community Wildfire Protection Plan	Local	Fire Department
How has or will this be integrated with the HMP and how does this reduce risk? <i>The plan has goals to reduce the vulnerability of communities across the State to damage from wildfire, identify at risk wildland-urban interface areas, reduce excessive wildland fuel accumulations in and around areas of human development, increase community awareness of wildfire issues in New Jersey and promote opportunities to educate the public concerning the same, develop cohesive interagency wildfire risk reduction strategy, and develop partnerships to reduce the wildfire hazards.</i>				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Transportation Plan	Yes	Master Plan, December 1995; Re-examined July 2010, December 2011, July 2016, February 2022	Local	Land Use Department and Engineering Department
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>The Circulation Plan Element of the Master Plan presents an overview of the current circulation systems, including road jurisdiction, traffic volumes, functional road classification system, and planned road improvements for Vernon Township based on County and State Plans.</i></p>				
Agriculture Plan	Yes	Comprehensive Farmland Preservation Plan, March 2023	Local	Land Use Department and Engineering Department
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>Vernon Township's vision for farmland preservation is to:</i></p> <ul style="list-style-type: none"> • <i>Secure the agricultural land base through farmland preservation with a focus on retaining significant masses of agricultural land in agricultural production</i> • <i>Bolster the industry of agriculture including agritourism which will contribute to the economic viability of the agricultural industry</i> • <i>Proactively curtail conflicts with non-agricultural neighbors</i> • <i>Ensure adequate water for all land uses while protecting critical groundwater recharge areas</i> • <i>Prevent sprawl-type development in the Township through proactive planning</i> • <i>Provide consumers with access to locally grown sources of horticultural and fresh food products</i> • <i>Maintain the small-town, rural lifestyle that characterizes the farms in Vernon Township.</i> 				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
Tourism Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
Business/ Downtown Development Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
Other	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Vernon Township Emergency Operations Plan, 2023	Local	Emergency Management
<p>How has or will this be integrated with the HMP and how does this reduce risk? <i>The Emergency Operations Plan aims to assess the Township's ability to respond to emergency and identifies recommendations to improve its capacity to prepare and respond to future events. The plan address both short- and long-term recovery.</i></p>				
Continuity of Operations Plan	No	-	-	-
<p>How has or will this be integrated with the HMP and how does this reduce risk?</p>				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Substantial Damage Response Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Threat and Hazard Identification and Risk Assessment How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Post-Disaster Recovery Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Public Health Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Other How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-

24.3.2 Development and Permitting Capability

Table 24-3 summarizes the capabilities of Vernon to oversee and track development.

Table 24-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? <ul style="list-style-type: none"> If you issue development permits, what department is responsible? If you do not issue development permits, what is your process for tracking new development? 	Yes	Building Department and Planning/Zoning
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain Development
Do you have a buildable land inventory? <ul style="list-style-type: none"> If you have a buildable land inventory, please describe 	Yes	The buildable land inventory can be found within the Township's Master Plan.
Describe the level of buildout in your jurisdiction.	N/A	Vernon Township's designation as part of the Highlands Region limits the potential for development in the Preservation Area. Approximately 66 percent of the Township is located in the Highlands Preservation Area, where new development is limited to one acre per 88 acres of forested land or 25 acres of cleared land. Existing development remains permitted under existing zoning and can expand up to 125 percent of its existing footprint. The remaining approximately 34 percent of the municipality has less stringent restrictions on development.



24.3.3 Administrative and Technical Capability

Table 24-4 summarizes potential staff and personnel resources available to Vernon and their current responsibilities that contribute to hazard mitigation.

Table 24-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	<p>The Municipal Land Use Board has nine members and 4 alternate members. The Municipal Land Use Board follows the provisions Municipal Code Chapter 330 and the Municipal Land Use Law; the Board also has all powers formerly exercised by the Zoning Board of Adjustment.</p> <p>The Municipal Land Use Board may be authorized by the governing body from time to time to prepare a program of municipal capital improvement projects projected over a term of at least six years, and amendments thereto. Such program may encompass major projects being currently undertaken or future projects to be undertaken, with federal, state, county and other public funds or under federal, state or county supervision.</p>
Zoning Board of Adjustment	No	The Vernon Township Municipal Land Use Board acts as a Joint Board.
Planning Department	Yes	<p>The Vernon Township Division of Planning and Zoning is within the Vernon Township Department of Planning/Land Use and Zoning and is staffed by a zoning officer.</p> <p>This division's primary responsibility is to provide assistance and guidance in the development of lands in Vernon Township pursuant to the land use ordinance, the master plan and New Jersey's Municipal Land Use Law (MLUL). Its duties encompass everything from enforcing township codes and ordinances, including enforcement of the vacant/abandoned property registration requirement, to providing customer support to residents looking to make improvements to their properties.</p>
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	<p>The purpose of the Vernon Township Environmental Commission is to provide for the protection, development, or use of natural resources, including water resources, located within the township.</p> <p>The commission has the power to conduct research into the use and possible use of the open land areas of the township and may coordinate the activities of unofficial bodies organized for similar purposes. From time to time, the commission may recommend to the land use board plans and programs for inclusion in a township master plan and the development and use of the open areas of the township.</p>



Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
		<p>The commission consists of five members, all township residents, appointed by the mayor. One of the five members is a member of the township's land use board. Members serve three-year, staggered terms. A non-voting high school student member, whose term will last one school year, may also be appointed.</p>
Open Space Board/Committee	No	<p>There is no Open Space Committee. Instead, the Township Council performs the actions of an Open Space Committee.</p>
Economic Development Commission/Committee	Yes	<p>The purpose of the Vernon Township Economic Development Advisory Committee (amended via Resolution #21-186 to be a mayoral advisory committee) is to encourage, promote and assist business growth, increase employment opportunities, and improve the quality of life of Vernon Township residents while enhancing the area environment. The committee consists of up to eleven members, all of whom are appointed by the mayor and serve for a term of one year.</p>
Public Works/Highway Department	Yes	<p>The Vernon Township Department of Public Works provides many of the basic services we tend to take for granted. Its personnel are responsible for a vast range of duties in and around the township including the following: maintenance and repair of the township's approximately 106 miles of streets and rights-of-way; plowing, sanding, and salting of roads during the winter; operation of the township recycling center; maintenance, service and repair of all municipal vehicles and equipment including police, fire and rescue squad vehicles; maintenance of all township facilities, parks, playgrounds, and athletic fields; maintenance, repair, and replacement of all signs throughout the township; painting of crosswalks, railroad crossings and handicap spaces in public parking lots; and administration of the Clean Communities Program</p> <p>When police need to set up a detour or the building department must board up an abandoned dwelling, they call public works. When a car accident results in fluids on the roadway, public works is on the scene to sop up the mess. And during the winter months, manpower is on-call around the clock to respond to calls for winter maintenance of roads and vehicles.</p>
Construction/Building/Code Enforcement Department	Yes	<p>The Vernon Township Division of Building is within the Vernon Township Department of Planning and Development. Commonly referred to as the building department, it enforces and administers the regulations of the New Jersey Uniform Construction Code (UCC).</p> <p>The UCC is the state's approved building, plumbing, electrical, fire and mechanical subcodes.</p> <p>Supervised by a state-licensed construction official, this division reviews construction permit applications, issues construction permits, inspects construction projects, and coordinates the activities of the subcode officials</p>



Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
Emergency Management/Public Safety Department	Yes	Within the Vernon Township Department of Public Safety is the Office of Emergency Management. During times of emergency, its purpose is to preserve the resources and property of Vernon and its residents and to protect the health, welfare, and safety of the public. When disaster strikes, Vernon's emergency management coordinator interacts at the local level with police, fire, public works, public health, schools, etc. and at the county level with the Sussex County Division of Emergency Management .
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Neighboring communities, County
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	There are no job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk
Other: Recreation Department	Yes	<p>The Vernon Township Recreation Department, also known more formally as the Vernon Township Department of Recreation, Community Development and Senior Services, offers recreational opportunities and facilities for residents of all ages.</p> <p>Among its many duties, this department does the following: maintains all township parks, playgrounds, ball fields and other recreational facilities; creates and oversees recreational programming for children and adults; issues use permits for township fields, parks, and recreation facilities; administrates and supervises senior citizen programs; and assists the mayor with formulation and implementation of programs geared towards encouraging public interest in community development</p>
Other: Board of Recreation	Yes	<p>The Vernon Township Board of Recreation acts in an advisory capacity with respect to functions such as the establishment of rules for township parks and facilities, program development, capital acquisitions, facility improvements and maintenance, anticipated fees and program participation levels, etc.</p> <p>It makes recommendations, reviews recreation initiatives, engages volunteers and promotes the township's parks and recreation programs.</p> <p>The board consists of up to seven township residents and two alternates, all of whom are appointed by the mayor and serve a three-year term.</p>
Other: Beautification Committee	Yes	<p>The Vernon Township Beautification Committee was established in February of 2016 to address ways to improve the aesthetic value of Vernon.</p> <p>With Vernon's master plan identifying tourism as Vernon's main industry, the physical appearance of township</p>



Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
		corridors and entrances are critical to Vernon's economy as well as the region's economy and vitality. This citizens' advisory committee consists of seven to nine members appointed by the mayor, with each member serving a one-year term.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer/Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer
Planners or engineers with an understanding of natural hazards	Yes	Engineer
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	No	-
Staff that work with socially vulnerable populations or underserved communities	No	-
Environmental scientists familiar with natural hazards	No	-
Surveyors	No	-
Emergency manager	Yes	Emergency Management Coordinator
Grant writers	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

24.3.4 Fiscal Capability

Table 24-5 summarizes financial resources available to Vernon.

Table 24-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
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 – Sewer Only
Impact fees for homebuyers or developers of new development/homes	No



Financial Resources	Accessible or Eligible to Use? (Yes/No)
Stormwater utility fee	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

24.3.5 Education and Outreach Capability

Table 24-6 summarizes the education and outreach resources available to Vernon.

Table 24-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment
Public information officer or communications office	No	-
Personnel skilled or trained in website development	Yes	Individual Contractor
Hazard mitigation information available on your website	Yes	Information can be found on the Emergency Management webpage and Public Works webpage.
Social media for hazard mitigation education and outreach	Yes	Emergency Management Facebook page
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	No	Vernon Township does not have a warning system or service, but Sussex County utilizes Swift 911.
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	The Township utilizes social media, its website, and newsletter. Township offices and departments participate in outreach events and engage with constituents through service tables.

24.3.6 Community Classifications

Table 24-7 summarizes classifications for community programs available to Vernon.

Table 24-7. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Community Rating System (CRS)	No	-	-



Program	Participating? (Yes/No)	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	3y*	-
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Bronze	November 3, 2017
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable

— = Unavailable

* = At the time of this plan update, the date classified for the Public Protection (ISO Fire Protection Classes 1 to 10) was not able to be obtained.

24.3.7 Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. Table 24-8 summarizes the adaptive capacity for each identified hazard of concern and the Township’s capability to address related actions using the following classifications:

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

Table 24-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Flood	Moderate
Geological Hazards	Moderate
Hazardous Materials	Moderate
Hurricane	Moderate
Infestation	Moderate
Nor’easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate



24.4 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 24-1 is responsible for maintaining this information.

24.4.1 NFIP Statistics

Table 24-9 summarizes the NFIP policy and claim statistics for Vernon.

Table 24-9. Vernon NFIP Summary of Policy and Claim Statistics

# Policies	19
# Claims (Losses)	21
Total Loss Payments	\$121,236.16
# Repetitive Loss Properties (NFIP definition)	2
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties	0

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 Region II 2024

24.4.2 Flood Vulnerability Summary

Table 24-10 provides a summary of the NFIP program in Vernon.

