

Passaic County Hazard Mitigation Plan

2025 Update



TETRA TECH

2025 Passaic County Hazard Mitigation Plan

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PREPARED FOR

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2025 Update

Volume I—Main Plan



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EXECUTIVE SUMMARY

Hazard Mitigation Overview

Hazard mitigation is the use of long-term and short-term policies, programs, projects, and other activities to minimize the loss of life, injury, and property damage that can result from a disaster. Communities, residents, and businesses across the United States have been faced with continually increasing costs associated with natural and human-caused hazards. Hazard mitigation is the first step in reducing risk and is the most effective way to reduce costs associated with hazards.

Passaic County has developed a hazard mitigation plan (HMP) to reduce risks from disasters to the people, property, economy, and environment within the County's planning area. The County and 16 participating local jurisdictions (the Planning Partners) prepared this plan as an update to the 2020 Passaic County HMP. The updated 2025 HMP includes countywide analysis and assessment of hazards, risk, and capabilities.

The 2025 HMP complies with federal and state hazard mitigation planning requirements. The federal Disaster Mitigation Act of 2000 requires state and local entities to implement pre-disaster mitigation planning and develop HMPs in order to establish eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs. FEMA has issued guidelines for the development of multi-jurisdictional hazard mitigation plans that meet this requirement. The New Jersey Office of Emergency Management (NJOEM) supports plan development for jurisdictions in New Jersey.

The Planning Process

This HMP update documents the process and outcomes of the Planning Partners' mitigation planning efforts. To support the planning process, the Planning Partners accomplished the following:

- Developed a Steering Committee consisting of key stakeholders and a countywide Planning Partnership made up of the Steering Committee members, the Planning Partners, and other regional stakeholders
- Reviewed the 2020 Passaic County Hazard Mitigation Plan
- Identified hazards of concern to the County to be included in the update
- Profiled the hazards of concern
- Estimated the inventory at risk and potential losses associated with these hazards
- Reviewed and updated the mitigation goals and objectives
- Reviewed mitigation strategy and actions outlined in the 2020 HMP to indicate progress
- Developed new mitigation actions to reduce the vulnerability of assets from hazards of concern
- Involved a wide range of stakeholders and the public in the plan update process
- Developed mitigation plan maintenance procedures to be executed after obtaining approval of the plan from NJOEM and FEMA

Involvement by Stakeholders and the Public

The Planning Partners kept stakeholders and the general public informed throughout the planning process and provided opportunities for public comment and input. In addition, numerous agencies and stakeholders participated as core or support members of the Steering Committee or Planning Partnership, providing input and expertise throughout the planning process.

Participating Jurisdictions Involved in the Mitigation Planning Effort

The following are the local governments in Passaic County that participated as Planning Partners in this HMP update:

- County of Passaic
- Borough of Bloomingdale
- City of Clifton
- Borough of Haledon
- Borough of Hawthorne
- Township of Little Falls
- Borough of North Haledon
- City of Passaic
- City of Paterson
- Borough of Pompton Lakes
- Borough of Prospect Park
- Borough of Ringwood
- Borough of Totowa
- Borough of Wanaque
- Township of Wayne
- Township of West Milford
- Borough of Woodland Park

The participating jurisdictions provided significant input into the preparation of the plan, in particular the preparation of jurisdiction-specific annexes included in Volume II.

Multiple Agency Support for Hazard Mitigation

Primary responsibility for the development and implementation of mitigation strategies and policies lies with local governments. However, local governments are not alone; various partners and resources at the regional, state, and federal levels are available to assist communities in the development and implementation of mitigation strategies. In New Jersey, NJOEM is the lead agency providing hazard mitigation planning assistance to local jurisdictions. In addition, FEMA provides grants, tools, guidance, and training to support mitigation planning.

In updating the HMP, the participating jurisdictions fully coordinated with and solicited participation from county and local governments, relevant organizations and groups, state and federal agencies, and the general public. This coordination ensured that stakeholders had established communication channels and relationships to support mitigation planning and mitigation actions included in the plan.

Additional input and support for this planning effort was obtained from a wide range of agencies as well as through public involvement. Under the project management of the Passaic County Office of Emergency Management (OEM), the Passaic County Hazard Mitigation Steering Committee provided oversight for the preparation of this plan. The Steering Committee included representatives from the following entities:

- Passaic County OEM
- Passaic County Department of Planning
- Passaic County Department of Human Services
- Passaic County Sheriff's Office
- Passaic County Department of Cultural and Historic Affairs

- Passaic County School Superintendents
- Borough of Pompton Lakes
- Paterson Public Schools
- New Jersey Highlands Council
- North Jersey Transportation Planning Authority
- Rutgers, The State University of New Jersey
- Catholic Charity and Community Services
- United Way of Passaic County

Risk Assessment for Local Hazards of Concern

The Planning Partners evaluated each jurisdiction's risk and vulnerability due to each of the hazards of concern, based on past events, past and predicted future losses, and the expected probability of future occurrence. From these evaluations, hazards were ranked as high, medium, or low risk to each jurisdiction. The hazard rankings were used to focus and prioritize individual jurisdictional mitigation strategies. Summary overall hazard rankings for all of Passaic County are presented in Table ES-1.

Table ES-1. Countywide Ranking for Passaic County Hazards of Concern

Hazard of Concern	Hazard Ranking
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

Capability Assessment and Plan Integration into Other Local Mechanisms

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. Within the County, there are many existing plans and programs that support hazard risk management. It is critical that this HMP integrate, complement, and reference those plans and programs to the extent practical in order for it to be a comprehensive resource for hazard mitigation.

The HMP includes a capability assessment to review relevant local mechanisms for each participating jurisdiction. This assessment identifies where each jurisdiction is currently able to implement hazard mitigation measures and where each would benefit from improved capabilities for such measures. The capability assessment also provides a summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county and local) that support hazard mitigation in the County. In the jurisdictional annexes, each participating jurisdiction identifies how it has integrated hazard risk management into its existing planning, regulatory and operational/administrative framework, and how it intends to continue to promote this integration.

Mitigation Strategy

Hazard Mitigation Plan Goals and Objectives

It is a federal requirement for hazard mitigation plans to include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards of concern.

The Passaic County HMP planning process included a review and update of mitigation goals and objectives that were previously established to guide the selection of mitigation actions addressing all hazards of concern. Mitigation goals were updated based on the updated risk assessment, discussions, research, and input from plan participants and stakeholders. The goal development process considered the goals expressed in the State of New Jersey Hazard Mitigation Plan, as well as other relevant county and local planning documents.

2025 Passaic County HMP Goals

Goal 1: Protect Life

Goal 2: Protect Property

Goal 3: Increase Public Preparedness and Awareness

Goal 4: Develop and Maintain an Understanding of Risks from Hazards

Goal 5: Enhance County and Local Mitigation Capabilities to Reduce Hazard Vulnerabilities

Goal 6: Support Continuity of Operations Pre-, During and Post-Hazard Events

Goal 7: Reduce the Risk of Natural Hazards for Socially Vulnerable Populations and Underserved Communities

Goal 8: Increase Hazard Mitigation Collaboration Within Watersheds and Along Waterways That Are Flood Prone to Ensure Cohesive Mitigation Strategies

Goal 9: Address Long-Term Vulnerabilities from High Hazard Dams

Implementation of the 2020 Plan

The status of the mitigation projects identified in the 2020 HMP was reviewed for this HMP. Numerous projects and programs have been implemented that have reduced hazard vulnerability to assets in the planning area. Uncompleted projects have been re-evaluated and either deleted or incorporated into this updated plan, with modifications as necessary. The Planning Partners' annexes describe these mitigation activities in more detail, and plan maintenance procedures have been developed to encourage thorough integration with local decisions and processes and regular review of implementation progress.

2025 Mitigation Strategy

Passaic County included a variety of actions within each jurisdiction's annex, including updates to local flood damage prevention ordinances to be congruent with state regulations, outreach to socially vulnerable populations, backup power for critical facilities, and flood mitigation along flood-prone roads. The 2025 Mitigation Strategy identifies how many total actions were developed by all participants.

1. INTRODUCTION

Passaic County has developed a hazard mitigation plan (HMP) to reduce risks from disasters to the people, property, economy, and environment within the County. Developed by the County and 16 participating local jurisdictions (the Planning Partners), this HMP updates the 2020 Passaic County HMP. The updated 2025 HMP includes countywide analysis and assessment of hazards, risk, and capabilities.

1.1 OVERVIEW TO HAZARD MITIGATION PLANNING

1.1.1 What Is Hazard Mitigation?

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk and effects that can result from hazards. The Federal Emergency Management Agency (FEMA) defines a hazard mitigation plan as the documentation of a state or local government's evaluation of natural hazards and strategies to mitigate them.

Effective mitigation planning helps people, organizations, and government agencies to better prepare for and respond when disasters occur. It also allows local governments to remain eligible for FEMA grant funding for mitigation projects that will reduce the impact of future disaster events. The long-term benefits of mitigation planning and implementation include the following:

- An increased understanding of hazards faced by local communities
- A more sustainable and disaster-resistant community
- Financial savings through partnerships that support planning and mitigation efforts
- Focused use of limited resources on hazards that have the biggest impact on the community
- Reduced long-term impacts and damage to human health and structures
- Reduced costs associated with response and recovery efforts, including repairs

FEMA estimates that for every dollar spent on damage prevention (mitigation), twice that amount is saved by not having to perform post-disaster repairs.

1.1.2 Regulatory Framework

The federal government encourages communities to assess their vulnerability to various hazards before disaster strikes and then take actions to reduce or eliminate potential risks. A disaster-resistant community can rebound from a natural disaster with less loss of property or human injury, at much lower cost and, consequently, more quickly. Moreover, other costs associated with disasters are minimized, such as the time lost from productive activity by businesses and industries.

The federal Disaster Mitigation Act of 2000 (DMA 2000) encourages states, tribes, and local governments to undertake mitigation planning. Under DMA 2000, communities seeking certain hazard-related federal funding must have a plan that identifies actions to mitigate hazards, risks, and vulnerabilities and establishes a strategy to implement those actions. The HMP must identify potential natural hazards to the health, safety, and well-being of its residents and identify actions that the community can take to mitigate those hazards before disaster strikes. States and local governments must update HMPs every 5 years to remain eligible for funding.

Regulations implementing the intent and requirements of DMA 2000 are included in Title 44 of the Code of Federal Regulations, Section 201 (44 CFR 201). One goal of the federal regulations is to facilitate cooperation between state and local authorities, prompting them to work together. This enhanced planning process enables local and state governments to better articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects. In New Jersey, responsibility for fulfilling the requirements of DMA 2000 and 44 CFR 201 has been delegated to the New Jersey Office of Emergency Management (NJOEM). Table 1-1 summarizes the 44 CFR 201 requirements and where each is addressed in this hazard mitigation plan.

Table 1-1. FEMA Local Mitigation Plan Review Crosswalk

Plan Criteria	Primary Location in Plan
Prerequisites	
Adoption by the Local Governing Body: §201.6(c)(5)	Section 2.7
Planning Process	
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	Chapter 2
Risk Assessment	
Identifying Hazards: §201.6(c)(2)(i)	Chapter 4, 5
Profiling Hazards: §201.6(c)(2)(i)	Chapters 6 – 13
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	Chapters 6 – 13
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)	Chapters 6 – 13
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)	Chapters 6 – 13
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)	Chapters 6 – 13
Mitigation Strategy	
Local Hazard Mitigation Goals: §201.6(c)(3)(i)	Chapter 16; Volume II Annexes
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	Chapter 16; Volume II Annexes
Implementation of Mitigation Actions: §201.6(c)(3)(iii)	Chapter 16; Volume II Annexes
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)	Chapter 16; Volume II Annexes
Plan Maintenance Process	
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)	Chapter 17
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	Chapter 17; Volume II Annexes
Continued Public Involvement: §201.6(c)(4)(iii)	Chapter 17

1.1.3 Specialized Terms and Concepts

Like any technical field, hazard mitigation has developed over the years its own set of terms and concepts with particular meanings within the hazard mitigation practice. A full glossary and list of acronyms is provided in the appendices. The list below provides a quick reference for specialized terms whose use is especially prominent in this hazard mitigation plan:

- **Adaptive capacity—**the ability of a human or natural system to adjust to climate change by moderating potential damage, taking advantage of opportunities, or coping with the consequences (EPA 2023)
- **Asset—**anything that is important to the character and function of a community (e.g., people, structures, community lifelines, the economy, and natural, historic, and cultural resources) (FEMA 2023)
- **Capability assessment—**an evaluation of which authorities, policies, programs, funding, and resources a participant has to accomplish hazard mitigation (FEMA 2023)

- **Cascading hazards—**a primary event, such as heavy rainfall, seismic activity, or rapid snowmelt, followed by a chain of consequences that may range from modest (lesser than the original event) to substantial (National Academies of Sciences, Engineering, and Medicine 2022)
- **Community lifelines—**the most fundamental services in a community that, when stabilized, enable all other aspects of society to function (FEMA 2023)
- **Extent—**the range of anticipated intensities of the identified hazards within a community, most commonly expressed using various scientific scales (FEMA 2022)
- **Hazard profile—**a description of a hazard's location, extent, previous occurrences and probability of future events within a community (FEMA 2023)
- **Hazard ranking—**the process of identifying the hazards that pose the greatest risk to a community, based on how likely the hazard is to occur, the potential consequences if the hazard does occur, and other relevant local factors
- **Impact—**the consequences or effects of a hazard on a community's assets identified in the vulnerability assessment. (FEMA 2023)
- **Integration—**the inclusion of hazard mitigation principles, vulnerability information and mitigation actions into other existing community planning to leverage activities that have co-benefits, reduce risk, and increase resilience (FEMA 2022)
- **Mitigation action—**measures, projects, plans or activities proposed to reduce the current and future vulnerabilities identified in the risk assessment (FEMA 2023)
- **Mitigation strategy—** the long-term blueprint for reducing the potential hazard-related losses identified in the risk assessment; the strategy consists of mitigation goals, mitigation actions, and a plan for implementing the actions (FEMA 2023)
- **Natural hazard—**a source of harm or difficulty created by a meteorological, environmental, or geological event (FEMA 2023)
- **Plan maintenance—**monitoring and updating a hazard mitigation plan as warranted by changing conditions, availability of new information, and progress on the proposed mitigation actions (FEMA 2023)
- **Planning process—**the procedures used to develop a hazard mitigation plan with broad acceptance across the community
- **Risk—**the potential for damage or loss when natural hazards interact with people or assets (FEMA 2023)
- **Risk assessment—**a data-driven analysis to find where a local jurisdiction is vulnerable to hazards (FEMA 2023)
- **Social vulnerability—**the potential for loss within an individual or social group, as affected by traits that influence an individual's or group's resilience, which is their ability to prepare, respond, cope, or recover from an event (FEMA 2023)
- **Stakeholder—**individuals or groups that a mitigation action or policy affects, including businesses, private organizations, and residents (FEMA 2023)
- **Vulnerability—**a description of which assets within locations identified to be hazard prone are at risk from the effects of the hazard (FEMA 2023)

1.2 HISTORY OF HAZARD MITIGATION PLANNING IN PASSAIC COUNTY

1.2.1 Previous Passaic County HMPs

Following the adoption of DMA 2000 Passaic County prepared and adopted its first hazard mitigation plan in 2010. The plan has been regularly updated since then, with updates in 2015 and 2020.

1.2.2 Key Changes in the Current Update

The following are the most significant changes made between the previous County HMP (2020) and the current (2025) update:

- The 2025 Passaic County HMP Steering Committee re-evaluated the inclusion of coastal storm as a standalone hazard. The primary hazard posed by coastal storms is strong winds, which are covered under the severe weather hazard. Coastal storms were included as a sub-type of severe weather to avoid duplication of efforts and streamline the mitigation strategy.
- The 2025 Passaic County HMP Steering Committee re-evaluated the inclusion of disease outbreak as a hazard of concern. Disease outbreaks are typically assessed and addressed in preparedness and public health plans, so it was removed from the HMP to avoid duplication of efforts.
- The 2025 Passaic County HMP Steering Committee re-evaluated the inclusion of hazardous substances as a hazard of concern. Hazardous substance releases are typically in preparedness plans, so it was removed from the HMP to avoid duplication of efforts.
- The 2025 Passaic County HMP Steering Committee re-evaluated the inclusion of earthquake as a standalone hazard. The previous County HMP included earthquakes and geological hazards as separate hazards of concerns. However, FEMA's National Risk Index indicates Passaic County has a relatively low risk ranking for earthquakes, and the County has a limited history of occurrences. The Steering Committee opted to include earthquake as a sub-type of GEOLOGICAL HAZARDS to avoid duplication of efforts and streamline the mitigation strategy.
- The 2025 Passaic County HMP Steering Committee re-evaluated invasive species as a hazard of concern. The Steering Committee determined that invasive species is a cascading impact triggered by other hazard events and addressed by other planning mechanisms, such as environmental conservation. This hazard was removed from the HMP to avoid duplication of efforts.
- The 2020 HMP presented the identification of hazards of concern, risk assessment methodology and tools, hazards of concern profiles, and hazard ranking in Section 4 as part of the overall risk assessment. For the 2025 HMP update, these sections were expanded and presented as standalone chapters (Chapter 4 through 14).

1.3 PLAN ORGANIZATION

The Passaic County HMP is organized into two volumes: Volume I includes all information that applies to the entire planning area (Passaic County); and Volume II includes specific information for each participating jurisdiction.

Volume I is a resource for ongoing mitigation analysis. It includes a description of the County and its jurisdictions as well as information on mitigation planning and how the risk assessment and capability assessment were performed. Volume I of the plan includes the following chapters:

- Executive Summary
- Chapter 1: Introduction
- Chapter 2: Planning Process—A description of the plan methodology and development process, committee and stakeholder roles and activities, and how the plan will be incorporated into existing programs. Information regarding the adoption of the plan by each participating jurisdiction.
- Chapter 3: County Profile—An overview of Passaic County, including general information and physical conditions, land use patterns and trends, population and demographics, economy, general building stock inventory, community lifelines, and natural, historic, and cultural resources
- Chapter 4: Risk Assessment Methodology—Description of the methodology used to assess hazard risk and the status of local data.
- Chapter 5: Identification of Hazards of Concern—Documentation of the process of identifying the natural hazards of concern for further profiling and evaluation.
- Chapters 6 to 13—Hazard profiles and findings of the risk assessment (estimates of the impact of hazard events on life, safety, and health; general building stock; critical facilities; the economy, and natural, historic, and cultural resources).
- Chapter 14: Hazard Ranking—Description and summary of the hazard ranking process.
- Chapter 15: Capability Assessment—A summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county, local) that support hazard mitigation within the County.
- Chapter 16: Mitigation Strategy—Information regarding the mitigation goals and objectives identified by the Steering Committee in response to priority hazards of concern, and the process by which County and local mitigation strategies have been developed or updated.
- Chapter 17: Plan Maintenance Procedures—A system to continue to monitor, evaluate, maintain, and update the plan.

Volume II consists of annexes for each participating jurisdiction. Each annex summarizes the jurisdiction's planning, regulatory, and fiscal capabilities; evaluates vulnerabilities to hazards; describes the status of past mitigation actions; and provides a specific mitigation strategy. The annexes provide each area with an expedient resource for implementing mitigation projects and maximizing future grant opportunities.

Appendices include the following:

- **Appendix A:** Sample Resolution of Plan Adoption—Documentation that supports the plan approval signatures included in Chapter 2 of this plan.
- **Appendix B**: Meeting Documentation—Agendas, attendance sheets, minutes, and other documentation (as available and applicable) of planning meetings convened during the development of the plan.
- **Appendix C:** Public and Stakeholder Outreach Documentation—Documentation of the public and stakeholder outreach effort including webpages, informational materials, public and stakeholder meetings and presentations, surveys, and other methods used to receive and incorporate public and stakeholder comment and input to the plan update process.
- **Appendix D:** Participation Matrix
- **Appendix E:** Action Worksheet Template and Instructions
- **Appendix F:** Plan Maintenance Tools—Examples of plan review templates available to support annual plan review and example FEMA Guidance Worksheets (FEMA 386-4).

- **Appendix G:** Critical Facility Inventory
- **Appendix H:** Risk Assessment Supplementary Data—Details regarding past hazard events since those documented in the 2020 plan.
- **Appendix I:** NJOEM Local Hazard Mitigation Plan Standard Operating Procedures—Includes planning standards and guidelines for hazard mitigation planning.
- **Appendix J:** Linkage Procedures
- **Appendix K:** Dam Supplement—This appendix contains information on high hazard dams within Passaic County

2. PLANNING PROCESS

This chapter describes the planning process used to update the Passaic County HMP, including how it was prepared, who was involved in the process, and how the public was involved. The planning approach aimed to achieve the following results:

- The multi-jurisdictional plan will include all municipalities in the County. All 16 boroughs (B), cities (C), and townships (T) in the County (the Planning Partnership) participated in the 2025 plan update process:
  - Bloomingdale (B)
  - Clifton (C)
  - Haledon (B)
  - Hawthorne (B)
  - Little Falls (Twp)
  - North Haledon (B)
  - Passaic (C)
  - Paterson (C)
  - Pompton Lakes (B)
  - Prospect Park (B)
  - Ringwood (B)
  - Totowa (B)
  - Wanaque (B)
  - Wayne (Twp)
  - West Milford (T)
  - Woodland Park (B)
- The format of this plan is such that other entities can easily join at a later date as part of the regulatory 5-year plan update process.
- The plan considers all natural hazards that pose a risk to the area, as required by 44 CFR 201. Non-natural hazards that pose significant risk were considered as well.
- The plan was developed following FEMA regulations and prevailing FEMA and state guidance. This ensures that all the requirements are met and supports plan review. In addition, this plan will meet criteria for the National Flood Insurance Program (NFIP) Community Rating System (CRS) and the Flood Mitigation Assistance (FMA) programs.

Passaic County was awarded a multi-jurisdictional planning grant under the Hazard Mitigation Grant Program (DR-4488 COVID-19 Pandemic), which supported the development of this HMP. Grant administration was the responsibility of the Passaic County Department of Public Safety Office of Emergency Management.

2.1 GENERAL MITIGATION PLANNING APPROACH

This hazard mitigation plan was prepared in accordance with the following regulations and guidance:

- FEMA Mitigation Planning How-to Series (FEMA 386-1 through 4, 2002)
- FEMA Local Mitigation Plan Review Guide, October 1, 2011.
- FEMA Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards, January 2013.
- FEMA Integrating Hazard Mitigation into Local Planning, March 1, 2013.
- FEMA Plan Integration: Linking Local Planning Efforts, July 2015.
- FEMA Local Mitigation Planning Policy Guide, April 19, 2022.
- FEMA Local Mitigation Planning Handbook, May 2023.
- DMA 2000 (Public Law 106-390, October 30, 2000).
- 44 CFR 201 and 206.
- New Jersey Office of Emergency Management (NJOEM) Hazard Mitigation Planning Guidance, 2019
- State of New Jersey Hazard Mitigation Plan, 2024.

2.2 ORGANIZATION OF PLANNING PROCESS

2.2.1 Planning Process Participants

Project Management and Planning Consultant

Project management was the responsibility of the Passaic County Department of Public Safety Office of Emergency Management. A contract planning consultant (Tetra Tech) was tasked with the following:

- Assisting with the organization of a Steering Committee and the Planning Partnership
- Assisting with the development and implementation of a public and stakeholder outreach program
- Data collection
- Facilitation and attendance at meetings (Steering Committee, municipal, stakeholder, public and other)
- Review and update of the hazards of concern, and hazard profiling and risk assessment
- Assistance with the review and update of mitigation planning goals and objectives
- Assistance with the review of past mitigation strategy progress
- Assistance with the screening of mitigation actions and the identification of appropriate actions
- Assistance with the prioritization of mitigation actions
- Authoring of the draft and final plan documents

Planning Partnership

In November 2023, the County notified all municipalities in the County of the pending planning process and invited them to formally participate. Jurisdictions were asked to formally notify the County of their intent to participate via a letter of intent and to identify planning points of contact to facilitate their participation and represent the interests of their communities. All participating jurisdictions, including the County, are recognized as Planning Partners and belong to the Planning Partnership for this HMP. Planning Partnership representatives were charged with the following:

- Representing their jurisdiction throughout the planning process
- Ensuring participation of all departments and functions within their jurisdiction that have a stake in mitigation (e.g., planning, engineering, code enforcement, police and emergency services, public works)
- Assisting in gathering previously developed reports, data, and other information for inclusion in the HMP update
- Supporting and promoting the public involvement process
- Reporting on progress of mitigation actions identified in prior or existing HMPs, as applicable
- Identifying, developing, and prioritizing appropriate mitigation actions
- Reporting on progress of integration of prior or existing HMPs into other planning processes and municipal operations
- Supporting and developing a jurisdictional annex
- Reviewing, amending, and approving all sections of the plan update
- Adopting, implementing, and maintaining the plan update

Table 2-1 shows the members of the Planning Partnership as of the time of publication of this plan update. Appendix D (Participation Matrix) identifies how each individual who represented the jurisdictions during this planning effort contributed to the planning process.

Table 2-1. Passaic County Hazard Mitigation Planning Partnership Members

Jurisdiction	Primary Point of Contact	Title	Alternate Point of Contact	Title
Bloomingdale (B)	Michael Hudson	Coordinator, Office of Emergency Management	Ray Muller	Deputy Coordinator, Office of Emergency Management
Clifton (C)	Lt. Angelina Tirado	Coordinator, Office of Emergency Management	Capt. Jeffrey Bracken	Deputy Coordinator, Office of Emergency Management
Haledon (B)	Carlos Aymat	Coordinator, Office of Emergency Management	George Guzman	Deputy Coordinator, Office of Emergency Management
Hawthorne (B)	Matthew Fenkart	Deputy Coordinator, Office of Emergency Management	Lt. Ben Veenema	Coordinator, Office of Emergency Management
Little Falls (Twp)	James DiMaria	Construction Official	Sgt. John Moncato	Coordinator, Office of Emergency Management
North Haledeon (B)	Chief Todd Darby	Coordinator, Office of Emergency Management	Lt. Anthony Conforti	Deputy Coordinator, Office of Emergency Management
Passaic (C)	Walter Porto	Deputy Coordinator, Office of Emergency Management	Capt. Piyush Patel	Coordinator, Office of Emergency Management
Passaic County	George Rosenthal	Coordinator, Office of Emergency Management	Robert Scott	Deputy Coordinator, Office of Emergency Management
Paterson (C)	Troy Ayers	Coordinator, Office of Emergency Management	Capt. Herb Eggers	Office of Emergency Management
Pompton Lakes (B)	Albert Evangelista	Coordinator, Office of Emergency Management	Michael Carelli	Administrator
Prospect Park (B)	Ariosto Rodriguez	Coordinator, Office of Emergency Management	Hana Hataf	Acting Business Administrator
Ringwood (B)	Scott Heck	Deputy Coordinator, Office of Emergency Management	Patrick Murray, Jr.	Coordinator, Office of Emergency Management
Totowa (B)	Detective/Sergeant Gary Bierach	Coordinator, Office of Emergency Management; Totowa PD	Richard Schopperth	Deputy Coordinator, Office of Emergency Management
Wanaque (B)	Thomas Carroll	Coordinator, Office of Emergency Management	Daniel Mahler	Mayor
Wayne (Twp)	Capt. Dan Daly	Coordinator, Office of Emergency Management	Chris Tietjen	Business Administrator
West Milford (T)	Michael Moscatello	Coordinator, Office of Emergency Management	Michael Weber	Deputy Coordinator, Office of Emergency Management
Woodland Park (B)	Captain Joseph Domicolo	Coordinator, Office of Emergency Management	Steven DiPaola	Deputy Coordinator, Office of Emergency Management

The various jurisdictions in Passaic County have differing levels of capabilities and resources available to apply to the plan update process, as well as differing levels of vulnerability to and impacts from the natural hazards being considered in this plan. It was Passaic County's intent to encourage participation by all jurisdictions, and to accommodate their specific needs and limitations while still meeting the intent and purpose of plan update participation. Such accommodations have included establishing a Steering Committee, engaging a contract consultant to assume certain elements of the plan update process on behalf of the jurisdictions, and providing alternative mechanisms for planning participation.

Ultimately, jurisdictional participation is evidenced by a completed annex of the HMP, wherein jurisdictions individually identify their planning points of contact, evaluate their risk from the hazards of concern, identify their capabilities to effect mitigation in their community, identify and prioritize a suite of actions to mitigate their hazard risk, and adopt the updated plan via resolution. Annexes are included in Volume II of this HMP.

After completion of the plan, implementation and ongoing maintenance will become a function of the Planning Partnership as described in Chapter 17 (Plan Maintenance). The Planning Partnership will be responsible for reviewing the draft plan and soliciting public comment as part of an annual review and as part of the five-year mitigation plan update.

HMP Coordination with the National Flood Insurance Program

All municipalities in the County actively participate in the National Flood Insurance Program and have a designated NFIP floodplain administrator. All floodplain administrators were informed of the planning process, reviewed the plan documents, and provided direct input to the plan update. Local floodplain administrators are identified as part of each jurisdiction's hazard mitigation planning team, as presented in the jurisdictional annexes in Volume II, as well as in Appendix D (Participation Matrix).

Steering Committee

Passaic County developed a Steering Committee to provide guidance and direction to the HMP update effort, and to ensure that the resulting document will be accepted by local government leaders as well as all who live and work within the planning area. Steering Committee members were charged with the following:

- Providing guidance and oversight of the planning process on behalf of the general planning partnership
- Attending and participating in Steering Committee meetings
- Assisting with the development and completion of certain planning elements, including:
  - Reviewing and updating the hazards of concern
  - Developing a public and stakeholder outreach program
  - Ensuring that the data and information used in the plan update process is the best available
  - Reviewing and updating the hazard mitigation goals
  - Identifying and screening appropriate mitigation strategies and activities
- Reviewing and commenting on plan documents prior to submission to NJOEM and FEMA.

The Steering Committee provided guidance, leadership, and oversight of the planning process and acted as the point of contact for participating interest groups in the planning area. Table 2-2 lists the members of the Steering Committee.

Table 2-2. Passaic County Hazard Mitigation Steering Committee Members

Affiliation	Name	Title
American Red Cross	Sara Huisking	Executive Director
Catholic Family and Community Services	Ariel Alonso	Director of Community and Emergency Support
Highlands Council	James Humphries	Director of Planning, Science & GIS
NJOEM	Trooper Joseph Palach	NJOEM Liaison
NJOEM	Cansu Yerdelenli*	Disaster Recovery Analyst
North Jersey Transportation Planning Authority	David Behrend	Executive Director
Passaic County	Andras Holzman	Director of Planning
Passaic County	Dr. Arti Kakka	Director of Human Services
Passaic County	George Rosenthal	Office of Emergency Management Coordinator
Passaic County	Robert Scott	Co-Deputy Office of Emergency Management Coordinator
Passaic County	Maria Dombayci	Co-Deputy Office of Emergency Management Coordinator
Passaic County	Jonathan Pera	County Engineer
Passaic County	Kelly Ruffel	Director of Cultural and Historic Affairs
Passaic County	Kenneth Simpson	Supervisor of Roads
Passaic County Department of Health Services	Yonette Fredericks	Division Director, Community Outreach Family Services
Passaic County Superintendent of Schools	Alicia Anderson	Executive Assistant
Paterson Public Schools	Dalton Price	Director
Pompton Lakes (B)	Albert Evangelista	Office of Emergency Management Coordinator
Rutgers University	Ashlyn Spector	Bloustein Unit Manager
United Way of Passaic County	Mary Celis	President/CEO

**Until May 2024.*

2.2.2 Planning Activities

Members of the Planning Partnership (individually and as a whole), as well as key stakeholders, met and communicated as needed to share information. This included workshops to identify hazards, assess risks, update inventories of critical facilities, and assist in updating mitigation goals and strategies. All members of the Planning Partnership had the opportunity to review the draft plan, supported interaction with other stakeholders, and assisted with public involvement efforts. These activities provided continuity through the process to ensure that natural hazard vulnerability information and appropriate mitigation strategies were incorporated.

Table 2-3 summarizes meetings and other planning activities conducted during the development of the plan. It also identifies which 44 CFR 201 requirements each activity satisfies. Documentation of meetings (agendas, sign-in sheets, minutes, etc.) may be found in Appendix C (Public and Stakeholder Outreach).

Table 2-3 identifies only formal meetings and milestone events in the plan update process. In addition to these meetings, there was a great deal of communication between Planning Partnership members and the consultant through individual local meetings, phone, and email.