Table 24-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Vernon Crossing Road is a low-lying area in the Township prone to flooding.
Do you maintain a list of properties that have been damaged by flooding?	There have been no properties damaged enough in the Township to justify a list to be created. Structures have had minor flooded basements, but nothing with extreme damage has occurred to need a list created.
Do you maintain a list of property owners interested in flood mitigation?	No
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown



NFIP Topic	Comments
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Unknown
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Building Department
Are any certified floodplain managers on staff in your jurisdiction?	No
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes – federal, state, and regional online resources.
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Engineering and permit review
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	50%....
What are the barriers to running an effective NFIP program in the community, if any?	Staffing, financial capabilities, training
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	July 27, 1994
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 275: Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	September 12, 2011
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	The program meets minimum requirements set by FEMA and the State.
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 Municipal Land Use Board considers efforts to reduce flood risk when reviewing variances such as height restrictions. The Township has subdivision and site plan ordinances.



NFIP Topic	Comments
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

24.5 GROWTH/DEVELOPMENT TRENDS

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction’s overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 24-11 through Table 24-13.

Table 24-11. 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
2019				
Total Permits	3	0	0	3
Permits within SFHA	0	0	0	0
2020				
Total Permits	5	0	0	5
Permits within SFHA	0	0	0	0
2021				
Total Permits	13	0	0	13
Permits within SFHA	0	0	0	0
2022				
Total Permits	14	0	0	14
Permits within SFHA	0	0	0	0
2023				
Total Permits	6	0	0	6
Permits within SFHA	0	0	0	0

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

Table 24-12. Recent Major Development and Infrastructure from 2019 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
There has been no new major development or infrastructure constructed between 2019 to present.					

* Only location-specific hazard zones or vulnerabilities identified.



Table 24-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
55-unit apartment building	Residential	55	7 Theta Drive, Vernon Township, NJ	None	Permit issued; Construction has begun

24.6 JURISDICTIONAL RISK ASSESSMENT

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

24.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Township are shown in Figure 24-1 through Figure 24-3. 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 Vernon has significant exposure. The maps show the location of potential new development, where available.

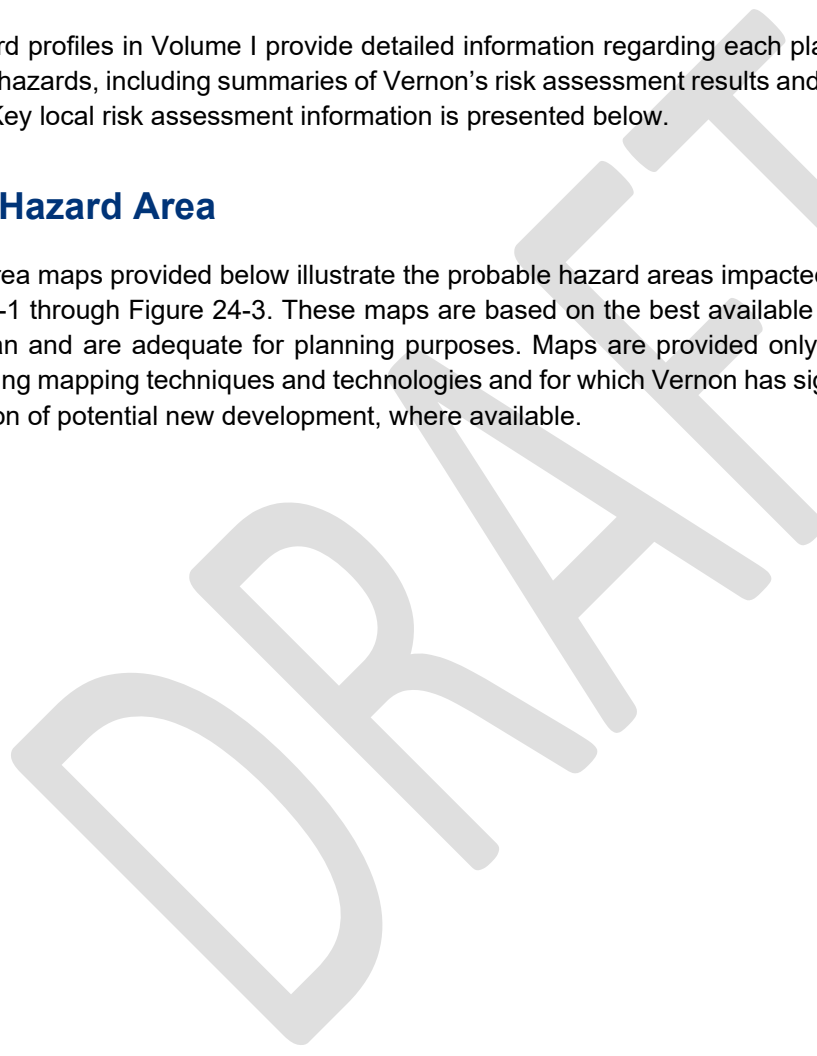


Figure 24-1. Vernon Flood and Sinkhole Hazard Area Extent and Location Map

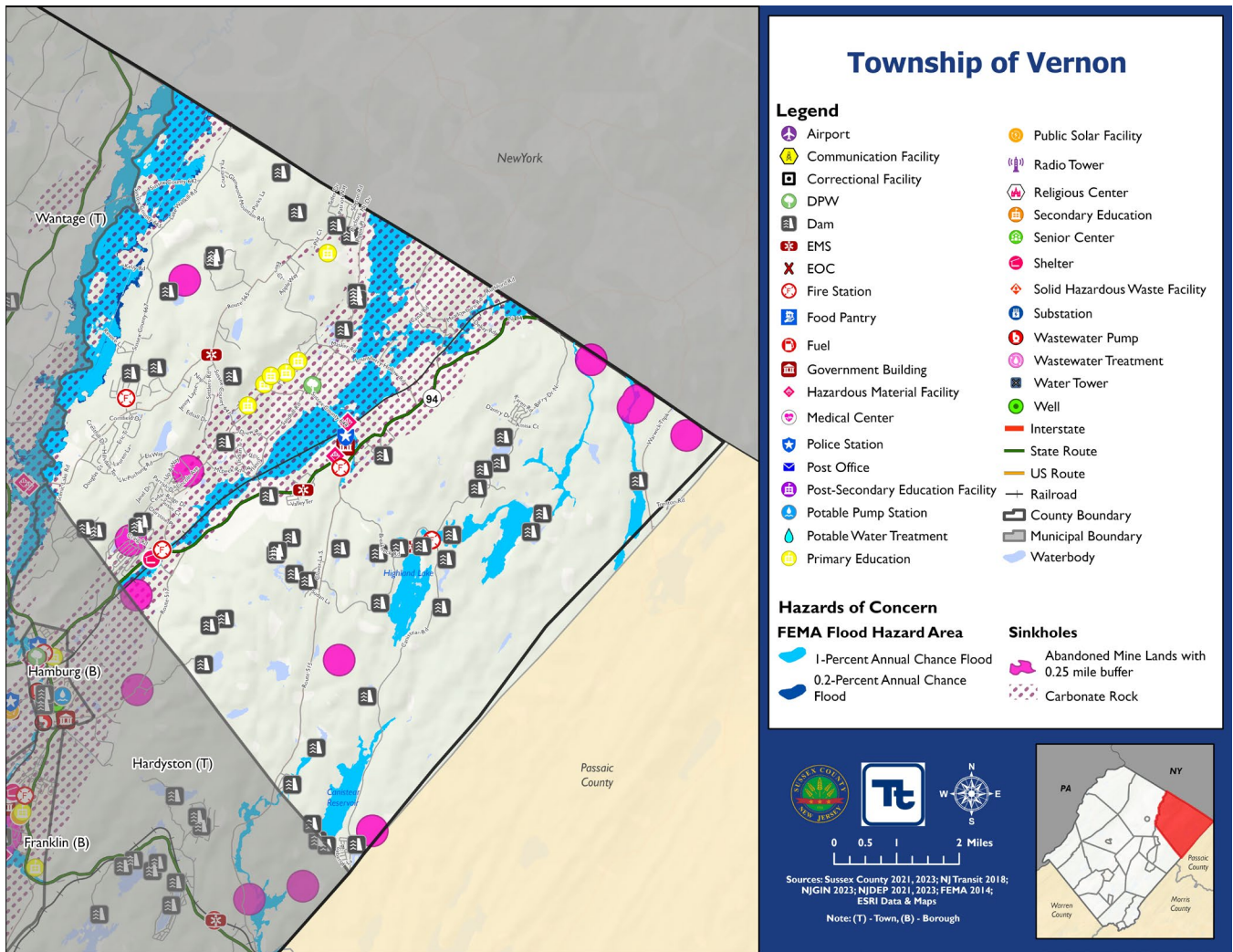


Figure 24-2. Vernon Hazardous Materials and Wildfire Hazard Area Extent and Location Map