Table 2-3. Summary of Mitigation Planning Activities / Efforts

Date	44 CFR 201 Requirement	Description of Activity	Participants
June 24 and June 29, 2022	2	Meetings with NJOEM to discuss planning process timeline, State and FEMA requirements	Passaic County Office of Emergency Management, NJOEM, Tetra Tech
October 23, 2023	2	Project Startup Meeting: Discuss proposed planning process and scope of work including documenting participation, schedule, and public and stakeholder outreach and involvement.	Passaic County Office of Emergency Management, Tetra Tech
November 2023	2	All municipalities invited to participate in the planning process.	Passaic County Office of Emergency Management
January 19, 2023	1, 2	Press release developed and sent to publicize planning process.	Passaic County Office of Emergency Management, Tetra Tech
April 3, 2023	2, 3c	GIS data collection meeting	Passaic County Office of Emergency Management, Passaic County GIS Operations, Tetra Tech
Bi-Weekly	-	Weekly project status meeting to discuss action items in support of the expedited planning process	Passaic County Office of Emergency Management, Tetra Tech
December 2023	1c, 2	Interested jurisdictions submit letters of intent to participate in this planning process, acknowledging municipal participation requirements and identifying planning points of contact.	See Appendix D
February 20, 2024	1b, 2, 3a, 3b, 3c, 4a, 5c	Steering Committee Kickoff Meeting: Review project schedule; review municipal participation, discuss Planning Partnership kickoff meeting and local data collection; review and discuss sources and availability of County and regional data; discuss public and stakeholder outreach efforts.	See Appendix D
February 20, 2024	1b, 2, 3a, 3b, 3c, 4a	Planning Partnership Kickoff Meeting: Complete overview of planning process, plan participant expectations, review of hazards and hazards of concern identification, discussion of data needs and data collection process explaining all provided worksheets, discussion of public and stakeholder outreach efforts	See Appendix D
May 13, 2024	2	Public project website developed: https://www.passaiccountynjhmp.com/	Passaic County Office of Emergency Management, Tetra Tech
June 6, 2024	1b	Letters to neighboring municipalities, counties, and stakeholders were developed to publicize the planning process, identify opportunities for involvement and engagement, and provide links to the HMP website and surveys.	Passaic County Office of Emergency Management, Tetra Tech
June 6, 2024	2	Online public survey developed and deployed	Passaic County Office of Emergency Management, Tetra Tech

Date	44 CFR 201 Requirement	Description of Activity	Participants
June 6, 2024	2	Online stakeholder surveys developed and deployed	Passaic County Office of Emergency Management, Tetra Tech
June 6, 2024	2	Online neighboring communities survey developed and deployed	Passaic County Office of Emergency Management, Tetra Tech
September 5, 2024	2	Monthly meeting with Passaic County Office of Emergency Management Coordinators to provide worksheet assistance and notify participants of upcoming meetings and engagement opportunities.	Passaic County Office of Emergency Management, Tetra Tech, Planning Partnership
November 14, 2024	3	Risk Assessment and Mitigation Action Workshop: The meeting covered the current project status, provided an overview of risk assessments, and discussed strategies for mitigating identified risks.	See Appendix D
March 20, 2025	1b, 2, 3, 4, 5	Steering Committee Meeting - Plan Maintenance, Draft Plan Review	Steering Committee Contract Planner See Appendix D
April 1, 2025	2	Draft Plan posted to public project website	Public and Stakeholders
March 20, 2025	1b	FEMA Flood Risk Insurance Open House. Information on the HMP planning process was made available to attendees. Attendees were encouraged to review the Draft Plan.	Public and Stakeholders
May 19, 2025	1b, 2	Public and stakeholder comments to Draft Plan received and incorporated into Final Plan.	Public and Stakeholders
June 27, 2025	All requirements	Final plan submitted to NJOEM and FEMA Region 2	NJOEM, FEMA Region 2
TBD (Upon plan approval by FEMA)	1a	Plan adoption by resolution by the governing bodies of all participating municipalities	All plan participants

Note: TBD = to be determined.

Numbers in column 2 identify specific requirements of 44 CFR 201.6, as follows:

1a – Prerequisite – Adoption by the Local Governing Body (201.6.a.1)
1b – Public Participation (201.6.b)
2 – Planning Process – Documentation of the Planning Process (201.6.c.1)
3a – Risk Assessment – Identifying Hazards (201.6.c.2.i)
3b – Risk Assessment – Profiling Hazard Events (201.6.c.2.i)
3c – Risk Assessment – Assessing Vulnerability: Identifying Assets (201.6.c.2.ii.A)
3d – Risk Assessment – Assessing Vulnerability: Estimating Potential Losses (201.6.c.2.ii.B)
3e – Risk Assessment – Assessing Vulnerability: Analyzing Development Trends (201.6.c.2.ii.C)
4a – Mitigation Strategy – Local Hazard Mitigation Goals (201.6.c.3.i)
4b – Mitigation Strategy – Identification and Analysis of Mitigation Measures (201.6.c.3.ii)
4c – Mitigation Strategy – Implementation of Mitigation Measures (201.6.c.3.iii)
5a – Plan Maintenance Procedures – Monitoring, Evaluating, and Updating the Plan (201.6.c.4.i)
5b – Plan Maintenance Procedures – Implementation through Existing Programs (201.6.c.4.ii)
5c – Plan Maintenance Procedures – Continued Public Involvement (201.6.c.4.iii)

2.3 STAKEHOLDER OUTREACH AND INVOLVEMENT

The Passaic County HMP update was written using the best available information obtained from a wide variety of sources. Throughout the HMP update process, a concerted effort was made to gather information from municipal and regional agencies and staff as well as stakeholders, federal and state agencies, and the residents of the County. The Steering Committee solicited information from local agencies and individuals with specific knowledge of certain natural hazards and past historical events. In addition, the Steering Committee and Planning Partnership took into consideration planning and zoning codes, ordinances, and recent land use planning decisions.

This section details the outreach to, and involvement of, the many agencies, departments, organizations, non-profits, districts, authorities, and other entities that have a stake in managing hazard risk and mitigation, commonly referred to as stakeholders.

Diligent efforts were made to ensure broad regional, county, and local representation in this planning process. A comprehensive list of stakeholders was developed with the support of the Steering Committee and Planning Partnership. Stakeholder outreach was performed early and throughout the planning process, including mass media notification efforts. Identified stakeholders were invited to attend the Planning Partnership risk assessment meeting, and key stakeholders were requested to participate on the Steering Committee and/or Planning Partnership. Information and input provided by these stakeholders has been included throughout this plan.

The following sections list the stakeholders who were invited to participate in the development of this plan and describe how they contributed to the plan. Beyond those described here, many stakeholders were aware of and/or contributed to this plan through formal and informal outreach efforts by the Planning Partners involved in the plan update.

2.3.1 Federal and State Agencies

The federal and state agencies listed in Table 2-4 were contacted during the planning process. The table describes how each participated.

2.3.2 County and Regional Agencies

The county and regional agencies listed in Table 2-5 were invited to participate during the planning process. The table describes how each participated.

2.3.3 Stakeholders by Community Lifeline Category

FEMA defines community lifelines as fundamental services in a community that, when stabilized, enable all other aspects of society. All participating jurisdictions invited their internal agencies associated with community lifeline categories to complete a stakeholder survey. The sections below describe outreach to and participation by stakeholders in the planning process associated with FEMA's eight designated community lifeline categories. More detailed information about community lifelines in the planning area is provided in Section 3.9.

Table 2-4. Participation of Federal and State Agencies

Agency	Participation
FEMA Region 2	Provided updated planning guidance; provided summary and detailed NFIP data for planning area; presented preliminary regulatory flood products to municipalities and the public; attended meetings; participated in a Mitigation Strategy Workshop; conducted plan review.
New Jersey State Police Office of Emergency Management	Administered planning grant and facilitated FEMA review; provided updated planning guidance; attended meetings; participated in the Mitigation Strategy Workshop, provided review of Draft and Final Plan.
• National Centers for Environmental Information (NCEI) • National Hurricane Center (NHC) • National Oceanic and Atmospheric Administration (NOAA) • National Weather Service (NWS) • Storm Prediction Center (SPC) • U.S. Army Corps of Engineers (USACE) • U.S. Census Bureau • U.S. Geological Survey (USGS)	Information regarding hazard identification and the risk assessment for this HMP update was requested and received or incorporated by reference.
New Jersey Department of Environmental Protection Bureau of Dam Safety	The New Jersey Department of Environmental Protection Bureau of Dam Safety was asked to provide information on the location of dams, identified issues with dams, and suggested mitigation actions to include in the mitigation strategy to address dam failure.

Table 2-5. County and Regional Agencies

Agency	Participation
• Passaic County Office of Emergency Management • Passaic County Department of Engineering • Passaic County Department Human Services • Passaic County Department of Planning and Economic Development • Passaic County Superintendent of Schools • New Jersey Office of Emergency Management • New Jersey Highlands Council • Borough of Pompton Lakes Office of Emergency Management • American Red Cross • Rutgers University	Served on steering committee, attended meetings, completed hazard of concern exercise and goals and objectives exercise, and reviewed draft plan.
• Passaic County Roads Division • Passaic County Parks and Recreation • Passaic County Public Works	Provided input and reviewed draft plan.

Safety and Security

The following agencies were invited to complete a stakeholder survey and review the draft plan:

- Passaic County Animal Response Team
- Passaic County Sheriff's Department

- Passaic County Intelligence/Homeland Security Unit
- Passaic Public Schools Safety and Security

In order to address high hazard potential dams, outreach was conducted to the New Jersey Department of Environmental Protection Bureau of Dam Safety. The following information was requested:

- Information regarding the risk to dam failure as a result of deficiencies or exposure to hazards such as flooding, geologic impacts, and severe storms
- Concerns with dam safety due to changing climate conditions
- Concerns with emergency action plan deficiencies including warning time, evacuation needs, etc.
- Completed or in progress repairs/improvements to dams
- Potential new mitigation actions that should be considered for inclusion in the HMP mitigation strategy

Food, Hydration, Shelter

Jurisdictions were asked to invite their emergency management related agencies to provide information on shelters and sheltering procedures. The following stakeholders that provide food, hydration, shelter, and agricultural activities in the County were invited to complete a stakeholder survey and review the draft plan:

- Catholic Family and Community Services

Health and Medical

The following hospitals and health-care facilities were invited to complete a stakeholder survey and review the draft plan:

- Passaic County Preakness Healthcare Center
- St. Joseph's University Medical Center

Jurisdictions were asked to invite their ambulance and emergency medical service providers to complete a stakeholder survey. In addition, the following ambulance and emergency medical service providers in the County were invited to complete a stakeholder survey and review the draft plan:

- Passaic County Emergency Medical Services

Energy

In addition to municipal utilities, the following electrical, natural gas, and fuel companies were invited to complete a stakeholder survey and review the draft plan:

- New Jersey Board of Public Utilities
- PSE&G
- JCP&L

Communications

Each jurisdiction was asked to provide information on emergency communication and warning systems. In addition, the following communications companies were invited to complete a stakeholder survey and review the draft plan:

- Verizon

- T-Mobile
- Optimum
- HughesNet
- Viasat

Transportation

The following transportation companies and organizations were invited to complete a stakeholder survey and review the draft plan:

- NJ Transit
- New Jersey Department of Transportation
- Passaic County Para Transit
- North Jersey Transportation Planning Authority
- Passaic County Roads Division

Hazardous Materials

The following agency dealing with hazardous material facilities was invited to complete a stakeholder survey and review the draft plan:

- Passaic County Department of Health

Water Systems

In addition to municipal utilities, the following water utility companies were invited to complete a stakeholder survey and review the draft plan:

- North Jersey District Waters Commission
- New Jersey American Water
- Passaic Valley Water Commission
- Passaic Valley Sewerage Commission
- Passaic Valley Flood Advisory Committee

2.3.4 Additional Stakeholder Groups

Groups Supporting Socially Vulnerable Populations and Underserved Communities

The following groups and agencies that provide support to and work with socially vulnerable populations and underserved communities were invited to complete a stakeholder survey and review the draft plan:

- Catholic Family and Community Services
- United Way of Passaic County

School Districts and Other Academic Institutions

Jurisdictions were asked to invite representatives of their local schools to complete a stakeholder survey. Additionally, the following school districts, colleges, and academic organizations were invited to complete a stakeholder survey and review the draft plan:

- K-12 Schools
  - Passaic County Schools
  - Classical Charter School of Clifton
  - College Achieve Paterson Charter School
  - Community Charter School of Paterson
  - John P. Holland Charter School
  - Passaic Arts Charter School for Science and Technology
  - Paterson Arts and Science Charter School
  - Philip's Academy Charter School
  - Bloomingdale School District
  - Brilla New Jersey Charter School
  - Clifton Public School District
  - Haledon Public School District
  - Hawthorne Public School District
  - Lakeland Regional High School District
  - Little Falls Township Public School District
  - North Haledon School District
  - Northern Region Educational Services Commission
  - Passaic City School District
  - Passaic County Manchester Regional High School District
  - Passaic County Technical-Vocational School District
  - Passaic Valley Regional High School District
  - Paterson Charter School for Science and Technology
  - Paterson Public School District
  - Pompton Lakes School District
  - Prospect Park Public School District
  - Ringwood School District
  - Totowa Public School District
  - Wanaque School District
  - Wayne Township Public School District
  - West Milford Township Public School District
  - Woodland Park School District
- Higher Education
  - Passaic County Technical Vocational School
  - Rutgers University
  - Passaic Community College
  - William Paterson University

2.3.5 Neighboring Jurisdictions

The County kept surrounding jurisdictions apprised of the project, invited them to complete a neighboring community survey, and requested their review of the draft plan. The following adjoining county and jurisdictional representatives were contacted in September 2022 to inform them about the availability of the project website, draft plan documents, and surveys and to invite them to provide input to the planning process:

New Jersey

- Morris County
  - Township of Parsippany
  - Township of Pequannock
  - Township of Jefferson
  - Township of Rockaway
  - Borough of Kinnelon
  - Township of Butler
  - Borough of Riverdale
  - Township of Lincoln Park
- Warren County
- Sussex County
  - Borough of Stanhope
  - Borough of Hopatcong
  - Town of Sparta
  - Borough of Ogdensburg
  - Hardyston Township
  - Township of Vernon
- Essex County
  - Township of Fairfield
  - Borough of North Caldwell
  - Township of Cedar Grove
  - Township of Montclair
  - Township of Bloomfield
  - Township of Nutley
- Bergen County
  - Borough of Franklin Lakes
  - Borough of Ramsey
  - Borough of Midland Park
  - City of East Rutherford
  - City of Hackensack
  - Town of Allendale

New York

- Orange County
  - City of Port Jervis
  - Town of Greenville
  - Town of Warwick
  - Town of Tuxedo
  - Town of Minisink
- Rockland County
  - Town of Orangetown
  - Town of Ramapo
  - Town of Clarkson (Located in Monroe County)

2.3.6 Stakeholder and Neighboring Community Survey Summaries

This section summarizes the results and feedback received by those who completed the stakeholder and neighboring community surveys. Feedback was reviewed by the Steering Committee and integrated where appropriate in the plan.

Stakeholder Survey

The stakeholder survey was designed to identify general needs for hazard mitigation and resiliency within Passaic County from the perspective of stakeholders, as well as to identify specific projects that may be included in the mitigation plan. It was distributed to identified stakeholders, including county and municipal departments and agencies. As of March 2025, one stakeholder completed the survey—a respondent from a K-12 school district. Key responses were as follows:

- The represented agency does manage building facilities.

- The represented agency works with socially vulnerable populations by assisting coordination efforts for students and families who might fall into this category.
- The represented agency has special interest and/or expertise in disease/pandemic outbreak and flood.
- The represented agency has buildings, facilities, or structures that have been impacted by a natural hazard. An elementary school flooded in 2011 with Hurricane Irene, and buildings have lost power due to storms.
- Of known local hazards, the represented agency is most vulnerable to flooding.
- The represented agency does own or lease facilities, but they are not critical facilities or community lifelines.
- The respondent was not aware of any plans that cover the represented agency.
- The respondent was not aware of the number and location of vulnerable populations within the community/operating area.
- One of the represented agency's facilities is used as an alternate shelter for the community during a disaster.
- The represented agency is not currently involved in conducting any studies or developing any programs that could support Passaic County's hazard mitigation program.

Neighboring Community Survey

The neighboring community survey was sent to the county and municipal governments that border Passaic County due to their proximity to the county and because the effects of hazard events that impact Passaic County would be similar to that of their neighbors. As of Friday, March 2025, three counties submitted the survey (Mahwah Township, Pequannock Township, and Ramsey Borough). Key responses were as follows:

- Responses related to emergency operations and continuity of operations planning:
  - Respondents providing information about shared service or mutual aid agreements between their county and Passaic Count—None
  - Respondents indicating that Passaic County is involved in their county's emergency operations planning—One
  - Respondents noting Passaic County's involvement in their ##—One
  - Respondents stating that Passaic County is not involved in their continuity of operations planning—Two
  - One respondent mentioned that their county maintains constant communication with Morris County Office of Emergency Management and Pompton Lakes Office of Emergency Management via cell phone, email, or portable radio during emergency operations and disaster response
- Responses related to risk and vulnerability:
  - Respondents indicating that their county does not share risk and vulnerability assessments with Passaic County—Two (one was unsure)
  - One respondent identified the following situations or hazards as concerns for both the community and Passaic County: the Wanaque Reservoir Dam, any impact on the Ramapo River, and any failure or excessive overflow of the Pompton Lakes Dam.
- Responses related to evacuation and sheltering:
  - Respondents identifying spaces suitable for temporary housing, including locations for residents displaced by a disaster—None

- Respondents indicating that they do not consult with one another or the County before making sheltering decisions—Three
- Respondents indicating that they do not collaborate with Passaic County or its municipalities on establishing shelters—Three
- Respondents indicating that they would collaborate with Passaic County and its municipalities when establishing evacuation routes and alternative evacuation routes—One
- Respondents indicating that they would not collaborate with Passaic County and its municipalities when establishing evacuation routes and alternative evacuation routes—One
- Respondents stating that evacuation routes are maintained to the same level of protection across jurisdictional lines—One (another was unsure)
- Respondents indicating that would not consult with Passaic County before making evacuation decisions if the need arose—One
- One respondent mentioned that there is communication between police departments and their municipality and Wayne Township to coordinate closure efforts for State Highway Route 23.

- Responses related to information sharing:
  - Respondents indicating that they have access to Passaic County's emergency operations center contact information—One (another was unsure)
  - Respondents indicating that information regarding mitigation shared during the planning and implementation phases of projects is not shared—One (another was unsure, and one indicated that it was not applicable)
  - Respondents providing details on how information is shared between their jurisdiction and Passaic County concerning mitigation projects—None
- Responses related to projects, grants, education, and outreach:
  - Respondents indicating that there is a watershed project or planning initiative requiring cross-collaboration between jurisdictional boundaries—One
  - Respondents noting that their jurisdiction and Passaic County have not collaborated on grant applications—One (another was unsure)
  - Respondents noting that they are not aware of any organizations conducting education and outreach regarding hazards in their community and Passaic County—Two
  - Respondents noting that they were unaware of any organizations supporting socially vulnerable or underserved populations—Two
  - One respondent suggested that increased communication between counties and coordination at the Office of Emergency Management and/or state level are needed.
  - Once respondent recommended contacting Bergen County Office of Emergency Management regarding opportunities to optimize cooperation with Passaic County on emergency management operations and hazard mitigation projects.

2.4 PUBLIC OUTREACH

2.4.1 Outreach Activities

The Steering Committee and Planning Partnership made the following efforts toward public participation in the development and review of the HMP update:

- The public was informed of the hazard mitigation planning effort commencement at the kickoff meeting and through press releases, news articles, and public service announcements released throughout the planning process. Copies of these announcements may be found in Appendix C.
- Media releases were issued to local news organizations.
- A public website (https://www.passaiccountynj.org/departments/office-of-emergency-management/hazard-mitigation-plan contains a project overview, County and local contact information, access to a public survey (as described below) and the stakeholder surveys, and sections of the HMP for public review and comment.
- All participating jurisdictions were encouraged to distribute press releases on the project, including links to the project webpage and public and stakeholder surveys.
- The draft plan was posted to the public website as of March 31, 2025, for public review and comment. All public comments were directed to the Passaic County Office of Emergency Management for collection and review by the Steering Committee. All public comments received were forwarded to the appropriate jurisdiction and/or agency and incorporated into the final plan as appropriate.
- Once submitted to NJOEM/FEMA, the final plan will be available for public review and comment in the same manner and format as the draft plan, as well as in hard-copy format at the Passaic County Office of Emergency Management, and Passaic County Department of Planning.

Examples of virtual outreach via websites and social media completed by the Planning Partners are provided in Figure 2-1 and Figure 2-2.

2.4.2 Public Survey Summary

An on-line survey was developed to gauge household preparedness for hazards that may impact Passaic County and to assess the level of knowledge of tools to assist in reducing risk from those hazards. The survey asks quantifiable questions about respondents' perception of risk, knowledge of mitigation, and support of community programs. It also asks demographic questions to help analyze trends.

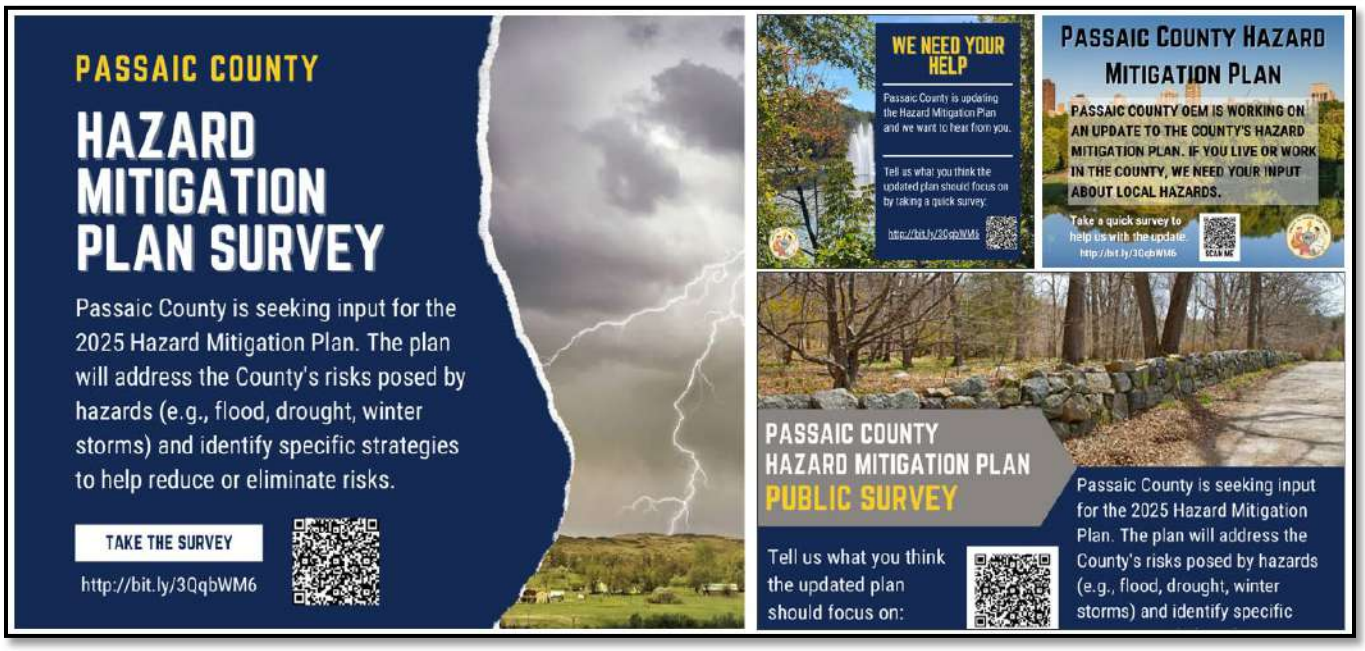
The survey was posted on the County website on February 20, 2023 and was available through March 12, 2025 for public input. All participating jurisdictions were requested to advertise the availability of the survey via local homepage links, and other available public announcement methods (e.g., Facebook, X, email blasts, etc.). As of March 2025, four survey responses were received. A summary of survey results follows. Jurisdiction-specific responses can be found in Volume II. Refer to Appendix D (Public and Stakeholder Outreach) for the full list of survey questions and responses.

Respondents who provided information on where they live reside in the City of Passaic, the City of Paterson, and the Township of Wayne. Two-thirds of these respondents have lived in their jurisdiction for 10 to 19 years, and one-third lived there for 20 years or more. All of these respondents own the single-family detached residences where they live. Two-thirds are between 51 and 60 years old, and one-third are between 41 and 50 years old.

Figure 2-1. Passaic County HMP Webpage and Local On-Line Outreach



Figure 2-2. Passaic County HMP Social Media Outreach



The following are the top five methods through which respondents reported receiving information about disasters:

- Police, Fire, EMS, 9-1-1 (100 percent)
- County Website (75 percent)
- Newspaper (75 percent)
- TV News (75 percent)
- Radio News (75 percent)

Survey respondents identified the most frequently occurring natural hazard events within Passaic County in the past 10 years, as shown in Figure 2-3

The top five listed hazards in the past 10 years are as follows:

- Flooding
  - Street/Land (100 percent)
  - Stormwater (75 percent)
- Severe Storms - thunderstorm, hail (100 percent)
- Winter Storm (100 percent)
- Disease/Pandemic Outbreak (75 percent)
- Extreme Temperature – heat and cold (75 percent)

Respondents were asked if their homes had been damaged by a hazard event in the past. One respondent confirmed damage due to frozen pipes; the other three reported no damage. The damage was not reported to local authorities such as the police, fire department, or emergency management agency.

Half of the respondents indicated that their property is located in a designated floodplain. One respondent (25 percent) has flood insurance. When asked if they had flood insurance for properties located outside the floodplain, two respondents (66.67 percent) answered no, one (33.33 percent) responded not applicable, and one skipped the question.

Regarding strategies to reduce hazard risks in Passaic County, three respondents strongly agreed with implementing measures to safeguard the local economy following a disaster. Three respondents agreed with a regulatory approach to risk reduction and improving disaster preparedness in local schools. Two-thirds of respondents have received training in first aid or CPR and have installed smoke detectors in their homes.

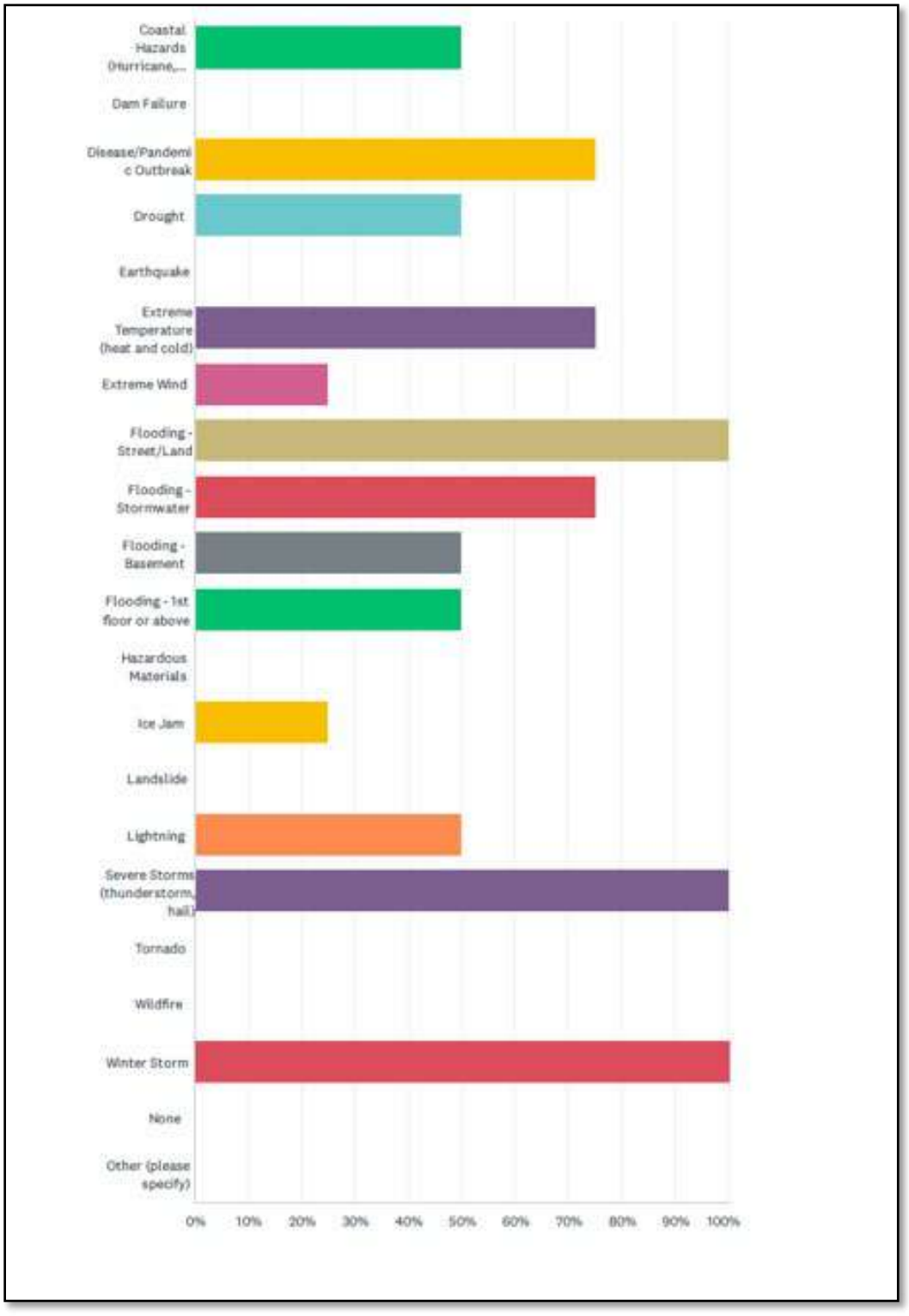
The top three priorities identified as very important by respondents were:

- Protecting private property
- Protecting and reducing damage to utilities
- Disclosing natural hazard risks during real estate transactions

The respondents identified specific vulnerabilities within their city/town/village:

- Wayne and Paterson flood too often during any event
- Paterson and Wayne get direct flooding from the Passaic River
- Local flooding through Wayne

Figure 2-3. Most Frequently Experienced Natural Hazard Events in Passaic County



2.5 INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The Passaic County HMP uses the best available information to support hazard profiling, risk assessment, review and evaluation of mitigation capabilities, and the development and prioritization of County and local mitigation strategies. Plans, reports, and other technical information were identified and accessed online through independent research by the planning consultant or provided directly by the County, participating jurisdictions, and stakeholders involved in the planning effort. The asset inventory data used for the risk assessment is presented in the County Profile (Chapter 3). Details of the source of this data, along with technical information on how the data was used to develop the risk assessment, are presented in Chapter 4, as well as throughout the hazard profiles in this HMP. Detailed sources of technical data and information used are listed in the References section.

The County and participating jurisdictions provided relevant jurisdiction-specific planning and regulatory documents, which were reviewed to identify:

- Existing jurisdictional capabilities
- Needs and opportunities to develop or enhance capabilities, which may be identified in the County or local mitigation strategies
- Mitigation-related goals or objectives, considered in the review and update of the overall goals and objectives (Chapter 16)
- Proposed, in-progress, or potential mitigation actions to be incorporated into the updated local mitigation strategies

The following regulations, codes, ordinances, and plans were reviewed to develop mitigation planning goals and objectives and mitigation strategies that are consistent across local and regional planning and regulatory mechanisms:

- Comprehensive/master plans
- Building codes
- Zoning and subdivision ordinances
- Flood insurance studies
- Flood insurance rate maps
- NFIP flood damage prevention ordinances
- Site plan requirements
- Stormwater management plans
- Debris management plans
- Emergency management and response plans
- Land use and open space plans
- Capital plans
- Sustainable Jersey Community
- Community Rating System
- 2024 New Jersey Hazard Mitigation Plan

The County and participating jurisdictions were tasked with updating the assessment of their planning and regulatory capabilities (see capability assessment section of each jurisdictional annex in Volume II). They reviewed relevant plans contributing to the capability of the County and each jurisdiction to integrate effective mitigation efforts into their daily activities. This review is reflected in the capability assessment table in each of the municipal annexes. These tables list plan types, names, and dates, as well as a summary of how each plan supports mitigation and resilience.

2.6 INTEGRATION WITH EXISTING PLANNING MECHANISMS AND PROGRAMS

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. Many existing plans and programs support hazard mitigation in the County. It is critical that this HMP integrate, coordinate with, and complement, those existing plans and programs.

The capability assessment presented in Chapter 15 provides a summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county and local) that support hazard mitigation in the County. In the jurisdictional annexes in Volume II, each participating jurisdiction identifies how it has already integrated hazard mitigation into its planning, regulatory and administrative framework ("integration capabilities") and how it intends to promote this integration ("integration actions").

2.7 PLAN ADOPTION

Adoption by the local governing bodies of each participating jurisdiction demonstrates the commitment of the Planning Partners to fulfill the mitigation goals and strategies outlined in this HMP. Adoption via a municipal resolution legitimizes the HMP and authorizes responsible agencies to execute their responsibilities.

In addition to being required by DMA 2000, adoption of the HMP is necessary because:

- It lends authority to the plan to serve as a guiding document for all local and state government officials.
- It gives legal status to the plan in the event it is challenged in court.
- It certifies to program and grant administrators that the plan's recommendations have been properly considered and approved by the jurisdictions' governing authority and citizens.
- It helps to ensure the continuity of mitigation programs and policies over time because elected officials, staff, and other community decision-makers can refer to the official document when making decisions about the community's future.

Source: FEMA. 2003. How to Series: Bringing the Plan to Life (FEMA 386-4).

All participating jurisdictions will proceed with formal adoption proceedings. Each jurisdiction must submit a copy of its formal adoption resolution or other legal instrument to the Passaic County HMP Coordinator in the Passaic County Office of Emergency Management. Passaic County will forward the executed resolutions to NJOEM, after which they will be forwarded to FEMA for the record. FEMA allows two options for submitting adoption resolutions:

- **Submittal of adoption resolutions with plan**—All participating jurisdictions provide documentation of plan adoption when the plan is initially submitted to the state for review. After receiving the draft plan from the state, FEMA conducts its review and approves the plan if it meets all requirements.
- **Approvable pending adoption**—A draft HMP is submitted to the state and FEMA for approval prior to adoption by the jurisdictions. When FEMA determines that the plan as a whole and each participating

jurisdiction have met all the requirements except adoption, FEMA will inform the state that the plan is "approvable pending adoption" (APA). After that, once FEMA receives documentation of adoption resolutions from at least one jurisdiction, the status is changed from APA to approved for the entire plan and for that jurisdiction. Other jurisdictions that participated in the planning process then receive approval once they pass their own adoption resolutions. A jurisdiction with a plan in APA status does not meet the requirement for an approved mitigation plan to apply for and receive funding assistance.

FEMA will transmit acknowledgement of verification of formal plan adoption and the official approval of the plan to the Passaic County HMP Coordinator. The plan approval date begins the five-year approval period and sets the expiration date for the plan. All participating jurisdictions will have the same expiration date regardless of their own jurisdiction's adoption date. The date indicated on FEMA's approval letter is the official approval date.

The resolutions issued by each jurisdiction to support adoption of this HMP are included in Appendix A.