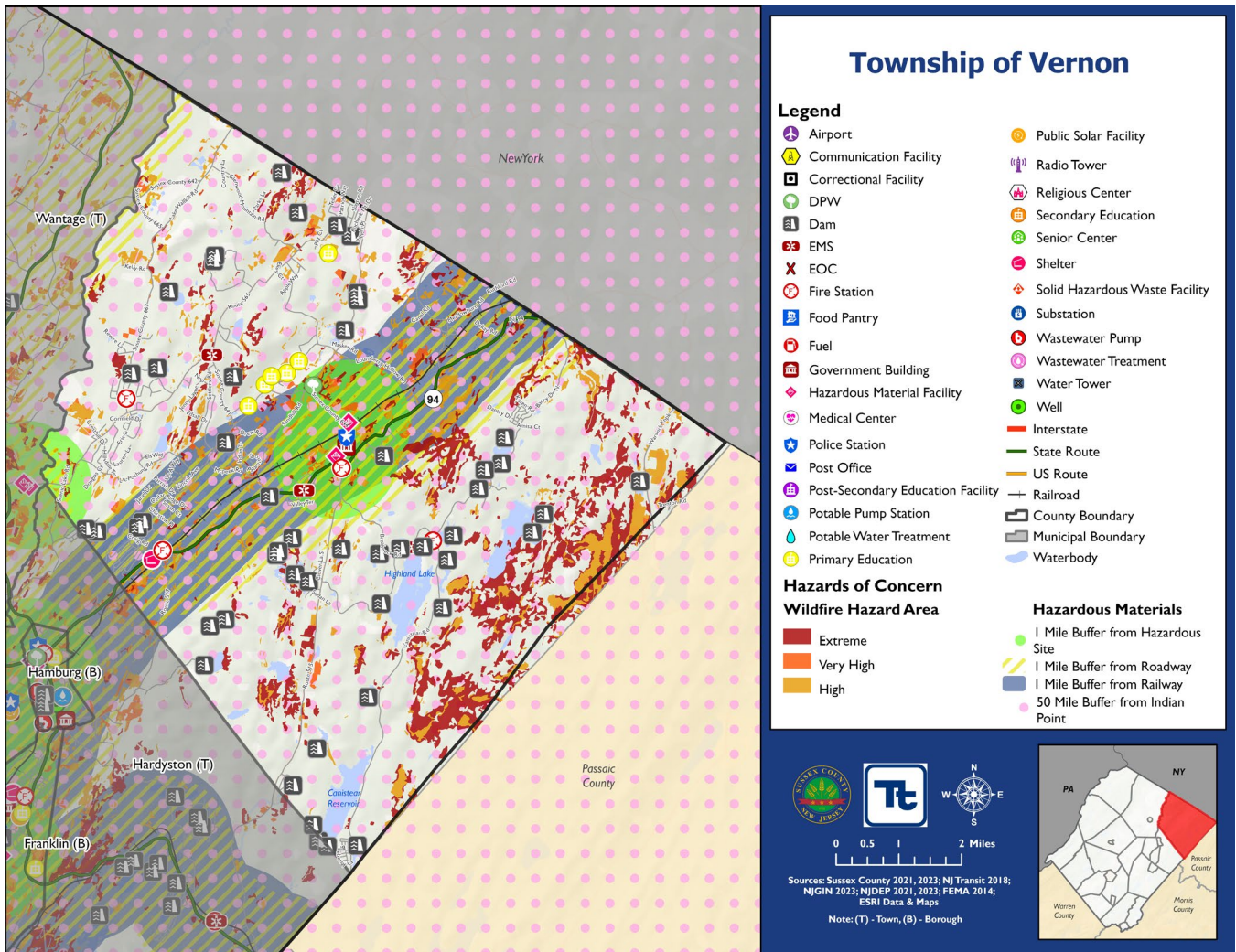
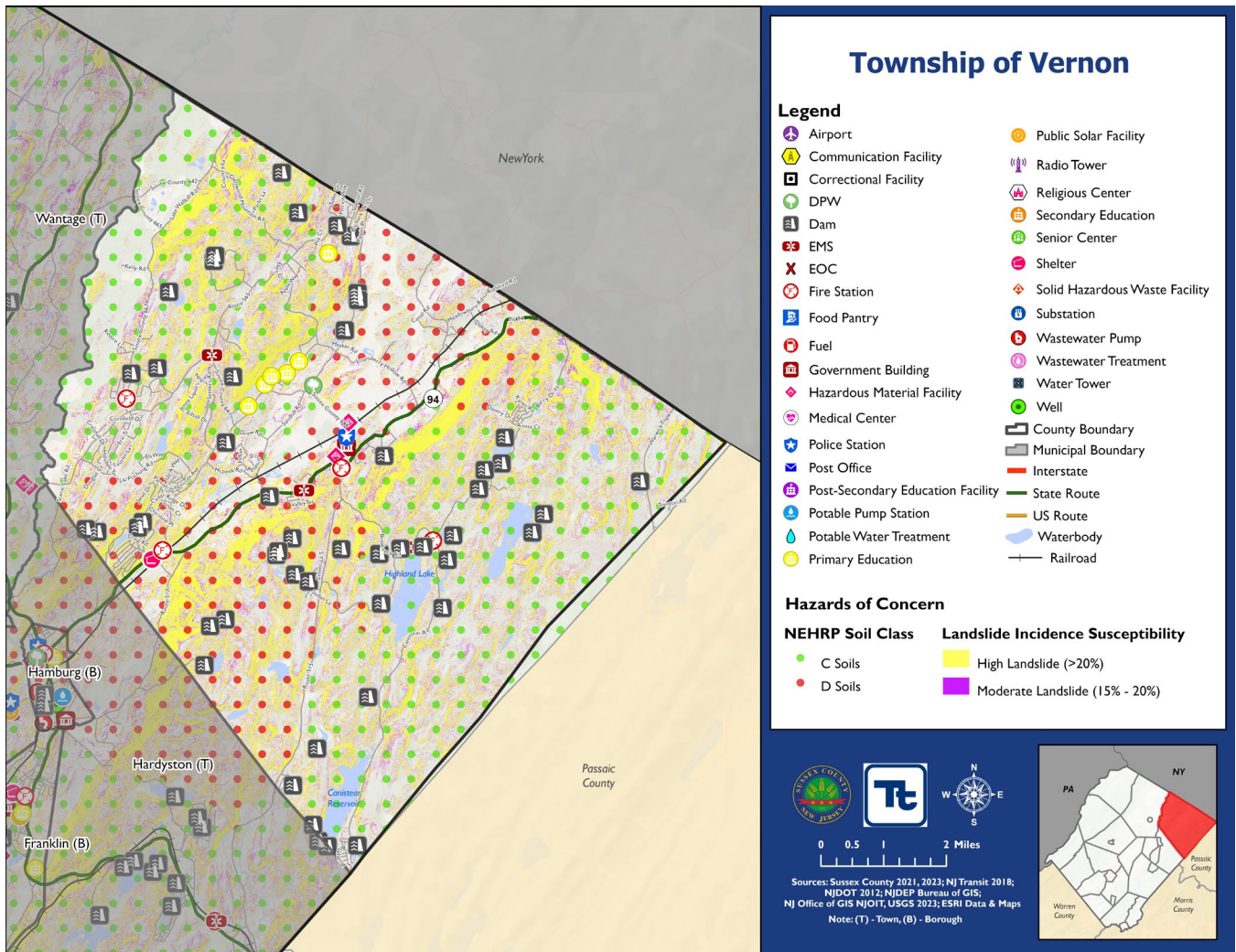


Figure 24-3. Vernon Landslide and NEHRP Soils Hazard Area Extent and Location Map





24.6.2 Hazard Event History

The history of natural and non-natural hazard events in Vernon is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 24-14 provides details on loss and damage in Vernon during hazard events since the last hazard mitigation plan update.

Table 24-14. Hazard Event History in Vernon

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Vernon
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	Sussex County accounted for 37,642 positive cases of COVID-19 in the State of New Jersey, and 425 of the reported deaths. A total of 277,542 vaccinations were delivered in the County to both residents and non-residents.	Loss of manpower during COVID-19 to assist with preventative measures.
August 4, 2020	Tropical Storm Isaias (DR-4574-NJ)	Yes	Tropical Storm Isaias brought high winds and heavy rain to Sussex County; there were numerous reports of downed trees and power lines. Observations from surrounding areas suggest sustained tropical storm force winds likely occurred.	Total clean-up costs, including trees downed, was \$26,016.81.
January 31 – February 2, 2021	Severe Winter Storm (DR-4597-NJ)	Yes	Heavy precipitation developed producing areas of extreme snowfall rates of 2 to 4 inches per hour in northern New Jersey. Numerous reports of 24 to 32 inches were received from across the County.	Storm clean-up took from January 31 – February 5, 2021 with a total cost of \$178,479.76.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and flash floods. Widespread flash flooding occurred in Sussex County with numerous road closures.	Downed trees along the Lake Wanda dam beach. Total clean-up and repair costs were \$12,906.06.

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

24.6.3 Hazard Ranking and Vulnerabilities

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

Hazard Ranking

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of



the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Vernon reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township indicated the hazard rankings were accurate.

Table 24-15 shows Vernon’s final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 24-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Disease Outbreak	Low
Drought	Low
Earthquake	Low
Flood	Medium
Geological Hazards	Medium
Hazardous Materials	Medium
Hurricane	Medium
Infestation	Low
Nor'easter	High
Severe Weather	High
Severe Winter Weather	High
Wildfire	Medium

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

Critical Facilities

Table 24-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 24-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Annual Chance Event	0.2% Annual Chance Event		
Canistear Reservoir #2 Dam	Dam	Yes	Yes	2025-VernonTwp-09, 2025-VernonTwp-10	-
Dorothy Henry Library Branch	Shelter	Yes	Yes	2025-VernonTwp-09	-
East Cove Dam	Dam	Yes	Yes	2025-VernonTwp-09, 2025-VernonTwp-10	-
Hickory Park Dam	Dam	Yes	Yes	2025-VernonTwp-09, 2025-VernonTwp-10	-



Name	Type	Vulnerability		Addressed by Proposed Action	Already Protected to 0.2% Flood Level (describe protections)
		1% Annual Chance Event	0.2% Annual Chance Event		
Highland Lakes Dam	Dam	Yes	Yes	2025-VernonTwp-09, 2025-VernonTwp-10	-
Kohout Lake Dam	Dam	Yes	Yes	2025-VernonTwp-09, 2025-VernonTwp-10	-
Lake Wanda Dam	Dam	Yes	Yes	2025-VernonTwp-09, 2025-VernonTwp-10	-

Source: NJGIN 2023; Sussex County 2021, 2023

In addition to critical facilities that are exposed to flooding, the following high hazard dams are located in Vernon:

- Lake Panorama Dike
- Great Gorge Dam
- East Cove Dam
- Wawayanda Lake Dam
- Mountain Creek Lake Dam
- Upper West Highland Lake Dam
- Highland Lakes Dam
- Upper Highland Lake Dam
- Hidden Valley Lake Dam
- Canistear Reservoir #2 Dam
- Stump Pond Dam
- Pleasant Valley Lake Dam

24.6.4 Identified Issues

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

- Dams in the municipality and have been found to have either a poor or unsatisfactory safety rating based on their most recent inspections. Dams with poor or unsatisfactory safety ratings have deficiencies that could potentially make dam failure more likely to occur or the consequences of dam failure more significant.
- The Township lacks a Disaster Debris Management Plan to address post disaster cleanup. Without a plan in place, there are no identified resources in place to properly address debris and do not have identified locations for debris storage.
- Vernon experiences frequent storm damage from downed trees. The Township’s roads are surrounded by vegetation over-growth throughout the Township’s 68 square miles. There are four roads in particular (CR-515, CR-565, SR-94, and Canistear Road) which are particularly impacted by downed trees. The Township



has identified that 14 miles of vegetation management is needed to reduce impacts from trees to utility and vehicle rights-of-way. During storm events, delays of up to six hours are reported due to trees in the road.

- The Township does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. The Township has struggled with identifying where socially vulnerable populations are located at within the jurisdiction. Identifying and educating these populations can increase resiliency in the Township and potentially reduce the number of emergency calls during hazardous events.
- The Township currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods.
- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Township has one repetitive loss property, but other properties may be impacted by flooding as well.
- The Township does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. Maintaining these lists can assist the Township in identifying and prioritizing properties to mitigate.
- The Township does not have any certified floodplain managers (CFM) on staff. Becoming a CFM increases the depth of understanding when dealing with FEMA floodplains. The certifications ensures those that bare it understand the regulatory requirements and procedures needed to make floodplain management work effectively and efficiently at the community level.
- Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. The Township has several critical facilities in the floodplain including Canistear Reservoir #2 Dam, Dorothy Henry Library Branch, East Cove Dam, Hickory Park Dam, Highland Lakes Dam, Kohout Lake Dam, and Lake Wanda Dam.
- The Canistear Reservoir #2 Dam, East Cove Dam, Hickory Park Dam, Highland Lakes Dam, Kohout Lake Dam, and Lake Wanda Dam, all critical infrastructures, are located in the 1- and 0.2-percent flood hazard areas. The Township also has several high-hazard potential dams, including the Lake Panorama Dike, Great Gorge Dam, East Cove Dam, Wawayanda Lake Dam, Mountain Creek Lake Dam, Upper West Highland Lake Dam, Highland Lakes Dam, Upper Highland Lake Dam, Hidden Valley Lake Dam, Canistear Reservoir #2 Dam, Stump Pond Dam, and Pleasant Valley Lake Dam, within its jurisdiction. These structures have the potential to impact those living nearby.
- The national Firewise USA® recognition program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. The Township is currently not part of the Firewise program.
- The Township's current flood damage prevention ordinance was last adopted in 2011. It currently does not have a freeboard requirement and does not meet New Jersey's minimum requirement. The Township is currently working to update the Flood Damage Prevention Ordinance to be in-line with both State and Federal requirements, including New Jersey Department of Environmental Protection's Code Coordinated Ordinance. The ordinance will be sent for review by July 25, 2024.
- Heavy rains flood Wawayanda Road and Warwick Turnpike. A small stream connecting Kohout Lake and Parker Lake flows under Wawayanda Road; it is unknown if the Kohout Lake Dam, which is located along the Warwick Turnpike at Kohout Lake, contributes to the roadways flooding. Flooded roadways can impact evacuation routes, prevent emergency responders from reaching a location, and impede on necessary medical appointments or needs for vulnerable populations.