2.8 CONTINUED PUBLIC INVOLVEMENT

Passaic County and participating jurisdictions are committed to the continued involvement of the public in the hazard mitigation process. This HMP update will be made available for review on the HMP public website. Each jurisdiction's elected official shall be responsible for receiving, tracking, and filing public comments regarding this HMP update. After completion of this HMP update, implementation and ongoing maintenance will continue to be a function of the Planning Partnership.

The Planning Partnership will review the plan and accept public comment as part of an annual review and as part of five-year mitigation plan updates. A notice regarding annual updates of the plan and the location of plan copies will be publicized annually after the annual plan evaluation meeting and posted on the public website at https://www.passaiccountynj.org/departments/office-of-emergency-management/hazard-mitigation-plan. Through the website, the public will be provided an opportunity to comment on the HMP update as a part of the annual mitigation planning evaluation process and the next five-year mitigation plan update.

The HMP Coordinator is responsible for coordinating the plan evaluation portion of the meeting, soliciting feedback, collecting and reviewing the comments, and ensuring their incorporation in the 5-year plan update as appropriate; however, members of the Planning Partnership will assist the HMP Coordinator. George Rosenthal has been identified as the ongoing County HMP Coordinator, and is responsible for receiving, tracking, and filing public comments regarding this HMP update. Contact information is as follows:

Mailing Address:	Passaic County Office of Emergency Management 300 Oldham Road, Wayne, NJ 07470
Contact Name:	George Rosenthal
Email Address:	georger@passaiccountynj.org

Additional meetings may also be held as deemed necessary to provide the public an opportunity to express concerns, opinions, and ideas about the HMP. Further details regarding continued public involvement are provided in Chapter 17.

3. COUNTY PROFILE

The planning area for this HMP is the entirety of Passaic County. This chapter presents general information about the land, people, and assets of Passaic County. This information provides a baseline for understanding the economic, structural, and population assets at risk from the hazards addressed in this HMP.

3.1 LOCATION

Passaic County covers 197 square miles in northeastern New Jersey, as shown in Figure 3-1. The County is bordered to the north by New York State, to the south by Essex and Morris Counties, to the east by Bergen County, and to the west by Sussex County. The County's shape divides it into northern and southern sections. The northern section is older suburban and rural to semi-rural, entirely in the Highlands Preservation and Planning Areas, with scenic vistas and environmentally sensitive forested areas surrounding reservoirs. Southern Passaic County is suburban and urban and includes the Cities of Passaic, Clifton, and Paterson. The County is in the U.S. Census-defined New York-New Jersey Metropolitan Statistical Area.

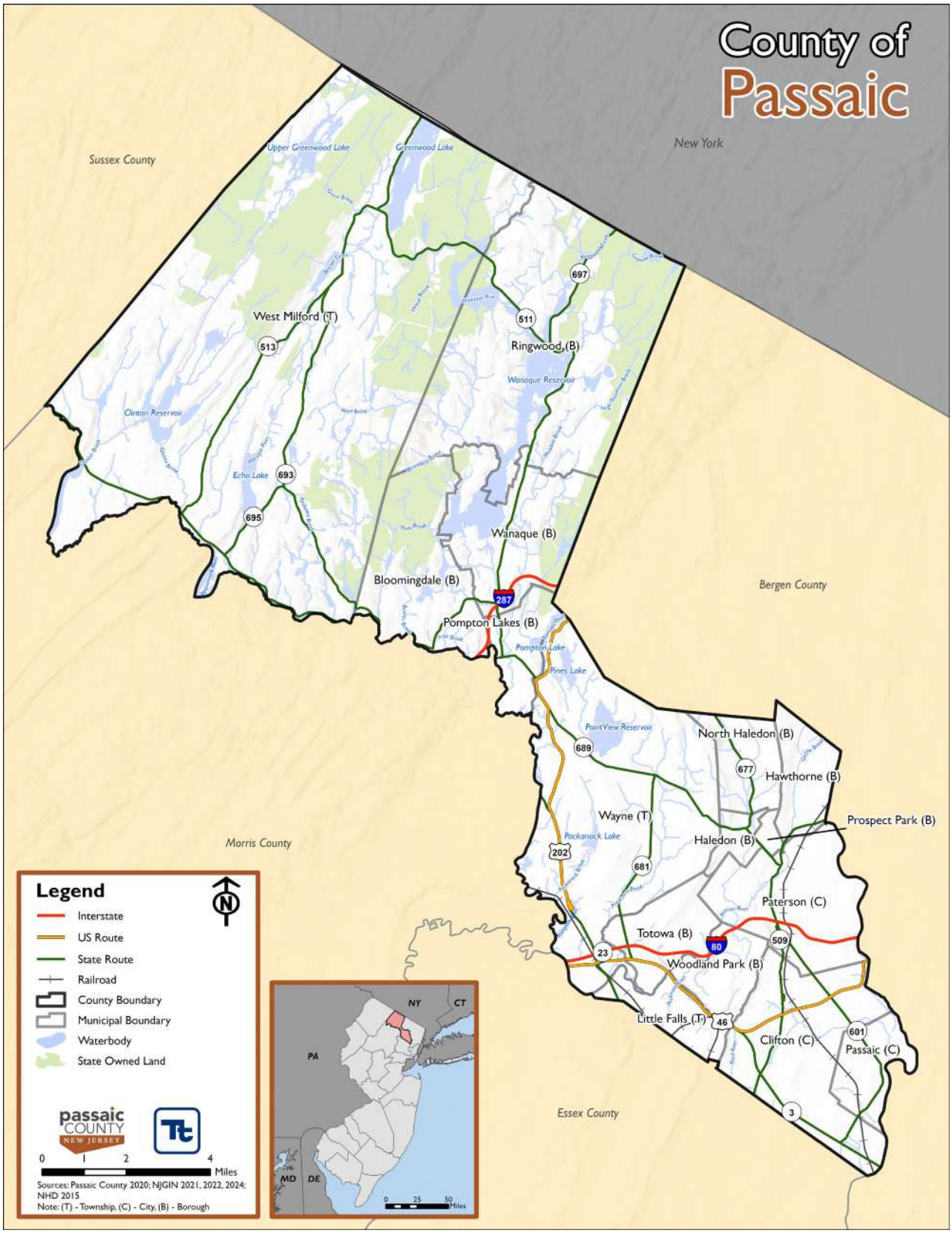
3.2 HISTORY

Prior to European settlement, Passaic County was home to the Lenni Lenape tribe for thousands of years (Scott 1929). Dutch settlers began arriving in the late 1700s, gradually purchasing land from the Lenape and establishing fur trading posts along the Passaic River (Britannica 2024). The Passaic River has been key to the growth and success of the region, providing fresh water for residents and agriculture, facilitating trade and commerce, and powering mills and other industry. The river's energy was first harnessed in the late eighteenth century with construction of the Great Falls Raceway and Power System (ASCE n.d.).

Passaic County was formed in 1837 from sections of Bergen and Essex Counties. The County grew steadily in population and economic activity through the mid-nineteenth century. Completion of the Dundee Dam and Dundee Canal in 1861 marked a shift in the County's growth. These structures enabled the provision of significantly more fresh water, which served as the launching pad for an industrial boom, primarily for wool and cotton mills, and a tenfold population increase by World War I (Auerbach 1998). Textile mills and factories became the backbone of the County's local economy, drawing in immigrants from all over the world. Between 1880 and 1910, Passaic County's population grew from 6,500 to nearly 55,000, largely due to mass immigration from Hungary, Slovakia, Poland, and other European countries (Britannica 2024). By the 1920s, Passaic County's population had grown to about 70,000 (Auerbach 1998). To accommodate the growth, residential development intensified along the Passaic River, particularly in the City of Passaic.

Industry and manufacturing allowed Passaic County to steadily grow through World War II and afterward. By the 1970s, however, recessions and energy crises led to the loss of manufacturing jobs. Between 1969 and 1975, the number of manufacturing jobs in New Jersey fell from 900,000 to 700,000 (Sullivan 1981). Despite numerous urban renewal and revitalization efforts, Passaic County was unable to reverse the decline caused by the eroding industrial base. Between 1970 and 1980, the County's population fell nearly 3 percent. This trend was reversed by a new influx of immigrants, primarily from Central and South America. The County's population has continued to grow, recording population highs in each of the 2000, 2010, and 2020 decennial census counts.

Figure 3-1. Passaic County 2025 HMP Planning Area



3.3 JURISDICTIONS WITHIN THE COUNTY

Passaic County contains 16 incorporated boroughs (B), cities (C), and townships (T):

- Bloomingdale (B)
- Clifton (C)
- Haledon (B)
- Hawthorne (B)
- Little Falls (T)
- North Haledon (B)
- Passaic (C)
- Paterson (C)
- Pompton Lakes (B)
- Prospect Park (B)
- Ringwood (B)
- Totowa (B)
- Wanaque (B)
- Wayne (T)
- West Milford (T)
- Woodland Park (B)

The boundaries of these municipalities are shown in Figure 3-1.

3.4 PHYSICAL SETTING

3.4.1 Water Resources

Surface Water Bodies

Numerous ponds, lakes, creeks, and rivers make up the waterscape of Passaic County. The major waterways within the County include Upper Greenwood Lake, Greenwood Lake, Clinton Reservoir, Echo Lake, Monksville Reservoir, the Wanaque River, Wanaque Reservoir, Lake Iosoco, Pompton Lake, Point View Reservoir, the Passaic River, the Pompton River, the Peckman River, and the Third River. The reservoirs in northern Passaic County provide drinking water to nearly 4 million residents in New Jersey's urban core, roughly half of the state's population (Passaic County Department of Planning and Economic Development 2013).

The Pompton and Pequannock Rivers create the border between Passaic and Morris Counties. The Passaic River forms the border between Bergen and Passaic Counties.

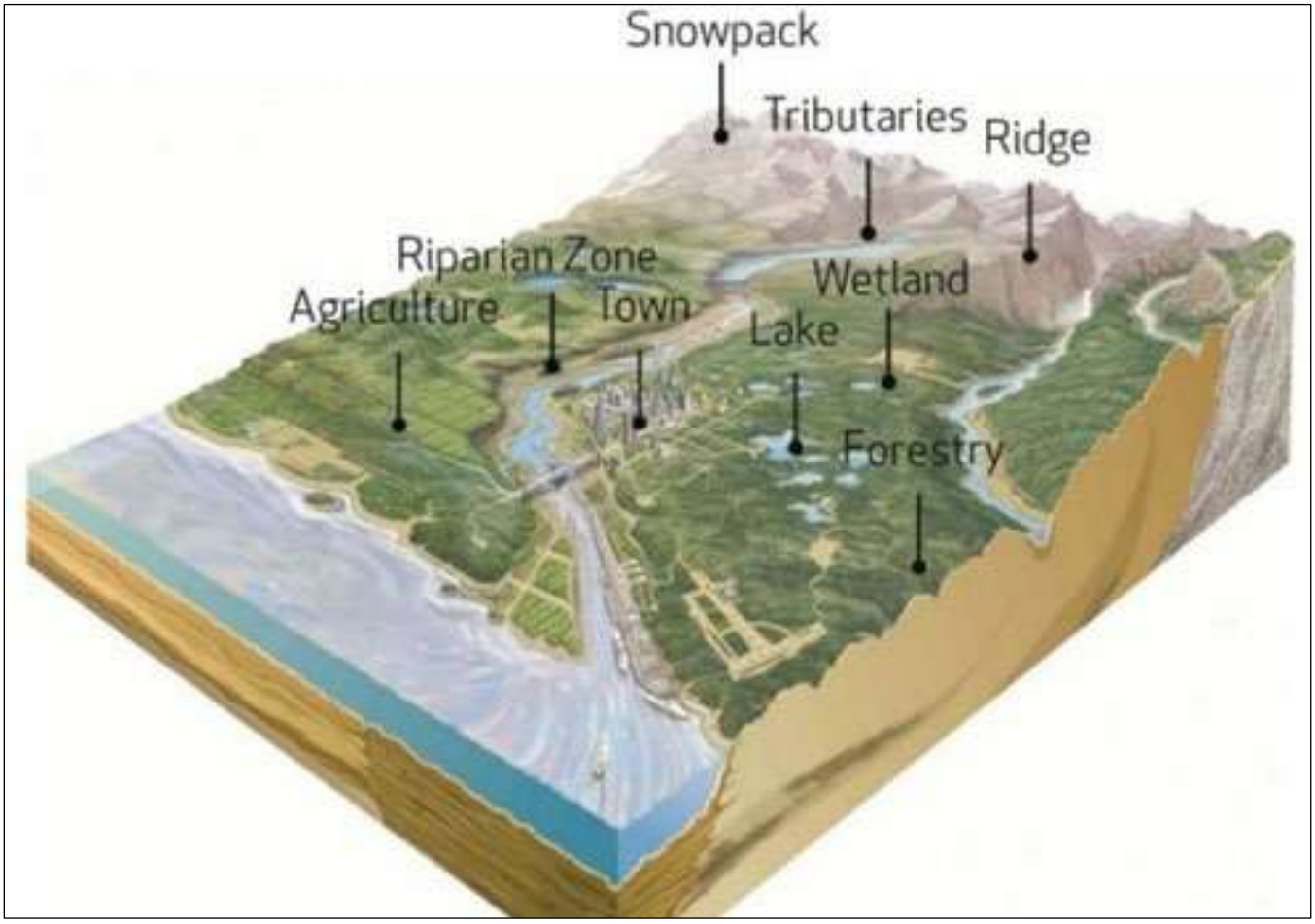
Watersheds

As shown in Figure 3-2, a watershed is the area of land that drains into a body of water such as a river, lake, stream, or bay. It is separated from other systems by high points in the area such as hills or slopes. It includes not only the waterway itself but also the entire land area that drains to it. Drainage basins generally refer to large watersheds that encompass the watersheds of many smaller rivers and streams.

Passaic River Basin

The Passaic River is the second largest and the longest river in New Jersey, with a main stem approximately 80 miles long. The Passaic River Basin is about 935 square miles and covers seven New Jersey counties and two New York State counties. The major tributaries of the Passaic River Basin include the Whippany, Rockaway, Pequannock, Wanaque, Ramapo, Pompton, Saddle, Third, and Second Rivers. The Passaic River flows from its source in Mendham Township (Morris County) through the Great Swamp National Wildlife Refuge and then turns northeast. In the City of Paterson (Passaic County), the river plunges over the Great Falls and then flows south into Newark Bay and ultimately the Atlantic Ocean (Passaic River Institute 2014).

Figure 3-2. Watershed Hydrological System



Source: State of New Jersey All-Hazard Mitigation Plan 2024

The Passaic River Basin covers 1,134 square miles and receives an average of 50.08 inches of rain each year. The basin has three distinct geophysical regions: the Highlands, where most of the major tributaries originate; the Central Basin, where approximately 27,000 acres of freshwater wetlands exist; and the Lower Valley, which defines the stretch of river from Little Falls to Newark Bay.

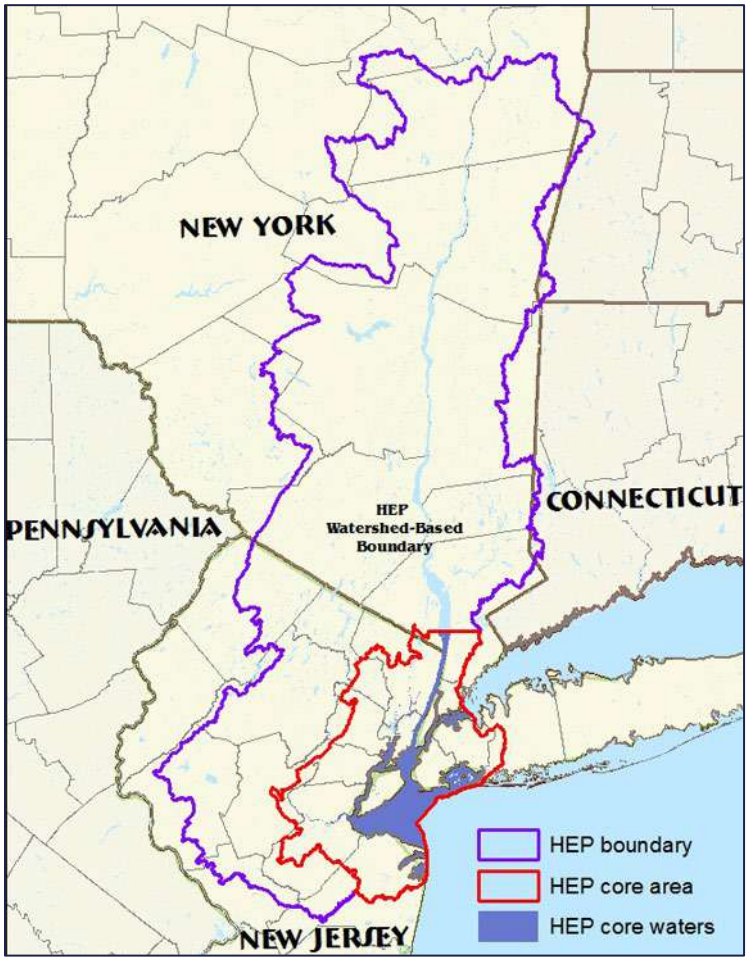
The upper section of the river is nearly 50 miles long and drains about 200 square miles. About half of this section is undeveloped and the other portion is mainly suburban residential and commercial. This section of the Passaic River and its tributaries (Pequannock, Rockaway, Wanaque, Ramapo, and Pompton Rivers) are a source of drinking water for millions of northern New Jersey residents. Interconnected systems deliver water through the New Jersey District Water Supply Commission, serving 107 municipalities; the Passaic Valley Water Commission serving the Cities of Clifton, Paterson, and Passaic and numerous surrounding municipalities; and the New Jersey American Water Company, which serves 42 municipalities (Passaic River Institute 2014).

The Passaic River Basin has one of the most densely developed floodplains in the eastern U.S. It has a population density of 8,656 people per square mile with 2.5 million residents (50,000 living in the floodplain) and approximately 20,000 homes, businesses, and public buildings. The main stem of the Passaic River and its major tributaries have a 1 percent annual chance flood area that covers 60 square miles (Passaic County Department of Planning and Economic Development 2013).

New York-New Jersey Harbor Estuary

An estuary is a body of water where rivers meet the ocean and saltwater meets fresh water. The New York-New Jersey Harbor Estuary is positioned at the confluence of the Hudson River and smaller rivers such as the East, Hackensack, and Raritan Rivers. It opens into the New York Bight and Long Island Sound. The watershed of the Harbor Estuary encompasses a large area that includes the Hudson River watershed up to the Troy Dam, as well as the watersheds of the Raritan, Passaic, and Hackensack Rivers. Figure 3-3 shows the watershed boundary, identified on the map as the HEP (Harbor and Estuary Program) boundary. The map also shows a core area with the most direct drainage to the estuary. Passaic County in entirely in the estuary's overall watershed, and most of its southern portion is within the core area (NY-NJ Harbor & Estuary Program 2017).

Figure 3-3. New York-New Jersey Harbor Estuary

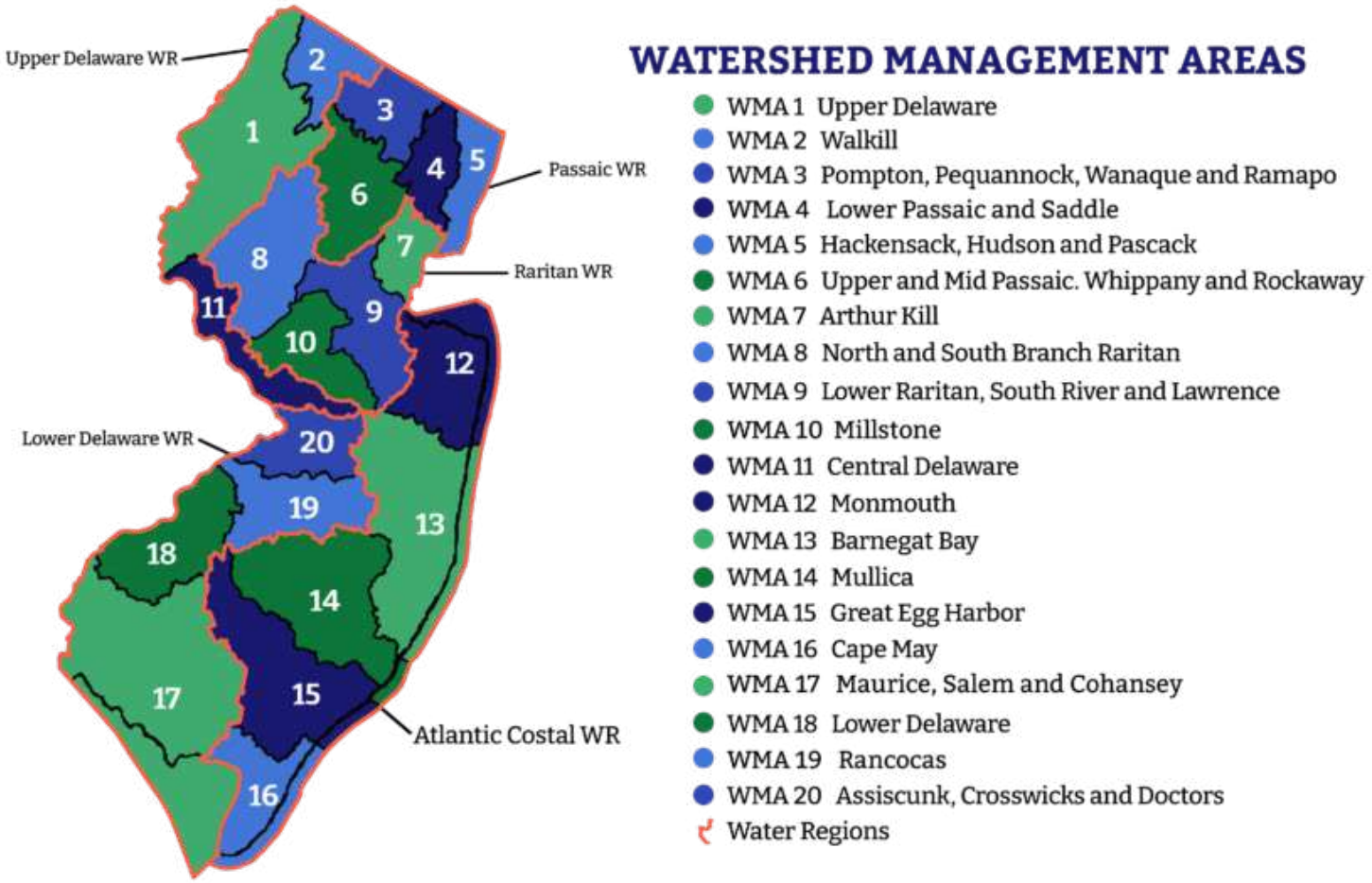


Source: (NY-NJ Harbor & Estuary Program 2017)

Watershed Management Areas

In New Jersey, the State is divided into 20 Watershed Management Areas (WMA), which are made up of smaller watersheds. As shown in Figure 3-4, Passaic County is located in three of the 20 WMAs: Wallkill (WMA 2); Pompton, Pequannock, Wanaque, Ramapo (WMA 3); and Lower Passaic, Saddle River (WMA 4). The following sections describe these three WMAs.

Figure 3-4. Watershed Management Areas in New Jersey



Source: (Cucinotta 2023)

Watershed Management Area 2: Wallkill River Watershed

Approximately 8 square miles (3.9 percent) of Passaic County is located in WMA 2. Only the Township of West Milford is located in this area. This WMA is known as the Wallkill River Watershed and includes 11 townships in Sussex County. The Wallkill River headwaters begin at Lake Mohawk in Sparta Township, and from there the river flows north into New York, eventually emptying into the Hudson River. Within WMA 2, there are four sub-watersheds: the Wallkill River, Pochuck Creek, Papakating Creek, and Rutgers Creek.

The Wallkill Watershed is 208 square miles in area and encompasses land uses including rural and centralized residential development along with agriculture, commercial, recreational, and industrial usage. Also located within this watershed area is the Wallkill National Wildlife Refuge. The refuge watershed/wetlands complex provides migratory and nesting habitats for numerous birds and waterfowl and is home to several endangered species.

Watershed Management Area 3: Pompton, Pequannock, Wanaque, Ramapo Watersheds

Approximately 135 square miles (68.6 percent) of Passaic County is located in WMA 3. The Boroughs of Bloomingdale, Pompton Lakes, Ringwood, and Wanaque, and the Townships of Wayne and West Milford are all located within WMA 3. This WMA is located within the Highlands Province of New Jersey. The Pequannock, Wanaque, and Ramapo Rivers all flow into the Pompton River. The Pompton River is, in turn, a major tributary to the Upper Passaic River.

WMA 3 contains some of the state's major water supply reservoir systems, including the Wanaque Reservoir which is the largest surface water reservoir in New Jersey. There are four watersheds in WMA 3: Pompton, Ramapo, Pequannock and Wanaque River. WMA 3 lies mostly in Passaic County but also includes parts of Bergen, Morris, and Sussex Counties.

Watershed Management Area 4: Lower Passaic, Saddle River

Approximately 54 square miles (27.5 percent) of Passaic County is in WMA 4. The Cities of Clifton, Passaic, and Paterson, the Boroughs of Haledon, Hawthorne, North Haledon, Prospect Park, Totowa, and West Paterson, and the Townships of Little Falls and Wayne are all located within WMA 4. This WMA includes the Lower Passaic River (from the Pompton River confluence downstream to the Newark Bay) and its tributaries, including the Saddle River. The WMA 4 drainage area is approximately 180 square miles and lies within portions of Passaic, Essex, Hudson, Morris, and Bergen Counties.

Two watersheds comprise WMA 4: the Lower Passaic River Watershed and Saddle River Watershed. The Lower Passaic River Watershed originates from the confluence of the Pompton River downstream to Newark Bay. This 33-mile section meanders through Bergen, Hudson, Passaic, and Essex Counties and includes several falls, culminating with the Great Falls in Paterson. This watershed has a drainage area of approximately 129 square miles. The major tributaries to this section of the Passaic River are the Saddle River, Preakness Brook, Second River, and Third River. The Saddle River is one of the larger tributaries to the Lower Passaic River. The Saddle River Watershed has a drainage area of approximately 51 square miles. Land in this watershed is extensively developed and contains many older cities and industrial centers including Newark, Paterson, Clifton, and East Orange.

3.4.2 Topography and Geology

The name “Passaic” is derived from the Lenni Lenape word for valley, *pasaeck*. Northern Passaic County is generally characterized by long, even ridges that are separated by narrow, continuous valleys. This area of the county is part of the Appalachian Mountain chain, which extends from Newfoundland, Canada to central Alabama. The highest elevation in Passaic County is at Bearfort Ridge in West Milford, at 1,480 feet above sea level. The municipalities of West Milford, Ringwood, Bloomingdale, Wanaque, and Pompton Lakes are in northern Passaic County (Passaic County Planning Department 2014).

In the southern portion of the County, the terrain becomes progressively less variable, and valleys are wider toward the east. The last major ridge is Garret Mountain, which is over 500 feet tall and is the location of Garret Mountain Reservation and Rifle Camp Park. Garret Mountain is the northernmost part of First Watchung Mountain, which is one of several national natural landmarks in New Jersey. The lowest elevation of Passaic County is located to the east of Garret Mountain, along the Passaic River in the City of Clifton (Passaic County Planning Department 2014).

Passaic County is located within two of the four major physiographic regions of New Jersey:

- The Highlands Province occupies an area of approximately 980 square miles and lies within portions of Hunterdon, Morris, and Passaic Counties and small parts of Bergen and Somerset Counties. This mountainous belt is approximately 10 miles wide at the Delaware River and 25 miles wide near the New York State border. In general, this part of New Jersey has a rugged topography that consists of discontinuous rounded ridges separated by deep narrow valleys (Dalton 2003).
- The Piedmont Province has an area of approximately 1,600 square miles and makes up about one-fifth of New Jersey. It occupies all of Essex, Hudson and Union Counties, most of Bergen, Hunterdon, and Somerset Counties, and parts of Mercer, Middlesex, Morris, and Passaic Counties. The Piedmont Province is mainly underlain by slightly folded and faulted sedimentary rocks of the Triassic and Jurassic period and igneous rocks of the Jurassic period. The elevation of the Piedmont Province generally ranges from 300 to 400 feet above sea level, with the highest point at 914 feet on Barren Ridge (Dalton 2003).

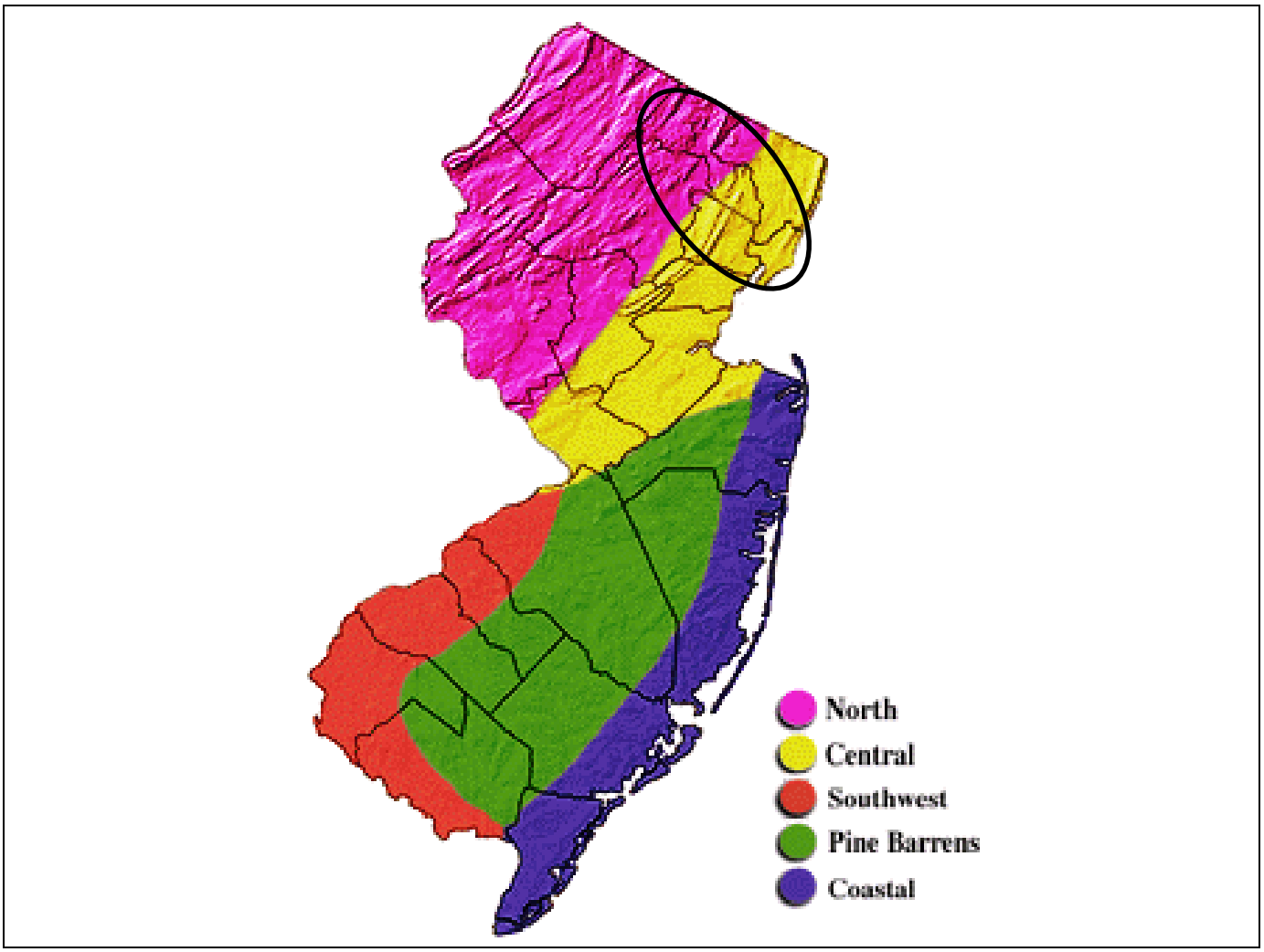
Surficial materials in Passaic County include till, glacial lake and glacial river sand and gravel deposits, glacial lake and clay deposits, post-glacial floodplain and stream terrace deposits, peat and organic silt and clay deposited in wetlands, and bedrock with thin or no soil cover.

3.4.3 Climate

Current Climate

The broad, undulating flow from west to east across the middle latitudes of North America exerts a major influence on New Jersey’s weather. The state is divided into five climate zones, as shown on; see Figure 3-5, with variations in day-to-day weather based on geology, distance from the Atlantic Ocean, and prevailing atmospheric flow patterns.

Figure 3-5. Climate Zones of the State of New Jersey



Source: Rutgers University 2019.
Note: The black oval indicates the location of Passaic County.

Passaic County is in two of the five zones (Office of the New Jersey State Climatologist n.d.):

- The **Northern Climate Zone** covers approximately one-quarter of New Jersey and consists mainly of elevated highlands and valleys that are part of the Appalachian Uplands. This zone has a continental climate with minimal influence from the Atlantic Ocean, except when winds are easterly. Prevailing winds are from the southwest in summer and from the northwest in winter. The highlands and mountains play a role in making the climate of this zone different from the rest of the state. Clouds and precipitation are enhanced by cold frontal passage when the air, forced to rise over the mountains, produces clouds and precipitation while the rest of the state has clear skies. Annual snowfall averages 40 to 50 inches. In warm months, thunderstorms are responsible for most of the rainfall. This climate zone has the shortest growing season, about 155 days.
- The **Central Climate Zone** has a northeast to southwest orientation, running from New York Harbor and the Lower Hudson River to the Great Bend of the Delaware River near the City of Trenton. The northern edge of the Central Zone is often the boundary between freezing and non-freezing precipitation in the state.

Areas to the south of the Central Climate Zone tend to have nearly twice as many days with temperatures above 90ºF than the 15 to 20 commonly observed in the central portion of the state

The 30-year average annual temperature in Passaic County is 51.2 degrees Fahrenheit (°F), peaking in July at 73.5 °F and hitting its lowest in January at 28.4 °F. Over the past three decades, Passaic County has experienced increasingly hotter monthly average maximum temperatures. Today, its 30-year average maximum temperature for July, its hottest month, is 84 °F. The County receives 48.60 inches of precipitation during the average year, most of which falls between June and October. Spring and summer frontal systems can produce high rainfall amounts and spawn tornados. Tropical storm systems can affect the Northern Atlantic Seaboard from late summer to late fall (Office of the New Jersey State Climatologist 2024).