- The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality is in need of a formal process and plan to provide a framework for conducting such inspections and determinations.
- Fire Stations in the Township are in need of emergency back-up generators; the stations are not only a critical facility and community lifeline themselves but are also used as warming and cooling centers. The MacAfee Station (88 State RT 94, McAfee, NJ 07428) does not have an emergency back-up generator; the Highland Lakes Station's (813 Canistear Road, Highland Lakes, NJ 07422) current generator is undersized and does not have the capacity to power the building should an emergency occur and impact power usage. High winds associated with hurricanes, nor'easters, severe weather, and severe winter weather are known to cause power outages, which would impact the continuity of operations at both critical facilities.
- Vernon Crossing Road is a low-lying area in the Township prone to flooding. The Black Creek, a tributary of Vernon Valley Lake, flows alongside and underneath the roadway. Flooded roadways can impact evacuation routes, prevent emergency responders from reaching a location, and impede on necessary medical appointments or needs for vulnerable populations.
- Lake Panorama Dike is a Class I High Hazard Dam that is located on Panorama Lake. The dam is owned by the Lake Panorama Community Association. Failure of the dam could result in inundation of populated areas, forested areas, recreation areas, and local roadways including Panorama Drive, Upper Notch Road, and Lakeview Drive Northwest. The dam was last inspected in 2023 and found to be in poor condition, meaning the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Great Gorge Dam is a Class I High Hazard Dam that is located on a tributary of the Black River. The dam is owned by the Mountain Creek Resort. Failure of the dam could result in inundation of forested and recreational areas. Although the dam was last inspected in 2022 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- East Cove Dam is a Class I High Hazard Dam that is located on Wawayanda Lake. The dam is owned by the New Jersey Division of Parks and Forestry. Failure of the dam could result in inundation of forested areas, recreational areas, and local roadways including Campsite Road. East Cove Dam is located upstream from the Double Kill Stream, which feeds into Laurel Pond. Laurel Pond is closely located to the Wawayanda Lake Dam, therefore should a failure occur at the East Cove Dam, it is possible the Wawayanda Lake Dam may be impacted by the influx of flood waters, and which could lead to a secondary dam failure. Although the East Cove Dam was last inspected in 2022 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Wawayanda Lake Dam is a Class I High Hazard Dam that is located on Wawayanda Lake. The dam is owned by the New Jersey Division of Parks and Forestry. Failure of the dam could result in inundation of forested and recreational areas. The Wawayanda Dam is located closely to Laurel Pond, which receives waters from the Double Kill Stream. This stream is closely located near the East Cove Dam. Should a dam failure occur at the East Cove Dam, it is possible the Wawayanda Lake Dam may be impacted by the influx of flood waters, from these waterways, which could lead to a secondary dam failure. Although the Wawayanda Lake Dam was last inspected in 2022 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Mountain Creek Lake Dam is a Class I High Hazard Dam that is located on a tributary of the Black River. The dam is owned by the Mountain Creek Resort. Failure of the dam could result in inundation of forested and recreational areas. The dam was last inspected in 2022 and found to be in poor condition, meaning the



risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.

- Upper West Highland Lake Dam is a Class I High Hazard Dam that is located on Upper West Highland Lake. The dam is owned by the Highland Lakes Country Club and Community Association. Failure of the dam could result in inundation of densely populated areas, recreational areas, critical facilities and community lifelines, and local roadways including Upper Highlands Lake Drive, Waconia Road, Pocasset Road, and Breakneck Road. The Upper West Highland Lake Dam is closely located to the Upper Highland Lake Dam and Highland Lake Dam. Should a failure occur at any of these dams, cascading impacts from the flood waters may result in subsequent dam failures. Although the Upper West Highland Lake Dam was last inspected in 2023 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Highland Lakes Dam is a Class I High Hazard Dam that is located on Highland Lake. The dam is owned by the Highland Lakes Country Club and Community Association. Failure of the dam could result in inundation of densely populated areas, recreational areas, critical facilities and community lifelines, and local roadways including Lakeside Drive East, Lakeside Drive, and Birch Road. The Highland Lakes Dam is closely located to the Upper West Highland Lake Dam and Upper Highland Lake Dam. Should a failure occur at any of these dams, cascading impacts from the flood waters may result in subsequent dam failures. Although the dam was last inspected in 2023 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Upper Highland Lake Dam is a Class I High Hazard Dam that is located on Upper Highland Lake. The dam is owned by the Highland Lakes Country Club and Community Association. Failure of the dam could result in inundation of recreational areas, critical facilities and community lifelines, and local roadways including Lakeside Drive, Casco Road, and Breakneck Road. The Upper Highland Lake Dam is closely located to the Upper West Highland Lake Dam and Highland Lake Dam. Should a failure occur at any of these dams, cascading impacts from the flood waters may result in subsequent dam failures. Although the dam was last inspected in 2022 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Hidden Valley Lake Dam is a Class I High Hazard Dam that is located on a tributary of the Pachuck Creek. The dam is owned by the National Winter Activity Center. Failure of the dam could result in inundation of populated areas, woodland areas, recreational areas, and local roadways including Curtis Drive, Meadow Lane, and Village Way. Although the dam was last inspected in 2024 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Canistear Reservoir #2 Dam is a Class I High Hazard Dam that is located on the Canistear Reservoir, leading into the Paddock Brook. The dam is owned by the City of Newark Department of Water and Sewer Utilities. Failure of the dam could result in inundation of forested and woodland areas, and potentially local roadways including Upper Dam Road and Lower Dam Road. Although the dam was last inspected in 2023 and found to be in fair condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.
- Stump Pond Dam is a Class I High Hazard Dam that is located on Pleasant Valley Lake. The dam is owned by the Pleasant Valley Country Club. Failure of the dam could result in inundation of densely populated areas, woodland areas, recreational areas, and local roadways including Woodland Drive, West Shore Drive, and North Shore Drive. The dam was last inspected in 2023 and found to be in poor condition, meaning the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.



- Pleasant Valley Lake Dam is a Class I High Hazard Dam that is located on Pleasant Valley Lake. The dam is owned by the Pleasant Valley Country Club. Failure of the dam could result in inundation of densely populated areas, woodland areas, recreational areas, and local roadways including Woodland Drive, West Shore Drive, and North Shore Drive. The dam was last inspected in 2023 and found to be in poor condition, meaning the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.

24.7 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.

24.7.1 Past Mitigation Action Status

Table 24-17 indicates progress on the Township’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.

24.7.2 Additional Mitigation Efforts

Vernon did not identify any additional mitigation efforts completed since the last HMP.

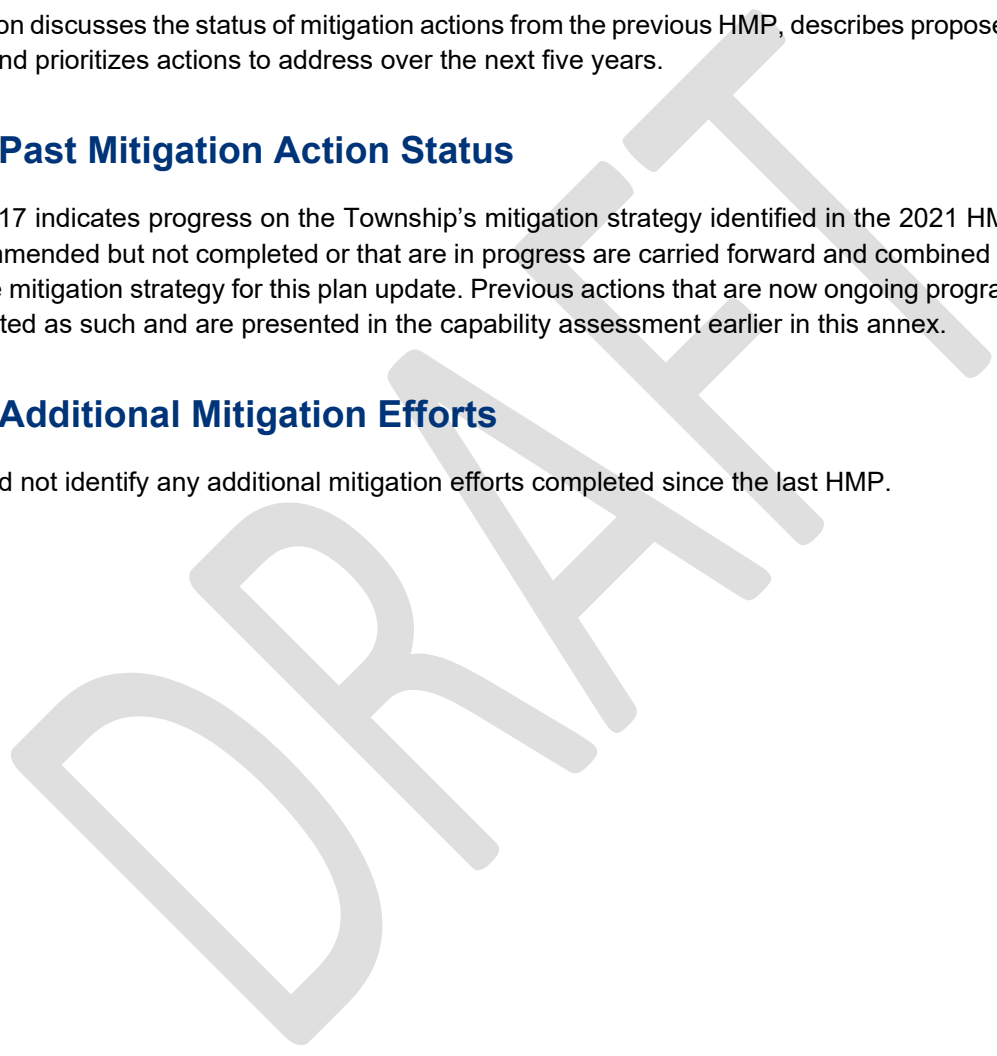




Table 24-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2021-Vernon-001	PPE Acquisition/Pandemic Response	Disease Outbreak	Township OEM	<p>Problem: During the current COVID-19 pandemic, the Township did not have an adequate supply of personal protective equipment (PPE) for municipal staff. Without proper PPE, it puts municipal staff and residents at risk to the spread of infectious diseases.</p> <p>Solution: The Township will purchase PPE to create a stockpile for municipal staff. This will include gloves, masks, gowns, antibacterial handwash, antiviral cleaning solutions, sanitizers, and misters. This equipment can be used for the COVID-19 pandemic response as well as future infectious disease outbreaks, such as pandemic influenza.</p>	<ol style="list-style-type: none"> 1. Completed 2. Stockpile has been completed, located in the Police pole barn. Township performs assessments to the PPE to identify expiration dates and replace PPE as necessary. Funds were used from FEMA PA and the Township budget. 	<ol style="list-style-type: none"> 1. Discontinue 2. Not applicable 3. Stockpile has been completed, located in the Police pole barn. Township performs assessments to the PPE to identify expiration dates and replace PPE as necessary. Funds were used from FEMA PA and the Township budget.
2021-Vernon 002	Vegetation Management Planning and Implementation	Hurricane and Tropical Storm, Nor'easter, Severe Storm, Severe Winter Storm, Wildfire	Sussex County; Vernon Township DPW	<p>Problem: Vernon experiences frequent storm damage from downed trees. The Township's roads are surrounded by vegetation over-growth throughout the Township's 68 square miles. County Route 515, one of the Township's busiest roads, is particularly impacted by downed trees. The Township has identified that 14 miles of vegetation</p>	<ol style="list-style-type: none"> 1. No Progress 2. Due to financial constraints, no progress has been made on this action. 	<ol style="list-style-type: none"> 1. Include 2. Update to include the following: 4 Access Roads (CR 515, Canistear Rd, CR 565, SR 94) are heavily timber lined. Severe weather causes fallen trees across the roadways, interrupting the heavily trafficked roads. Have solution include NJDOT and utility companies as supporting agencies and funding streams.