Past and Projected Climate Change

Climate change includes major changes in temperature, precipitation, or wind patterns, which occur over several decades or longer. Records show ongoing changes in all these factors, and scientists predict the changes to continue.

Temperature

The Office of the State Climatologist at Rutgers University has been tracking temperature and precipitation records in the State of New Jersey since 1895. Their data reveals a significant increase in the state's average annual temperature by 3.5 °F over the past century. This warming trend in the State of New Jersey is more pronounced than in the rest of the Northeast region, which has seen a 2 °F increase, and the global average increase of 1.5 °F (NJDEP 2020).

Since 1970, the rate of warming in the State of New Jersey has accelerated. Analysis of data up to the end of 2019 shows that the 10 warmest years on record have all occurred since 1990, while the 10 coldest years were all before 1940. The warmest year on record was 2012, with an average annual temperature 4.1 °F above the long-term average (1895-2019) and 3.0 °F above the 30-year normal. The recent 10-year average annual temperature is about 3 °F above the 1901-1960 period average.

Projections indicate that the State of New Jersey will continue to warm. Global climate models, which consider future greenhouse gas emissions, predict unprecedented warming in the 21st century. Under both high and low greenhouse gas emission scenarios, annual temperatures are expected to be as warm as the warmest years in the historical record. By 2050, average annual temperatures in New Jersey could be 1 °F to 6 °F warmer, and by 2100, they could be 3 °F to 9 °F warmer under a lower emissions scenario, and 6 °F to 13 °F warmer under a higher emissions scenario (NJDEP 2020).

Precipitation

As temperatures increase, Earth's atmosphere can hold more water vapor, which leads to a greater potential for precipitation. Since the end of the 20th century, New Jersey has experienced slight increases in the amount of precipitation it receives each year, and over the last 10 years there has been a 7.9 percent increase. By 2050, annual precipitation in New Jersey could increase by 4 percent to 11 percent.

Weather Extremes

New Jersey's four warmest winters have occurred since 1998, and the eight warmest summers since 1999 (NJDEP 2020). From 1990 to 2019, there were 43 instances of months with top-5 warmest average temperatures, while no

months recorded a top five coldest average temperature in the same period. The last top five coldest month was December 1989.

With projected ongoing change, summers will be hotter and winters will see fewer cold waves and less snow (NJDEP 2020). The State of New Jersey can expect that by the middle of the 21st century, 70 percent of summers will be hotter than the warmest summer experienced to date. Heatwaves are projected to increase in frequency, duration, and spatial extent, resulting in adverse impacts such as lower agricultural yields, higher energy consumption, reduced power plant efficiency, increased air pollution, negative effects on human health, greater water loss through evapotranspiration. and potential summer droughts (NJDEP 2020)

The increase in temperatures is expected to be felt more during the winter months (December, January, and February), resulting in less intense cold waves, fewer sub-freezing days, and less snow accumulation (NJDEP 2020). An increase in average annual temperatures leading to more intense heat waves and fewer cold waves will extend the growing season.

Extreme storms, including nor'easters and thunderstorms, have become more frequent, with a 71 percent increase in extreme rain events over the past 50 years. By 2050, total annual precipitation is expected to increase, largely in the form of more intense rain events. By the end of this century, heavy precipitation events are projected to occur two to five times more often and with more intensity than in the last century. New Jersey will experience more intense rain events, less snow, and more total rainfall. Small decreases in the amount of precipitation may occur in the summer, resulting in greater potential for more frequent and prolonged droughts. New Jersey could also experience an increase in the number of flood events (NJDEP 2020).

3.4.4 Land Cover

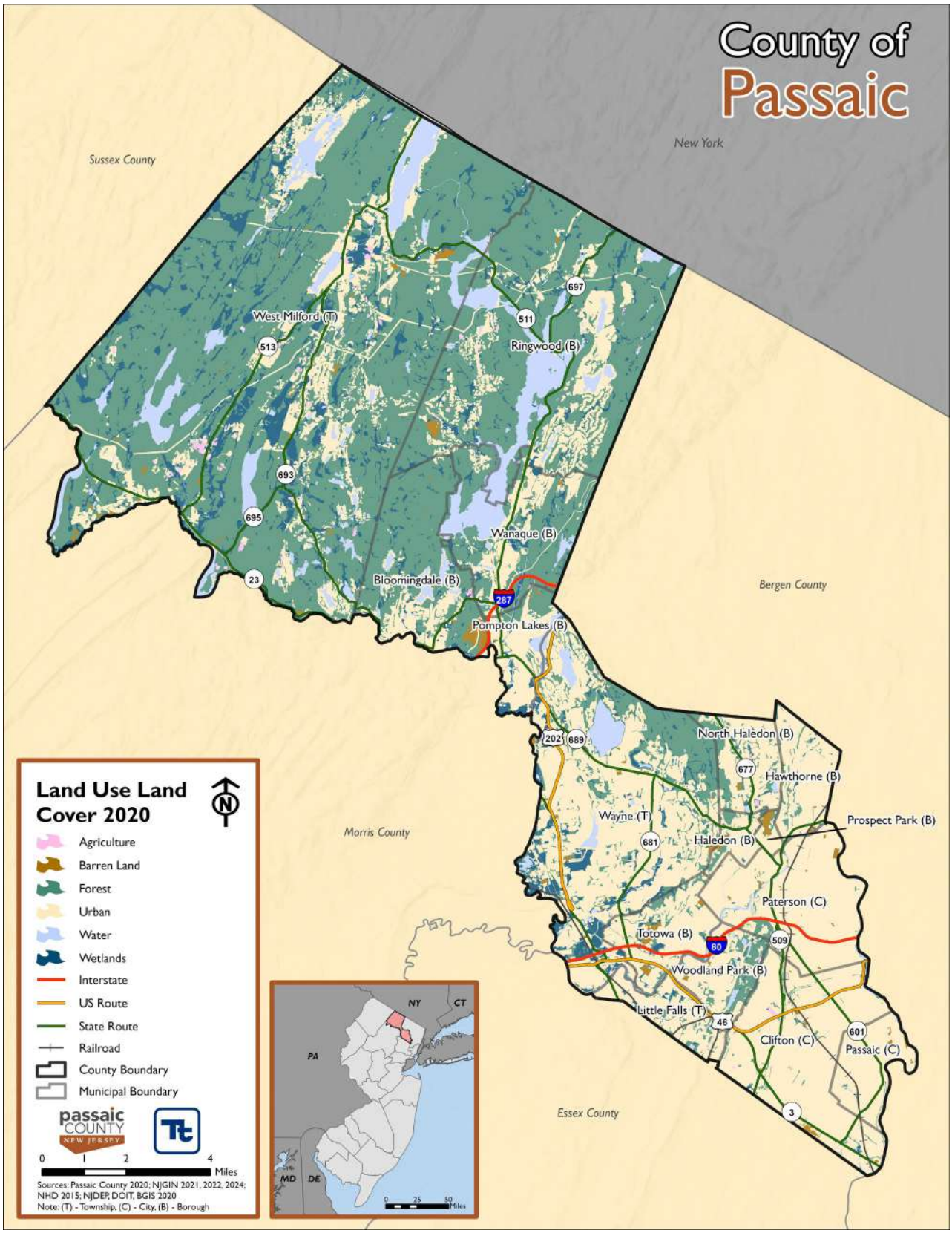
Passaic County has a significantly varied landscape. As shown in Table 3-1, nearly half of all land cover is forested (47.3 percent in 2020), and just over a third (37.3 percent) is designated as urban areas, which includes residential, industrial, transportation, and recreational land. The northern half of the County overlaps with the Highlands Region and contains most of the County's forested land, including state and county parkland, preserved watershed lands, and agriculture. Much of the County's urbanized area is in the south. Roughly 7 percent of the County's area is wetlands, less than 1 percent is barren, and less than one-half percent is agriculture. There have been negligible changes in the land cover composition since the pervious HMP, which used 2016 data. Figure 3-6 shows land cover in Passaic County.

Table 3-1. Passaic County Land Cover: 2007, 2016 and 2020

	2007 Data		2016 Data		2020 Data	
Land Cover Category	Acreage	Percent	Acreage	Percent	Acreage	Percent
Agriculture	442.9	0.4%	453.08	0.36%	455.4	0.4%
Barren	896.1	0.7%	1,135.75	0.89%	1,016.3	0.8%
Forest	60,634.3	47.8%	60,263.20	47.5%	60,109.6	47.3%
Urban Area	46,913.4	37.0%	47,110.79	37.1%	47,434.9	37.3%
Wetlands	8,852.2	7.0%	10,368.33	8.2%	8,844.5	7.0%

Source: NLCD, NJDEP, DOIT, BGIS 2020
Note: Urban land includes residential, industrial, transportation, and recreational land. Open water is excluded from the data.

Figure 3-6. Land Cover in Passaic County



3.5 LAND USE

3.5.1 Current Land Use

Figure 3-7 shows land use patterns in Passaic County. Most of the County's land use is designated as forest, recreational land, and other greenspaces, much of which is concentrated to the north and overlaps with the Highlands Region. The southern half of the County is more urbanized, containing mostly medium- and high-density residential, commercial, and industrial uses. There are several commercial and industrial corridors concentrated along key transportation routes, such as U.S. 202, County Routes 504, 665, 6,40, 646, 601, and 624, and NJ TRANSIT's Main Line regional rail route (Passaic County Department of Planning & Economic Development 2024).

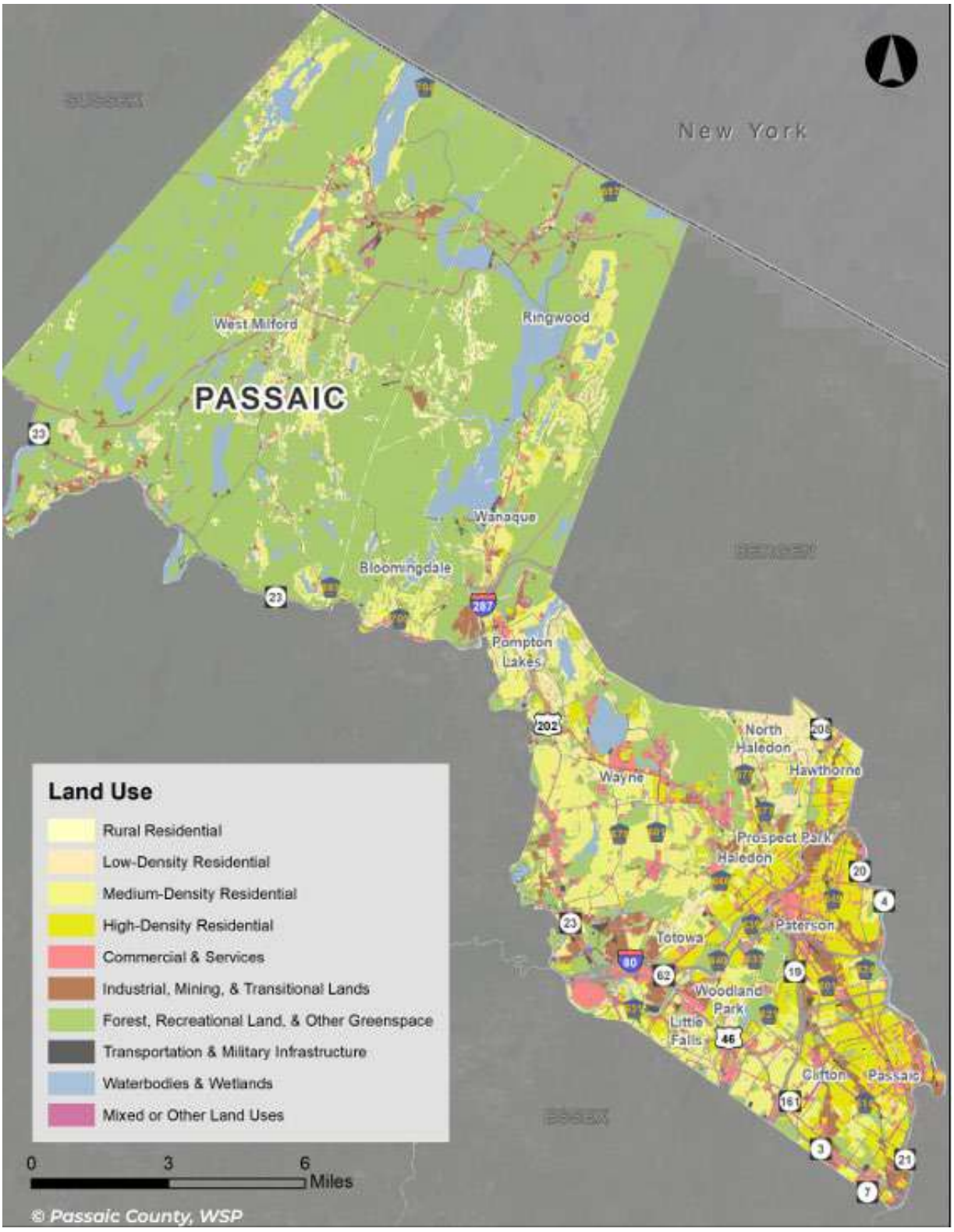
The current distribution of land uses in the county is generally as follows:

- **Residential—**In Passaic County, 86 percent of the buildings are residential. According to 2020 Decennial Census, 177,075 households are in Passaic County. A household includes all the people who occupy a housing unit as their usual residence. The 2020 Decennial Census also reported a total of 185,367 housing units in Passaic County (U.S. Census Bureau 2020). A housing unit is a house, apartment, mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters (or if vacant, intended for occupancy as separate living quarters). Of these, approximately 4.5 percent are vacant.
- **Commercial—**Almost 13 percent of all buildings in Passaic County are commercial. Most commercial buildings are concentrated in the southern, more urbanized portion of the County.
- **Industrial—**Fewer than 1 percent of buildings in Passaic County are industrial.
- **Agriculture—**Passaic County does not contain Agricultural Resource Areas or Priority Areas. Based on the 2022 Census of Agriculture, Passaic County contains 99 farms covering a cumulative 1,830 acres, the majority of which are less than 50 acres each (USDA 2024).
- **Parks and Open Space—**Based on the most recent Parks, Recreation, and Open Space Master Plan, Passaic County contains 56,837 acres of dedicated park, recreation, and open space areas. Of these areas, non-profit organizations and similar organizations control 1,803 acres; the federal government controls 57 acres; the State of New Jersey controls 29,849 acres; municipalities control 4,837 acres; the Newark Watershed Conservation and Development Corporation controls 16,351 acres; and 3,940 acres are controlled by the County or its non-profit partners and are part of the Passaic County Park System (Passaic County Planning Department 2014). The Passaic County Park System has 11 park, recreation, and open space areas, as listed in Table 3-2.

3.5.2 New Jersey Highlands Region

The Highlands Region spans portions of New Jersey, New York, Pennsylvania, and Connecticut. The New Jersey Highlands is a 1,343-square-mile area in the northwest portion of New Jersey, as shown in Figure 3-8. It is noted for its scenic beauty and environmental significance and serves as a source of drinking water for over half of New Jersey residents. The New Jersey Highlands stretches from Phillipsburg in Warren County to Ringwood in Passaic County. It covers portions of seven counties—Hunterdon, Somerset, Sussex, Warren, Morris, Passaic and Bergen—and 88 municipalities.

Figure 3-7. Land Use in Passaic County



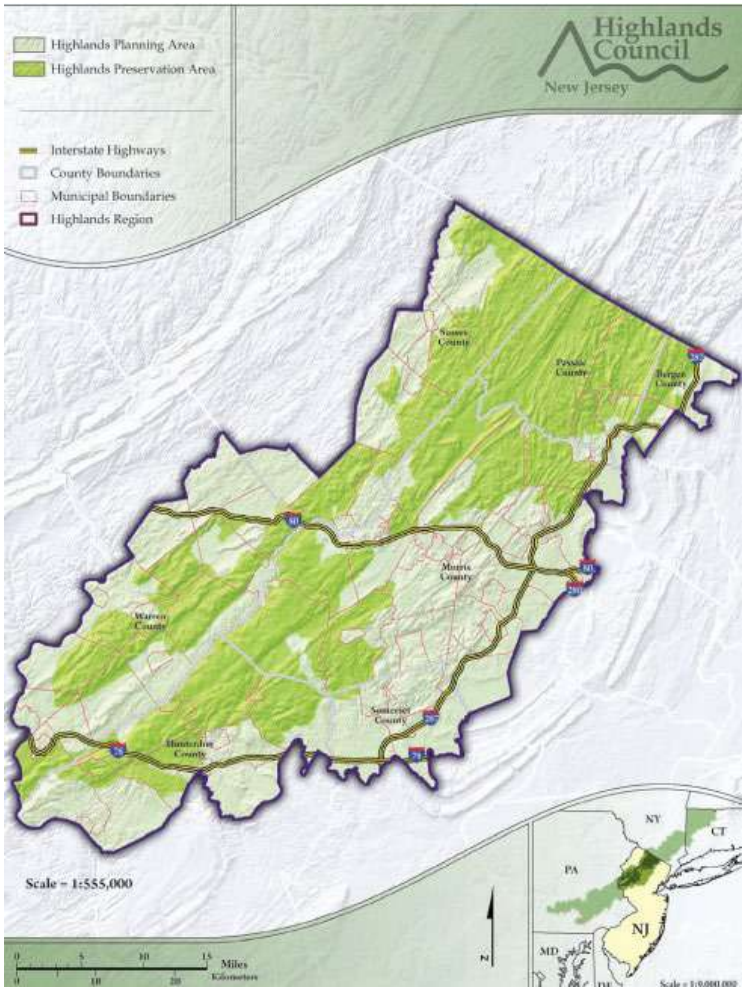
Source: (Passaic County Department of Planning & Economic Development 2024)
Note: Land use classifications have been consolidated into 10 categories on the map to improve readability.