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
				<p>management is needed to reduce impacts from trees to utility and vehicle rights-of-way. During storm events, delays of up to six hours are reported due to trees in the road.</p> <p>Solution: The Township proposes to develop a proactive vegetation management plan and contract with a vegetation management company to prioritize vegetation removal, implement best practices, and cutback overgrown and dead vegetation to reduce impacts of downed trees. Funding will be sought to hire a contractor to remove high hazard trees that are beyond the Township's capabilities.</p>		<p>3. Not applicable</p>
2021-Vernon-003	Firewise Program Participation	Wildfire	Township OEM and Fire Department	<p>Problem: The national Firewise USA® recognition program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. The Township is currently not part of the Firewise program.</p> <p>Solution: The Township will follow the proper steps in applying</p>	<p>1. No Progress 2. The Township prioritized other projects due to funding and staffing constraints.</p>	<p>1. Include 2. Keep as is 3. Not applicable</p>



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
				for and becoming a Firewise community. This includes forming a board/committee, obtaining a wildfire risk assessment, developing an action plan, and hosting outreach events and programs. The application will be completed online.		
2021-Vernon-004	Update Flood Damage Prevention Ordinance	Flood	Township Administration, Construction Official	Problem: The Township's current flood damage prevention ordinance was last adopted in 2011. It currently does not have a freeboard requirement and does not meet New Jersey's minimum requirement. Solution: The Township will update its flood damage prevention ordinance to meet the New Jersey requirement of one foot of freeboard.	1. In Progress 2. The Township is currently working to update the Flood Damage Prevention Ordinance to be in-line with both State and Federal requirements, including New Jersey Department of Environmental Protection's Code Coordinated Ordinance. The ordinance will be sent for review by July 25, 2024.	1. Include 2. The Township is currently working to update the Flood Damage Prevention Ordinance to be in-line with both State and Federal requirements, including New Jersey Department of Environmental Protection's Code Coordinated Ordinance. The ordinance will be sent for review by July 25, 2024. 3. Not applicable
2021-Vernon-005	National Winter Activity Center Dam Replacement	Dam Failure, Geologic	National Winter Activity Center	Problem: A relatively small sinkhole formed as a result of heavy rain, snow melt, and lake run off at National Winter Activity Center. It was approximately 30" x 24" a 6' deep that connected to a dam spill way basin that ties into a stream. The dam requires replacement.	1. Completed 2. This sinkhole formed just days before the dam was scheduled to be fully replaced. The National Winter Activity Center funded the replacement of the dam.	1. Discontinue 2. Not applicable 3. This sinkhole formed just days before the dam was scheduled to be fully replaced. The National Winter Activity Center funded the replacement of the dam.



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2025 HMP or Discontinue 2. If including action in the 2025 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
				Solution: The National Winter Activity Center will carry out replacement of the dam.		

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24.7.3 Proposed Hazard Mitigation Actions for the HMP Update

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

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

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

Table 24-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 24-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

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Table 24-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	X	X		X	X		X		X	X
Disease Outbreak	X			X			X			X
Drought				X			X			
Earthquake	X			X	X		X			X
Flood	X	X		X	X	X	X		X	X
Geological Hazards	X			X	X		X			X
Hazardous Materials	X			X	X		X			X
Hurricane	X		X	X	X		X	X		X
Infestation				X			X			
Nor'easter	X		X	X	X		X	X		X
Severe Weather	X		X	X	X		X	X		X
Severe Winter Weather	X		X	X	X		X	X		X
Wildfire	X			X	X		X			X

Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.

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

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

Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.

Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Natural Resource Protection (NR)—Actions that minimize hazard loss and preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 24-19. 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
2025-VernonTwp-01	Dam Repair	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
2025-VernonTwp-02	Disaster Debris Management Plan	0	1	1	1	1	1	1	0	1	1	1	1	0	1	11	High
2025-VernonTwp-03	Tree Maintenance	0	1	1	1	1	1	1	1	1	1	0	1	0	0	10	Medium
2025-VernonTwp-04	Socially Vulnerable Populations Outreach	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2025-VernonTwp-05	Public Education and Outreach	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2025-VernonTwp-06	Repetitive Loss Properties	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
2025-VernonTwp-07	Flood Mitigation Interest	1	1	1	1	1	1	1	1	1	0	1	1	1	1	13	High
2025-VernonTwp-08	NFIP Training	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
2025-VernonTwp-09	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	0	1	1	1	0	11	High
2025-VernonTwp-10	Dam Owner Partnership	1	1	1	1	1	1	0	1	1	0	1	1	1	0	11	High
2025-VernonTwp-11	Firewise Program Participation	1	1	1	1	1	1	1	1	1	0	1	1	0	0	11	High
2025-VernonTwp-12	Code Coordinated Ordinance	1	1	1	1	1	1	1	1	1	0	1	1	0	0	11	High
2025-VernonTwp-13	Flooded Roadways Study	1	1	1	1	1	0	1	1	1	0	1	1	0	0	10	Medium
2025-VernonTwp-14	Substantial Damage Management Plan	0	1	1	1	1	1	0	1	1	1	1	1	1	0	11	High
2025-VernonTwp-15	Emergency Generators at Critical Facilities	1	1	1	1	1	0	0	1	1	1	0	1	1	0	10	Medium
2025-VernonTwp-16	Vernon Crossing Road Flood Mitigation	1	1	1	1	1	0	1	1	1	0	1	1	0	0	10	Medium
2025-VernonTwp-17	Lake Panorama Dike 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	
2025-VernonTwp-18	Great Gorge Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-19	East Cove Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-20	Wawayanda Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-21	Mountain Creek Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-22	Upper West Highland Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-23	Highland Lakes Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-24	Upper Highland Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-25	Hidden Valley Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-26	Canistear Reservoir #2 Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-27	Stump Pond Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High
2025-VernonTwp-28	Pleasant Valley Lake Dam Rehab	1	1	1	1	0	0	1	1	1	0	1	1	1	1	11	High

Note: Volume I, Section 21 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).



Action 2025-VernonTwp-01. Dam Repair

Lead Agency:	Engineer
Supporting Agencies:	Dam Manager, NJDEP Bureau of Dam Safety, County Engineer
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials <input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	<p>The following dams are located in the municipality and have been found to have either a poor or unsatisfactory safety rating based on their most recent inspections:</p> <ul style="list-style-type: none"> • Mountain Creek Lake Dam (poor) • Stump Pond Dam (poor) • Laurel Lake Dam (poor) • Lake Conway Dam (poor) • West Highland Lakes Dam (poor) • Upper Scenic Lake Dam (poor) • Lake Panorama Dike (poor) • Diversion Dam (poor) • Billhill Dam (poor) • Lake Wanda Dam (poor) • Pleasant Valley Lake Dam (poor) • Lake Panorama Dam (poor) • Scenic Lake Dam (poor) <p>Dams with poor or unsatisfactory safety ratings have deficiencies that could potentially make dam failure more likely to occur or the consequences of dam failure more significant.</p>
Description of the Solution:	The municipal engineer will work with dam managers, the NJDEP Bureau of Dam Safety, and the County Engineer to review the most recent inspections of dams in the municipality that have resulted in a poor or unsatisfactory safety rating, identify the deficiencies, determine the necessary repairs and improvements necessary to address the deficiencies, identify available funding sources for the identified repairs/improvements, and implement the cost-effective repairs/improvements.
Estimated Cost:	Low for initial assessment of options, TBD for total cost based on mitigation actions selected
Potential Funding Sources:	HMGP, BRIC, FMA, NJDEP, Annual Budget
Implementation Timeline:	Within 5 years
Goals Met:	1, 2, 3
Benefits:	Dam failure will be avoided, which will reduce the risk of harm to people and property downstream. Certain safety requirements will be met that can allow for funding to be received for further mitigation projects.
Impact on Socially Vulnerable Populations:	The most vulnerable populations may live directly downstream of the dam and lack the ability to receive notifications of dam failure or evacuate when notified. Preventing dam failure allows those communities to remain intact and reduces the risk of loss of life and property in those areas.
Impact on Future Development:	Future development downstream of dams will also be protected from dam failure.
Impact on Critical Facilities/Lifelines:	Critical roads and utilities will be protected from potential damage or loss from unintended dam releases.
Impact on Capabilities:	Not applicable
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	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No Action	Risk of dam failure remains or increases over time	
	Work without County Engineer involvement	Improvements made but may lack appropriate support from County, including data and potential funding access	
	Remove all dams	Without proper analysis, dam removal may increase flooding risk	

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Action 2025-VernonTwp-02. Disaster Debris Management Plan

Lead Agency:	Emergency Management		
Supporting Agencies:	Public Works, Township Administration		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Geological Hazards <input checked="" type="checkbox"/> Hazardous Materials	<input checked="" type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input checked="" type="checkbox"/> Nor'easter <input checked="" type="checkbox"/> Severe Weather <input checked="" type="checkbox"/> Severe Winter Weather <input checked="" type="checkbox"/> Wildfire	
Description of the Problem:	The Township currently does not have an adopted debris management plan. Without a plan in place, there are no identified resources in place to properly address debris and do not have identified locations for debris storage.		
Description of the Solution:	The municipality will develop a disaster debris management plan. This plan will establish procedures and guidelines for managing disaster debris in a coordinated, environmentally responsible, and cost-effective manner. The plan will identify responsibilities for execution of the plan. The plan will align with permitted temporary collection areas.		
Estimated Cost:	Staff time		
Potential Funding Sources:	Municipal budget		
Implementation Timeline:	Within 5 years		
Goals Met:	5		
Benefits:	The action will result in increased quicker and more efficient cleanup after disaster events.		
Impact on Socially Vulnerable Populations:	Not Applicable		
Impact on Future Development:	Not Applicable		
Impact on Critical Facilities/Lifelines:	Not Applicable		
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	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No Action	Current problem remains	
	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 2025-VernonTwp-03. Tree Maintenance

Lead Agency:	Public Works	
Supporting Agencies:	Parks and Recreation, Utility Companies, Property Owners, NJDOT	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input checked="" type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input checked="" type="checkbox"/> Nor'easter <input checked="" type="checkbox"/> Severe Weather <input checked="" type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Vernon experiences frequent storm damage from downed trees. The Township's roads are surrounded by vegetation over-growth throughout the Township's 68 square miles. There are four roads in particular (CR-515, CR-565, SR-94, and Canistear Road) which are particularly impacted by downed trees. The Township has identified that 14 miles of vegetation management is needed to reduce impacts from trees to utility and vehicle rights-of-way. During storm events, delays of up to six hours are reported due to trees in the road.	
Description of the Solution:	Implement, review, and enforce municipal policies and programs to prevent trees from threatening lives and impacting power availability/interruption in conjunction with property owners, utility companies, and NJDOT.	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal Budget, NJDOT, Property Owners, Utility Companies	
Implementation Timeline:	4 years	
Goals Met:	1, 2, 5, 7	
Benefits:	This action will result in the reduction of risk surrounding power outages by minimizing potential impacts from trees on utility lines.	
Impact on Socially Vulnerable Populations:	Some socially vulnerable population rely on power utilities for everyday care. If power outages are caused by a lack of tree maintenance, lives could potentially be at risk.	
Impact on Future Development:	This action assists in the protection of future development from impacts caused by tree collapses or branch falls as a result of severe weather, severe winter weather, hurricanes, and nor'easters.	
Impact on Critical Facilities/Lifelines:	Utility lines provide power to residencies, private businesses, government entities, and various providers. Not maintaining trees, tree limbs, or tree branches may impact the availability of power during severe weather and severe winter weather events.	
Impact on Capabilities:	The creation of a tree maintenance program would be a new capability for the Township.	
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to trees or tree limbs/branches falling or impacting utility lines and property.	
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input checked="" type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input checked="" type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Municipal-owned trees will be maintained
	Do not contact utility companies	Trees along utility lines may impact power during severe weather and severe winter weather events
	Do not contact property owners	Trees on private residencies may impact power during severe weather and severe winter weather events



Action 2025-VernonTwp-04. Socially Vulnerable Populations Outreach

Lead Agency:	Emergency Management	
Supporting Agencies:	Township Administration, Sussex County	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Geological Hazards <input checked="" type="checkbox"/> Hazardous Materials	<input checked="" type="checkbox"/> Hurricane <input checked="" type="checkbox"/> Infestation <input checked="" type="checkbox"/> Nor'easter <input checked="" type="checkbox"/> Severe Weather <input checked="" type="checkbox"/> Severe Winter Weather <input checked="" type="checkbox"/> Wildfire
Description of the Problem:	The Township does not have any organizations that conduct outreach to socially vulnerable populations and underserved populations. The Township has struggled with identifying where socially vulnerable populations are located at within the jurisdiction. Identifying and educating these populations can increase resiliency in the Township and potentially reduce the number of emergency calls during hazardous events.	
Description of the Solution:	Create outreach materials, or utilize those from Sussex County, on hazard risks for socially vulnerable populations. Methods of distribution may include Township events, the Township newsletters, social media, the Township website, and having the materials on display for the public at Township libraries and offices. Consider hiring staff to work directly with socially vulnerable populations. Work with Sussex County to identify and create a list of socially vulnerable populations utilizing Register Ready.	
Estimated Cost:	Low	
Potential Funding Sources:	Township Budget, HMGP	
Implementation Timeline:	Within 3 years	
Goals Met:	1, 2, 3, 7	
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations in the Township. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Township will become educated on hazards risks. The Township will identify an individual to identify and work with these populations to ensure the most up to date information is being shared.	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities:	This action would build upon the Township's already existing public education and outreach program. It would also assist the Township in identifying where socially vulnerable populations are located in the jurisdiction.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will inform residents of how to reduce risk from hazards and how climate change may exacerbate those risks.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No action	Current methods remain the only ones used
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Township



	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance
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Action 2025-VernonTwp-05. Public Education and Outreach

Lead Agency:	Emergency Management		
Supporting Agencies:	Township Administration, Sussex County		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Geological Hazards <input checked="" type="checkbox"/> Hazardous Materials	<input checked="" type="checkbox"/> Hurricane <input checked="" type="checkbox"/> Infestation <input checked="" type="checkbox"/> Nor'easter <input checked="" type="checkbox"/> Severe Weather <input checked="" type="checkbox"/> Severe Winter Weather <input checked="" type="checkbox"/> Wildfire	
Description of the Problem:	The Township currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about hazard mitigation, preparation, response, and recovery utilizing a variety of outreach methods. The Township does not currently have hazard mitigation information and outreach on the Township website.		
Description of the Solution:	Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Sussex County on their program that provides information to the municipalities.		
Estimated Cost:	Low		
Potential Funding Sources:	Municipal Budget		
Implementation Timeline:	2 years		
Goals Met:	1, 2, 3, 7		
Benefits:	This action will improve the current public education and outreach program in the Township by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Township.		
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 Township.		
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 potential hazards. With these businesses becoming more resilient, this action would contribute to their continuity of operations.		
Impact on Capabilities:	This action would build upon the Township's already existing public education and outreach program.		
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	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No action	Current methods remain the only ones used	
	Rely on state or federal resources	Resources may be generalized and not specific to the risks in the Township	
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving the guidance	



Action 2025-VernonTwp-06. Repetitive Loss Properties

Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Sussex County		
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> 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 Township has one repetitive loss property, but other properties may be impacted by flooding as well. Scattered privately-owned homesites are located along the Delaware River. Some of these properties are located in the Special Flood Hazard Area, with development requiring floodproofing.		
Description of the Solution:	The Township will promote and support non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as Repetitive Loss (RL) and Severe Repetitive Loss (SRL), such as acquisition/relocation or elevation depending on feasibility. The parameters for this initiative would be funding, benefits versus cost, and willing participation of property owners.		
Estimated Cost:	Medium		
Potential Funding Sources:	FEMA FMA, FMA SWIFT, Municipal Budget, County Budget, Property Owners		
Implementation Timeline:	3 years		
Goals Met:	2, 3		
Benefits:	This action would foster comprehensive floodplain management by removing at risk properties from the flood hazard area or elevating properties to reduce the flood risk.		
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.		
Impact on 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:	This action will enhance the Township'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	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No action	Current problem continues	
	Construct flood walls/barriers around vulnerable areas	Costly and can divert floodwaters to other areas	
	Deployable flood barriers for vulnerable areas	Requires a great deal of work to implement prior to each event	



Action 2025-VernonTwp-07. Flood Mitigation Interest

Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Planning Board, Township Administration		
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire	
Description of the Problem:	The Township does not have a formalized list of damaged properties or property owners which may be interested in flood mitigation measures, such as elevation or acquisition. Maintaining these lists can assist the Township in identifying and prioritizing properties to mitigate.		
Description of the Solution:	The Floodplain Administrator will develop a list for inventorying system, or properties damaged by flood events and property owners who are interested in flood mitigation measures, such as elevation or acquisition.		
Estimated Cost:	Staff time, Low		
Potential Funding Sources:	Township Budget		
Implementation Timeline:	Within 2 years		
Goals Met:	1, 2, 5		
Benefits:	Keeping a list of damaged properties and property owners interested in flood mitigation efforts may lead to the elimination of flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.		
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. Removing homes from the floodplain immediately removes the risk to life and property.		
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:	This action will create a new Township capability, while enhancing its 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. Areas experiencing flooding conditions may increase. 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	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No action	Current problem remains	
	Only share opportunities when notified of grant funding	May not be enough time to garner interest or write application	
	Wait for information from the State on flood-damaged properties	May be a delay in notice	



Action 2025-VernonTwp-08. NFIP Training

Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Engineering, Building Department, Township Administration	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	The Township does not have any certified floodplain managers (CFM) on staff. Becoming a CFM increases the depth of understanding when dealing with FEMA floodplains. The certifications ensures those that bare it understand the regulatory requirements and procedures needed to make floodplain management work effectively and efficiently at the community level.	
Description of the Solution:	Provide training and/or certification for Township staff with NFIP regulations and floodplain management ordinances. Encourage staff to become Certified Floodplain Managers via the Association of State Floodplain Manager's CFM Certification Program.	
Estimated Cost:	Low	
Potential Funding Sources:	Township Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 5	
Benefits:	This action will increase the NFIP capabilities of the Township and assure the Township's NFIP program has enough staff to accomplish its goals and reach NFIP compliance.	
Impact on Socially Vulnerable Populations:	Officials that are up to date on flood risk are more likely to encourage development outside areas of high flood risk, which is where socially vulnerable 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:	The opportunity will exist for leaders and operators of utilities and other essential services to attend training and provide direction on ways the prepare for, plan for, and prevent interruptions in service as a result of a flood.	
Impact on Capabilities:	This action will enhance the Township's current NFIP capabilities.	
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action will educate staff on NFIP regulations to assist with the flood hazard.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem remains
	Hire outside contractors for floodplain administration	Costly
	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 2025-VernonTwp-09. Critical Facilities in the Floodplain

Lead Agency:	Facility Managers	
Supporting Agencies:	Emergency Management, Floodplain Administrator	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Critical facilities located in the floodplain are not only susceptible to flood damage but also create unnecessary complications for the municipality during an emergency event and post-disaster recovery. The Township has several critical facilities in the floodplain including Canistear Reservoir #2 Dam, Dorothy Henry Library Branch, East Cove Dam, Hickory Park Dam, Highland Lakes Dam, Kohout Lake Dam, and Lake Wanda Dam.	
Description of the Solution:	Coordinate with the facility managers at the Canistear Reservoir #2 Dam, Dorothy Henry Library Branch, East Cove Dam, Hickory Park Dam, Highland Lakes Dam, Kohout Lake Dam, and Lake Wanda Dam in the Township to support the mitigation of vulnerable structures via retrofit (e.g., elevation, flood-proofing) or relocation to protect structures from future damage. Phase 1: Identify most cost-effective mitigation option Phase 2: Work with facility manager to implement selected action based on available funding and local match ability.	
Estimated Cost:	Medium	
Potential Funding Sources:	FEMA BRIC, HMGP, Township Budget, Facilities	
Implementation Timeline:	5 years	
Goals Met:	2	
Benefits:	This action will remove or reduce critical facility and community lifeline vulnerability to the flood hazard and remove or reduce safety risks for first responders.	
Impact on Socially Vulnerable Populations:	Retrofitting or relocating the identified structures will benefit socially vulnerable populations, as individuals within these populations rely on resources from various government facilities, transportation facilities, and medical and senior care facilities.	
Impact on Future Development:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Impact on Critical Facilities/Lifelines:	Noting the number of facilities located within the flood hazard area may encourage the consideration of relocating critical facilities and lifelines from the flood hazard area and deter the development of any additional facilities in the flood hazard area.	
Impact on Capabilities:	This action will enhance the Township'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	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem remains
	Floodproof existing structures	May not necessarily reduce risk
	Construct floodwalls to stop flood issues	Will most likely interrupt natural floodplain function



Action 2025-VernonTwp-10. Dam Owner Partnership

Lead Agency:	Township OEM	
Supporting Agencies:	NJDEP, Dam Owners	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	The Canistear Reservoir #2 Dam, East Cove Dam, Hickory Park Dam, Highland Lakes Dam, Kohout Lake Dam, and Lake Wanda Dam, all critical infrastructures, are located in the 1- and 0.2-percent flood hazard areas. The Township also has several high-hazard potential dams, including the Lake Panorama Dike, Great Gorge Dam, East Cove Dam, Wawayanda Lake Dam, Mountain Creek Lake Dam, Upper West Highland Lake Dam, Highland Lakes Dam, Upper Highland Lake Dam, Hidden Valley Lake Dam, Canistear Reservoir #2 Dam, Stump Pond Dam, and Pleasant Valley Lake Dam, within its jurisdiction. These structures have the potential to impact those living nearby.	
Description of the Solution:	The Township will work with the owners of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by Township OEM and shared with the County OEM. The Township will conduct public outreach to the high hazard dam owners and provide examples of mitigation actions to protect these structures from dam failure.	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 3, 5, 7	
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 socially vulnerable populations exists.	
Impact on Future Development:	Future development near inundation areas 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.	
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	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Township will be unaware of any safety concerns for the dam or its condition
	Utilize information from NJDEP	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 2025-VernonTwp-11. Firewise Program Participation

Lead Agency:	Fire Department	
Supporting Agencies:	Township Administration	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input checked="" type="checkbox"/> Wildfire
Description of the Problem:	The national Firewise USA® recognition program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. The Township is currently not part of the Firewise program.	
Description of the Solution:	The Township will follow the proper steps in applying for and becoming a Firewise community. This includes forming a board/committee, obtaining a wildfire risk assessment, developing an action plan, and hosting outreach events and programs. The Township will also create an education program and set up town hall meetings.	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal Budget	
Implementation Timeline:	3 years	
Goals Met:	1, 2, 3, 4, 5	
Benefits:	The national Firewise USA recognition program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Township may be located within very high and high fuel risk areas for wildfires. Participation in the Firewise Program will assist in the Township's efforts to educate populations on how to increase the ignition resistance of their home and property.	
Impact on Future Development:	Participation in this program requires a community wildfire assessment to be completed, which should be a community-wide view that identifies areas of successful wildfire risk reduction and areas where improvements could be made. This assessment may identify areas which the Township would like to restrict future development.	
Impact on Critical Facilities/Lifelines:	Participation in this program requires a community wildfire assessment to be completed, which should be a community-wide view that identifies areas of successful wildfire risk reduction and areas where improvements could be made, which could include relocating various critical facilities or lifelines.	
Impact on Capabilities:	This action will increase wildfire risk reduction and response capabilities for the Township.	
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	<input type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input checked="" type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input checked="" type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	The Township does not participate in the Firewise Program
	Complete half of the program requirements	The Township would not be eligible to participate in the Firewise Program



	Participate in the program, but do not utilize resources	The Township would miss opportunities to strengthen communication and safety skills
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Action 2025-VernonTwp-12. Code Coordinated Ordinance

Lead Agency:	Floodplain Administrator	
Supporting Agencies:	Construction Official, Building Department, Township Administration, NFIP State Coordinator, FEMA Regional Office	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	<p>The Township's current flood damage prevention ordinance was last adopted in 2011. It currently does not have a freeboard requirement and does not meet New Jersey's minimum requirement. A recent audit of New Jersey's model ordinances by FEMA for conformance with NFIP, resulted in a review of existing local flood damage prevention ordinances. Based upon FEMA's review, specific language related to NFIP regulations was not consistent. Additionally, it was determined that better coordination was needed between the three sets of regulations that regulate development and construction in the floodplain. These regulations are the NFIP implemented by local floodplain administrators, the New Jersey Flood Hazard Area Control Act (FHACA) implemented at the State level by the NJDEP, and the Uniform Construction Code (UCC) implemented by the local Construction Official. NJDEP used this feedback to develop a model Code Coordinated Ordinance and continues to work with municipalities to update flood damage prevention ordinances to the Code Coordinated Ordinance. The Township's ordinance requires update.</p>	
Description of the Solution:	<p>After obtaining the appropriate review and concurrence by the NFIP State Coordinator and the FEMA Regional Office, the municipality will update and adopt the Code Coordinated Ordinance.</p>	
Estimated Cost:	Staff time	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5,7	
Benefits:	<p>The updated ordinance will improve floodplain management, meet NFIP requirements, and increase resilience of new and substantially improved structures in the floodplain.</p>	
Impact on Socially Vulnerable Populations:	<p>The action will result in better regulation of construction standards within the Special Flood Hazard Area where significant risk to socially vulnerable populations exists.</p>	
Impact on Future Development:	<p>The action will result in stronger regulation of construction standards for future development in the Special Flood Hazard Area.</p>	
Impact on Critical Facilities/Lifelines:	<p>Critical facilities and lifelines located in the Special Flood Hazard Area will be required to meet the same requirements as general building construction that are set forth in the ordinance.</p>	
Impact on Capabilities:	<p>This action will improve floodplain management capabilities through better outlining of responsibilities and administrative procedures.</p>	
Climate Change Considerations:	<p>The updated ordinance includes the State's higher standards that are in place to address heightened flood risk due to climate change such as those for floodway rise and mandatory freeboard have been incorporated in these new model ordinances.</p>	
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem exists



	Modify existing flood damage prevention ordinance	Time intensive
	Leave NFIP	Residents lose flood insurance coverage

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Action 2025-VernonTwp-13. Flooded Roadways Study

Lead Agency:	Engineering	
Supporting Agencies:	Township Administration, Emergency Management, Dam Owner	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Heavy rains flood Wawayanda Road and Warwick Turnpike. A small stream connecting Kohout Lake and Parker Lake flows under Wawayanda Road; it is unknown if the Kohout Lake Dam, which is located along the Warwick Turnpike at Kohout Lake, contributes to the roadways flooding. Flooded roadways can impact evacuation routes, prevent emergency responders from reaching a location, and impede on necessary medical appointments or needs for vulnerable populations.	
Description of the Solution:	Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts on Wawayanda Road and Warwick Turnpike. Conduct a study to identify whether the Kohout Lake Dam is contributing to the flooding along the roadways. Cost effective measures will be implemented.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP	
Implementation Timeline:	5 years	
Goals Met:	2	
Benefits:	This action would reduce the flooding impacts felt by the Township along Wawayanda Road and Warwick Turnpike.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along Wawayanda Road and Warwick Turnpike. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding along Wawayanda Road and Warwick Turnpike, permitting first responders to traverse the roadways safely.	
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. Heavy rain events make traversing roadways difficult, and often times unsafe.	
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input checked="" type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No action	Current problem remains
	Raise banks of stream to increase storage capacity	Cost prohibitive
	Construct floodwall along stream	Cost prohibitive



Action 2025-VernonTwp-14. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator		
Supporting Agencies:	Emergency Management, Building Department		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Geological Hazards <input checked="" type="checkbox"/> Hazardous Materials	<input checked="" type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input checked="" type="checkbox"/> Nor'easter <input checked="" type="checkbox"/> Severe Weather <input checked="" type="checkbox"/> Severe Winter Weather <input checked="" type="checkbox"/> Wildfire	
Description of the Problem:	<p>Officials in NFIP-participating communities are responsible for regulating all development in SFHAs by issuing permits and enforcing local floodplain requirements, including Substantial Damage, for the repairs of damaged buildings. After any disaster event, they must:</p> <ul style="list-style-type: none"> Determine where the damage occurred within the community and if the damaged structures are in an SFHA. Determine what to use for "market value" and cost to repair; uniformly applying regulations will protect against liability and promote equitable administration. Determine if repairing plus improving the damaged structure equals or exceeds 50% of the structure's pre-damage value. Require permits for floodplain development. <p>The municipality does not have a Substantial Damage Management Plan in place, nor do they have a formal process in place when conducting substantial damage determinations. The municipality is in need of a formal process and plan to provide a framework for conducting such inspections and determinations.</p>		
Description of the Solution:	<p>The municipality will develop a Substantial Damage Management Plan, following the six step planning process in 2021 Developing a Substantial Damage Management Plan (https://crsresources.org/files/500/developing_subst_damage_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.</p>		
Estimated Cost:	Low		
Potential Funding Sources:	Municipal budget		
Implementation Timeline:	Within 5 years to develop the plan; ongoing to maintain and update the plan		
Goals Met:	2, 5		
Benefits:	This plan will provide a process in making Substantial Damage Determinations and allow the municipality to make these determinations and meet NFIP requirements more quickly.		
Impact on Socially Vulnerable Populations:	Substantially damaged structures are required to be rebuilt to be compliance with current codes. Socially vulnerable populations may not have the financial means to make these improvements. This action may allow for the identification of potential resources to address substantial damages to structures owned by socially vulnerable populations.		
Impact on Future Development:	A Substantial Damage Management Plan would include all existing, current, and future development in the municipality.		
Impact on Critical Facilities/Lifelines:	A Substantial Damage Management Plan would include all critical facilities and lifelines in the municipality.		
Impact on Capabilities:	This action improves disaster recovery capabilities.		
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events. This action provides additional planning for disaster recovery.		
Mitigation Category	<input checked="" type="checkbox"/> Local Plans and Regulations (LPR) <input type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input checked="" type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action		Evaluation



No Action	Current problem remains
Rely on state or federal resources following disaster events	Resources may not be available during major widespread events
Establish MOUs with outside agencies to conduct Substantial Damage Determinations	A plan outlining responsibilities is still necessary to prevent missing important requirements

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Action 2025-VernonTwp-15. Emergency Generators at Critical Facilities

Lead Agency:	Engineering	
Supporting Agencies:	Fire Stations, Emergency Management, Township Administration	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Disease Outbreak <input checked="" type="checkbox"/> Drought <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input checked="" type="checkbox"/> Geological Hazards <input checked="" type="checkbox"/> Hazardous Materials	<input checked="" type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input checked="" type="checkbox"/> Nor'easter <input checked="" type="checkbox"/> Severe Weather <input checked="" type="checkbox"/> Severe Winter Weather <input checked="" type="checkbox"/> Wildfire
Description of the Problem:	Fire Stations in the Township are in need of emergency back-up generators; the stations are not only a critical facility and community lifeline themselves but are also used as warming and cooling centers. The MacAfee Station (88 State RT 94, McAfee, NJ 07428) does not have an emergency back-up generator; the Highland Lakes Station's (813 Canistear Road, Highland Lakes, NJ 07422) current generator is undersized and does not have the capacity to power the building should an emergency occur and impact power usage. High winds associated with hurricanes, nor'easters, severe weather, and severe winter weather are known to cause power outages, which would impact the continuity of operations at both critical facilities.	
Description of the Solution:	The Township's Engineer will assess the needs of the buildings to determine the capacity required for the generator. Following this determination, the generator and all necessary components and accessories will be installed at both the MacAfee Station (88 State RT 94, McAfee, NJ 07428) and Highland Lakes Station's (813 Canistear Road, Highland Lakes, NJ 07422). The employees at either fire station will perform the needed maintenance for these generators.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Annual Budget	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 5, 6, 7	
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	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input type="checkbox"/> Structural Flood Control Projects (SP) <input checked="" type="checkbox"/> Emergency Services (ES)
Priority	<input type="checkbox"/> High	<input checked="" type="checkbox"/> Medium
Alternatives:		
	Action	Evaluation
	No Action	Current problem remains
	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.
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Action 2025-VernonTwp-16. Vernon Crossing Road Flood Mitigation

Lead Agency:	Engineering	
Supporting Agencies:	Township Administration, Emergency Management, Public Works	
Hazard(s) of Concern:	<input type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Vernon Crossing Road is a low-lying area in the Township prone to flooding. The Black Creek, a tributary of Vernon Valley Lake, flows alongside and underneath the roadway. Flooded roadways create treacherous conditions for drivers and emergency responders. Flooded roadways can impact evacuation routes, prevent emergency responders from reaching a location, and impede on necessary medical appointments or needs for vulnerable populations.	
Description of the Solution:	Work with partnering agencies to identify feasible mitigation measures to provide relief from flooding impacts on Vernon Crossing Road. Cost effective measures will be implemented.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HMGP	
Implementation Timeline:	5 years	
Goals Met:	2	
Benefits:	This action would reduce the flooding impacts felt by the Township on Vernon Crossing Road.	
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding on Vernon Crossing Road. Furthermore, this action will assist in keeping roadways clear of flood waters for the populations which may need to attend medical appointments or require medical attention from first responders.	
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.	
Impact on Critical Facilities/Lifelines:	This action would assist in the reduction of roadway flooding on Vernon Crossing Road, permitting first responders to traverse the roadways safely.	
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. Heavy rain events make traversing roadways difficult, and often times unsafe.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem remains
	Raise banks of stream to increase storage capacity	Cost prohibitive
	Construct floodwall along stream	Cost prohibitive



Action 2025-VernonTwp-17. Lake Panorama Dike Rehab

Lead Agency:	Lake Panorama Community Association		
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire	
Description of the Problem:	Lake Panorama Dike is a Class I High Hazard Dam that is located on Panorama Lake. The dam is owned by the Lake Panorama Community Association. Failure of the dam could result in inundation of populated areas, forested areas, recreation areas, and local roadways including Panorama Drive, Upper Notch Road, and Lakeview Drive Northwest. The dam was last inspected in 2023 and found to be in poor condition, meaning 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 work with the Lake Panorama Community Association to complete an engineering study of Lake Panorama Dike. The Township will also request information and input from its Public Works/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 Township and the Lake Panorama Community Association will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HHPD		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 8		
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No Action	Current problem continues	
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Panorama Lake as an environmental and recreational 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
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Action 2025-VernonTwp-18. Great Gorge Dam Rehab

Lead Agency:	Mountain Creek Resort	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Great Gorge Dam is a Class I High Hazard Dam that is located on a tributary of the Black River. The dam is owned by the Mountain Creek Resort. Failure of the dam could result in inundation of forested and recreational areas. Although the dam was last inspected in 2022 and found to be in satisfactory 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 work with the Mountain Creek Resort to complete an engineering study of Great Gorge Dam. The Township will also request information and input from its Public Works/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 Township and the Mountain Creek Resort will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of a water supply 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
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Action 2025-VernonTwp-19. East Cove Dam Rehab

Lead Agency:	New Jersey Division of Parks and Forestry	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	<p>East Cove Dam is a Class I High Hazard Dam that is located on Wawayanda Lake. The dam is owned by the New Jersey Division of Parks and Forestry. Failure of the dam could result in inundation of forested areas, recreational areas, and local roadways including Campsite Road. East Cove Dam is located upstream from the Double Kill Stream, which feeds into Laurel Pond. Laurel Pond is closely located to the Wawayanda Lake Dam, therefore should a failure occur at the East Cove Dam, it is possible the Wawayanda Lake Dam may be impacted by the influx of flood waters, and which could lead to a secondary dam failure. Although the East Cove Dam was last inspected in 2022 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.</p>	
Description of the Solution:	<p>The Municipal Engineer will work with the New Jersey Division of Parks and Forestry to complete an engineering study of East Cove Dam. The Township will also request information and input from its Public Works/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 Township and the New Jersey Division of Parks and Forestry will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.</p>	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues



	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Wawayanda Lake as an environmental and recreational 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

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Action 2025-VernonTwp-20. Wawayanda Lake Dam Rehab

Lead Agency:	New Jersey Division of Parks and Forestry	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	<p>Wawayanda Lake Dam is a Class I High Hazard Dam that is located on Wawayanda Lake. The dam is owned by the New Jersey Division of Parks and Forestry. Failure of the dam could result in inundation of forested and recreational areas. The Wawayanda Dam is located closely to Laurel Pond, which receives waters from the Double Kill Stream. This stream is closely located near the East Cove Dam. Should a dam failure occur at the East Cove Dam, it is possible the Wawayanda Lake Dam may be impacted by the influx of flood waters, from these waterways, which could lead to a secondary dam failure. Although the Wawayanda Lake Dam was last inspected in 2022 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.</p>	
Description of the Solution:	<p>The Municipal Engineer will work with the New Jersey Division of Parks and Forestry to complete an engineering study of Wawayanda Lake Dam. The Township will also request information and input from its Public Works/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 Township and the New Jersey Division of Parks and Forestry will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.</p>	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
Benefits:	<p>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.</p>	
Impact on Socially Vulnerable Populations:	<p>The action will result in better preparedness within the Special Flood Hazard Area and inundation areas where significant risk to socially vulnerable populations exists.</p>	
Impact on Future Development:	<p>Future development located in or near the dam inundation area will be further protected from a dam failure event.</p>	
Impact on Critical Facilities/Lifelines:	<p>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.</p>	
Impact on Capabilities:	<p>This action will improve planning and response capabilities through the understanding of responsibilities and procedures.</p>	
Climate Change Considerations:	<p>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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.</p>	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues



	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Wawayanda Lake as an environmental and recreational 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

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Action 2025-VernonTwp-21. Mountain Creek Dam Rehab

Lead Agency:	Mountain Creek Resort	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Mountain Creek Lake Dam is a Class I High Hazard Dam that is located on a tributary of the Black River. The dam is owned by the Mountain Creek Resort. Failure of the dam could result in inundation of forested and recreational areas. The dam was last inspected in 2022 and found to be in poor condition, meaning 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 work with the Mountain Creek Resort to complete an engineering study of Mountain Creek Lake Dam. The Township will also request information and input from its Public Works/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 Township and the Mountain Creek Resort will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of an environmental and recreational 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
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Action 2025-VernonTwp-22. Upper West Highland Dam Rehab

Lead Agency:	Highland Lakes Country Club and Community Association	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Upper West Highland Lake Dam is a Class I High Hazard Dam that is located on Upper West Highland Lake. The dam is owned by the Highland Lakes Country Club and Community Association. Failure of the dam could result in inundation of densely populated areas, recreational areas, critical facilities and community lifelines, and local roadways including Upper Highlands Lake Drive, Waconia Road, Pocasset Road, and Breakneck Road. The Upper West Highland Lake Dam is closely located to the Upper Highland Lake Dam and Highland Lake Dam. Should a failure occur at any of these dams, cascading impacts from the flood waters may result in subsequent dam failures. Although the Upper West Highland Lake Dam was last inspected in 2023 and found to be in satisfactory 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 work with the Highland Lakes Country Club and Community Association to complete an engineering study of Upper West Highland Lake Dam. The Township will also request information and input from its Public Works/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 Township and the Highland Lakes Country Club and Community Association will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Alternatives:	Action	Evaluation



No Action	Current problem continues
Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Upper West Highland Lake as an environmental and recreational 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

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Action 2025-VernonTwp-23. Highland Lakes Dam Rehab

Lead Agency:	Highland Lakes Country Club and Community Association	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	<p>Highland Lakes Dam is a Class I High Hazard Dam that is located on Highland Lake. The dam is owned by the Highland Lakes Country Club and Community Association. Failure of the dam could result in inundation of densely populated areas, recreational areas, critical facilities and community lifelines, and local roadways including Lakeside Drive East, Lakeside Drive, and Birch Road. The Highland Lakes Dam is closely located to the Upper West Highland Lake Dam and Upper Highland Lake Dam. Should a failure occur at any of these dams, cascading impacts from the flood waters may result in subsequent dam failures. Although the dam was last inspected in 2023 and found to be in satisfactory condition, the risk of dam failure warrants an engineering evaluation to determine if retrofits of the dam would result in safer conditions.</p>	
Description of the Solution:	<p>The Municipal Engineer will work with the Highland Lakes Country Club and Community Association to complete an engineering study of Highland Lakes Dam. The Township will also request information and input from its Public Works/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 Township and the Highland Lakes Country Club and Community Association will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.</p>	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues



	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Highland Lake as an environmental and recreational 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

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Action 2025-VernonTwp-24. Upper Highland Dam Rehab

Lead Agency:	Highland Lakes Country Club and Community Association	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Upper Highland Lake Dam is a Class I High Hazard Dam that is located on Upper Highland Lake. The dam is owned by the Highland Lakes Country Club and Community Association. Failure of the dam could result in inundation of recreational areas, critical facilities and community lifelines, and local roadways including Lakeside Drive, Casco Road, and Breakneck Road. The Upper Highland Lake Dam is closely located to the Upper West Highland Lake Dam and Highland Lake Dam. Should a failure occur at any of these dams, cascading impacts from the flood waters may result in subsequent dam failures. Although the dam was last inspected in 2022 and found to be in satisfactory 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 work with the Highland Lakes Country Club and Community Association to complete an engineering study of Upper Highland Lake Dam. The Township will also request information and input from its Public Works/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 Township and the Highland Lakes Country Club and Community Association will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues



	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Upper Highland Lake as an environmental and recreational 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

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Action 2025-VernonTwp-25. Hidden Valley Lake Dam Rehab

Lead Agency:	National Winter Activity Center	
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer	
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire
Description of the Problem:	Hidden Valley Lake Dam is a Class I High Hazard Dam that is located on a tributary of the Pachuck Creek. The dam is owned by the National Winter Activity Center. Failure of the dam could result in inundation of populated areas, woodland areas, recreational areas, and local roadways including Curtis Drive, Meadow Lane, and Village Way. Although the dam was last inspected in 2024 and found to be in satisfactory 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 work with the National Winter Activity Center to complete an engineering study of Hidden Valley Lake Dam. The Township will also request information and input from its Public Works/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 Township and the National Winter Activity Center will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.	
Estimated Cost:	High	
Potential Funding Sources:	FEMA BRIC, HHPD	
Implementation Timeline:	Within 5 years	
Goals Met:	1, 2, 8	
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.	
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium
		<input type="checkbox"/> Low
Alternatives:	Action	Evaluation
	No Action	Current problem continues
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of an environmental and recreational 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
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Action 2025-VernonTwp-26. Canistear Reservoir #2 Dam Rehab

Lead Agency:	City of Newark Department of Water and Sewer Utilities		
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire	
Description of the Problem:	Canistear Reservoir #2 Dam is a Class I High Hazard Dam that is located on the Canistear Reservoir, leading into the Pacock Brook. The dam is owned by the City of Newark Department of Water and Sewer Utilities. Failure of the dam could result in inundation of forested and woodland areas, and potentially local roadways including Upper Dam Road and Lower Dam Road. Although the dam was last inspected in 2023 and found to be 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 work with the City of Newark Department of Water and Sewer Utilities to complete an engineering study of Canistear Reservoir #2 Dam. The Township will also request information and input from its Public Works/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 Township and the City of Newark Department of Water and Sewer Utilities will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HHPD		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 8		
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No Action	Current problem continues	
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Canistear Reservoir #2 Dam as a water supply 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
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Action 2025-VernonTwp-27. Stump Pond Dam Rehab

Lead Agency:	Pleasant Valley Country Club		
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire	
Description of the Problem:	Stump Pond Dam is a Class I High Hazard Dam that is located on Pleasant Valley Lake. The dam is owned by the Pleasant Valley Country Club. Failure of the dam could result in inundation of densely populated areas, woodland areas, recreational areas, and local roadways including Woodland Drive, West Shore Drive, and North Shore Drive. The dam was last inspected in 2023 and found to be in poor condition, meaning 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 work with the Pleasant Valley Country Club to complete an engineering study of Stump Pond Dam. The Township will also request information and input from its Public Works/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 Township and the Pleasant Valley Country Club will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HHPD		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 8		
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No Action	Current problem continues	
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Pleasant Valley Lake as an environmental and recreational 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
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Action 2025-VernonTwp-28. Pleasant Valley Lake Dam Rehab

Lead Agency:	Pleasant Valley Country Club		
Supporting Agencies:	County Engineer, County OEM, NJDEP, Municipal Engineer		
Hazard(s) of Concern:	<input checked="" type="checkbox"/> Dam Failure <input type="checkbox"/> Disease Outbreak <input type="checkbox"/> Drought <input type="checkbox"/> Earthquake <input type="checkbox"/> Flood <input type="checkbox"/> Geological Hazards <input type="checkbox"/> Hazardous Materials	<input type="checkbox"/> Hurricane <input type="checkbox"/> Infestation <input type="checkbox"/> Nor'easter <input type="checkbox"/> Severe Weather <input type="checkbox"/> Severe Winter Weather <input type="checkbox"/> Wildfire	
Description of the Problem:	Pleasant Valley Lake Dam is a Class I High Hazard Dam that is located on Pleasant Valley Lake. The dam is owned by the Pleasant Valley Country Club. Failure of the dam could result in inundation of densely populated areas, woodland areas, recreational areas, and local roadways including Woodland Drive, West Shore Drive, and North Shore Drive. The dam was last inspected in 2023 and found to be in poor condition, meaning 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 work with the Pleasant Valley Country Club to complete an engineering study of Pleasant Valley Lake Dam. The Township will also request information and input from its Public Works/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 Township and the Pleasant Valley Country Club will pursue funding support, permit approval from NJDEP, and implement the cost-effective measures.		
Estimated Cost:	High		
Potential Funding Sources:	FEMA BRIC, HHPD		
Implementation Timeline:	Within 5 years		
Goals Met:	1, 2, 8		
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 socially vulnerable 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 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 due to projected increases in precipitation. This action will increase the capabilities to respond to these events.		
Mitigation Category	<input type="checkbox"/> Local Plans and Regulations (LPR) <input checked="" type="checkbox"/> Structure and Infrastructure Project (SIP)	<input type="checkbox"/> Natural Systems Protection (NSP) <input type="checkbox"/> Education and Awareness Programs (EAP)	
CRS Category	<input type="checkbox"/> Preventative Measures (PR) <input type="checkbox"/> Property Protection (PP) <input type="checkbox"/> Public Information (PI)	<input type="checkbox"/> Natural Resource Protection (NR) <input checked="" type="checkbox"/> Structural Flood Control Projects (SP) <input type="checkbox"/> Emergency Services (ES)	
Priority	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low
Alternatives:	Action	Evaluation	
	No Action	Current problem continues	
	Decommission Dam	High cost, flood risk for nearby infrastructure increased, loss of Pleasant Valley Lake as an environmental and recreational 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
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