Table 3-2. Passaic County Park System Assets

County Park	Acreage	Location
Apshawa Preserve	594	Township of West Milford
Friendship Park	44	Borough of Bloomingdale
Garret Mountain Reservation	310	City of Paterson and Borough of Woodland Park
Goffle Brook Park	100	Borough of Hawthorne
Peckman Preserve	12	Township of Little Falls
Pompton Aquatic Park	29	Township of Wayne and Borough of Pompton Lakes
Preakness Valley Park	377	Township of Wayne and Borough of Totowa
Rifle Camp Park	169	Borough of Woodland Park
San Cap Park	224	Township of West Milford
Tranquility Ridge Park	2,062	Township of West Milford and Borough of Ringwood
Weasel Brook Park	19	City of Clifton

Source: (Passaic County Planning Department 2014)

Figure 3-8. New Jersey Highlands Region



Source: (NJ Highlands Council 2023)

The Highlands Act designated approximately 398,000 acres as the Highlands Preservation Area, which is identified as an area of exceptional natural resource value. The remainder of the Highlands Region that is not located within the Preservation Area lies within the Highlands Planning Area. The distinction between the Preservation and Planning Area is that municipal and county conformance with the Highlands Regional Master Plan is required in the Preservation Area, and voluntary in the Planning Area.

In Passaic County, the Highlands Area covers 78,789 acres in the northern portion of the County. The Township of West Milford and Borough of Ringwood are entirely within the Highlands Preservation Area, while the Boroughs of Wanaque and Bloomingdale are primarily in the Preservation Area and partially in the Planning Areas. The Borough of Pompton Lakes is entirely within the Planning Area (Passaic County Department of Planning and Economic Development 2013).

The New Jersey Highlands Council assists with planning and considers hazard areas such as floodplains when evaluating new and re-development in the region. Passaic County works to ensure new development is consistent with the Highlands Regional Master Plan, completed in 2008. The Highland Regional Master Plan emphasizes the need for compatible growth opportunities that include infill development, re-development, adaptive re-use, and brownfields redevelopment, and also establishes the framework for a voluntary transfer of development rights program to support land preservation efforts. The plan identified “Existing Community Zones,” which consist of areas with regionally significant concentrated development signifying existing communities, as well as areas for potential new development, such as designated centers and sewer service areas. Existing Community Zones are designated as two sub-types (New Jersey Highlands Council 2008):

- Environmentally Constrained Sub-Zones, which consists of critical habitat, steep slopes, and forested land that should be protected from further fragmentation
- Lake Community Sub-Zones, which are areas within 1,000 feet of lakes that are targeted for policies to prevent water quality degradation, watershed pollution, and ecosystem harm

3.5.3 Land Use Trends

Land use trends can impact the need for and priority of mitigation options over time. They can also significantly affect vulnerability to hazards and potential impacts from hazard events. For example, significant development in a hazard area increases the building stock and population exposed to that hazard. Local zoning and planning authority are provided for under the New Jersey Municipal Land Use Law, which gives municipalities zoning and planning authority.

Passaic County’s access to major cities, mass transit, higher education institutions, and a large working-age population makes it an attractive place for new development. The County uses best available data to avoid potential exposure of development to hazard events where possible. The County discourages development in vulnerable areas, areas with high population density, and the Special Flood Hazard Area; and encourages higher regulatory standards at the local level.

The County’s Division of Economic Development initiates large-scale real estate development projects, promotes the redevelopment of brownfield sites, and encourages the creation of local partnerships between the Passaic County business community and residents. Passaic County’s 2015 Comprehensive Economic Development Strategy (CEDS) emphasized the use of technology to support economic development, including access to high-speed telecommunications, as one of seven primary goals of the strategy (Passaic County Department of Planning and Economic Development 2015).

Passaic County has received federal support to incentivize development and investment. In 2017, census tracts in the City of Paterson, City of Passaic, City of Clifton, and Borough of Prospect Park were designated as "Opportunity Zones," which refer to low-income rural or urban communities that have long experienced stagnant growth or declining populations (Passaic County Department of Planning and Economic Development n.d.). This federal program allows investors to defer paying taxes on capital gains reinvested into a Qualified Opportunity Fund, which are funds required to invest 90 percent of capital in Opportunity Zones. Since its enactment, no Opportunity Zone projects have been built in Passaic County.

3.6 POPULATION AND DEMOGRAPHICS

3.6.1 Current Population

The 2020 U.S. Decennial Census counted Passaic County's population as 524,118, an increase of 4.6 percent from the 2010 Decennial Census (501,226). The 2022 American Community Survey 5-Year Estimates (ACS) showed a County population of 519,986. FEMA's Hazus model, which is used in the risk assessment for this HMP, incorporates population data from the 2020 Decennial Census.

Figure 3-9 shows population per square mile in Passaic County. Northern Passaic County is not as densely populated as southern Passaic County for the following reasons (Passaic County Planning Department 2014):

- Historical development patterns associated with the Passaic River, which is in the southern portion of the county, and its historic use as a power source for mills and factories
- Historical development of major transportation networks in the second half of the twentieth century
- The passage of the Highlands Act, restricting development in the northern portion of the county

3.6.2 Population Trends

Population trend information was evaluated to estimate future shifts that could significantly change the character of the area. Population trends can provide a basis for making decisions on the type of mitigation approaches to consider and the locations in which these approaches should be applied. This information can also be used to support planning decisions regarding future development in vulnerable areas.

Table 3-3 shows population statistics for Passaic County and its municipalities from the 2000, 2010, and 2020 decennial Census and the 2022 ACS 5-Year Estimates. The County experienced consistent population growth from 1980 through 2020, hitting its all-time high in 2020. The 4.6 percent growth in County population between 2010 and 2020 was slightly slower than the statewide growth rate of 5.7 percent (U.S. Census Bureau 2020).

Based on the 2022 ACS 5-Year Estimates, Passaic County may have experienced some population loss from 2020 to 2022, but this may be attributable to the collection and analysis methods used by the ACS versus the Decennial Census. The most recent state estimates (from 2014) predict continued growth in the County through 2034, as shown in Figure 3-10 and Table 3-4.

Figure 3-9. Passaic County Population per Square Mile

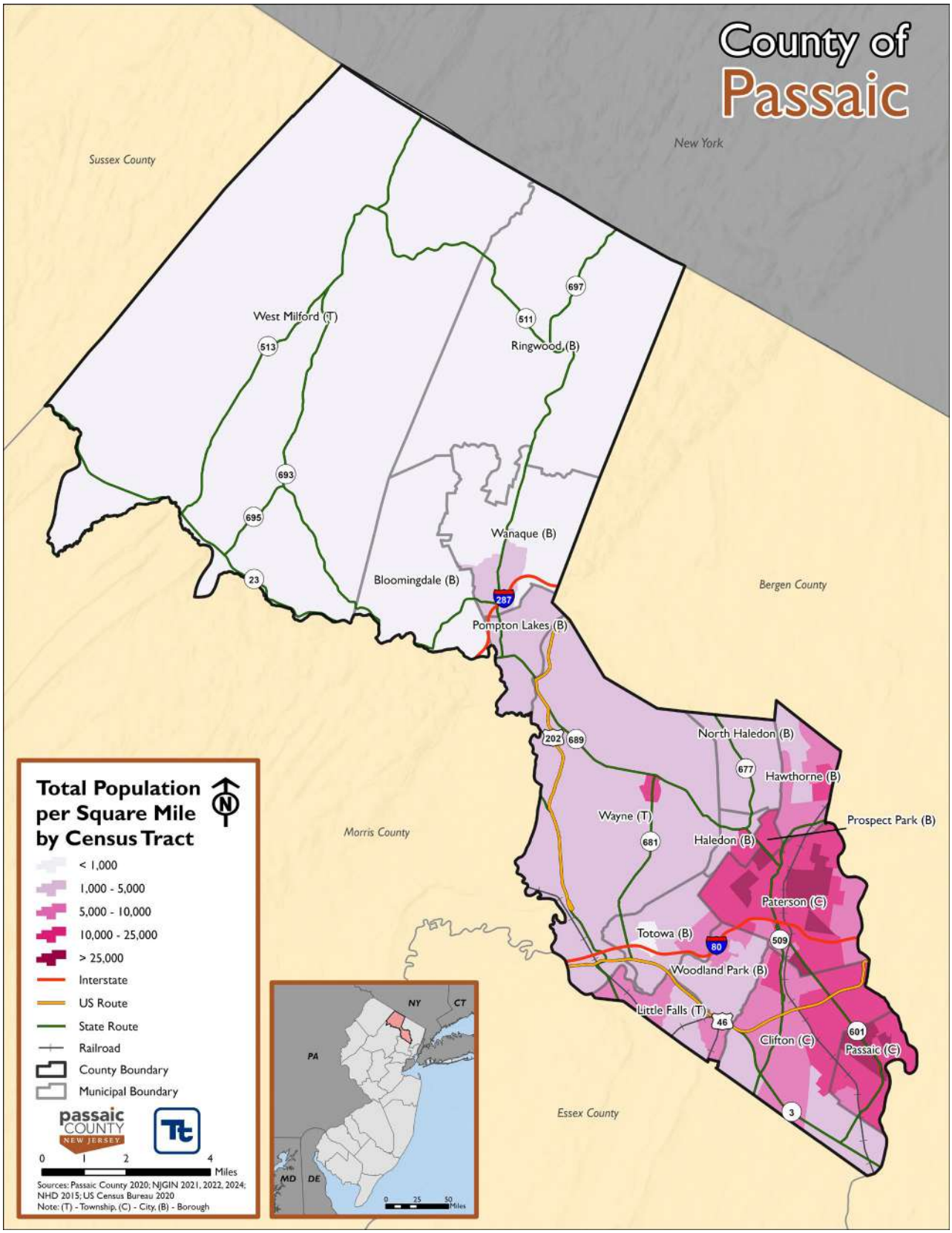
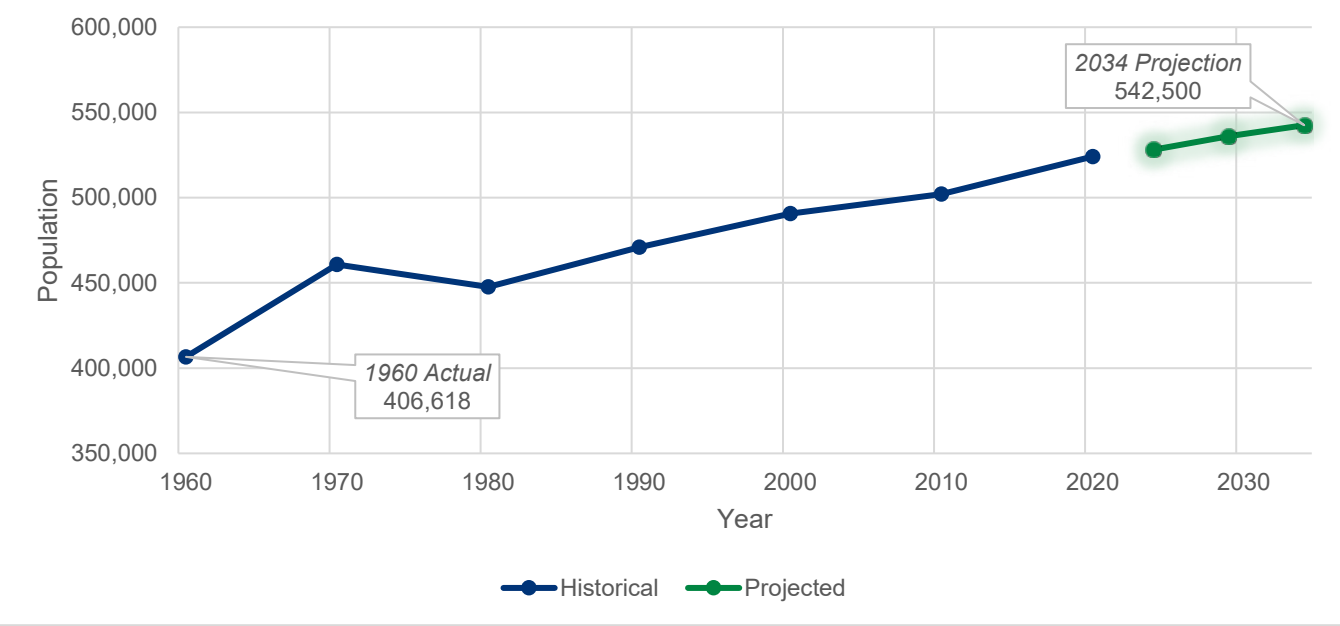


Table 3-3. Passaic County Population Change 2000 to Present

Jurisdiction	Population			
	2000	2010	2020	2022
Bloomingdale (B)	7,610	7,656	7,777	7,726
Clifton (C)	78,672	84,136	90,296	89,451
Haledon (B)	8,252	8,318	9,052	8,945
Hawthorne (B)	18,218	18,791	19,637	19,456
Little Falls (T)	10,855	14,432	13,360	14,229
North Haledon (B)	7,920	8,417	8,927	8,801
Passaic (C)	67,861	69,781	70,537	70,048
Paterson (C)	149,222	146,199	159,732	157,864
Pompton Lakes (B)	10,640	11,097	11,127	11,052
Prospect Park (B)	5,779	5,865	6,372	6,299
Ringwood (B)	12,396	12,228	11,735	11,692
Totowa (B)	9,892	10,804	11,065	10,975
Wanaque (B)	10,266	11,116	11,317	11,217
Wayne (T)	54,069	54,717	54,838	54,143
West Milford (T)	26,410	25,850	24,862	24,797
Woodland Park (B)	1,098	11,819	13,484	13,291
Passaic County	**490,669**	**501,226**	**524,118**	**519,986**

Source: (Passaic County Office of Emergency Management 2020, U.S. Census Bureau 2020)

Figure 3-10. Historical and Projected Population Change in Passaic County



Source: (Passaic County Office of Emergency Management 2020, U.S. Census Bureau 2020)

Table 3-4. Historical and Projected Population Change in Passaic County

Historical Passaic County Population							Projected Passaic County Population		
1960	1970	1980	1990	2000	2010	2020	2024	2029	2034
406,618	460,782	447,585	470,951	490,669	502,010	524,118	528,100	536,100	542,500

Source: (Passaic County Office of Emergency Management 2020, U.S. Census Bureau 2020)

3.6.3 Socially Vulnerable Populations

Social vulnerability is the susceptibility of an individual or social group to the negative impacts of natural hazards and disasters due to characteristics that influence one's ability to prepare for, respond to, cope with, or recover from a disaster. These factors include financial circumstances, health, age, ability to communicate effectively, chronic or terminal illness, or an access and functional need (FEMA 2019). Historical discriminatory policies such as redlining have also placed communities of color and low-income communities at greater risk of impacts from disasters. According to FEMA's *Guide to Expanding Mitigation: Making the Connection to Equity* (2020), populations who may be disproportionately impacted by disaster include the following groups:

- Individuals experiencing homelessness or displacement
- Institutionalized populations, such as those in prisons and nursing homes, or individuals going through reentry
- Members of the LGBTQ+ community
- People of color
- Populations over the age of 65 or under the age of 5
- Populations with limited cognitive or physical abilities
- Renters
- Service workers and migrant laborers
- Tribal and first nation communities
- Underserved communities with a low socioeconomic status
- Women

Federal regulations require that hazard mitigation plans consider socially vulnerable populations. This HMP considers five socially vulnerable population groups: persons over the age of 65, persons under the age of 5, non-English speaking households, people living with disabilities, and people living below the poverty level. Table 3-5 shows statistics for these populations for each municipality in the County based on 2022 ACS 5-Year Estimates. Figure 3-11 shows the density of each population subset by census tract throughout the County.

Age

Children are vulnerable to hazard events because they are dependent on others to safely access resources during emergencies and may experience increased health risks from hazard exposure. People older than 65 are more likely to experience health or medical conditions that contribute to a lack the physical and economic resources necessary for response to hazard events, making them more likely to suffer adverse impacts that impede recovery. Older people who live alone may have more difficulty evacuating their homes. These individuals are also more likely to live in senior care and living facilities where emergency preparedness occurs at the discretion of facility operators. According to the 2022 ACS 5-Year Estimates, 33,502 people (6.4 percent of the County's population) are under the age of 5 and 78,440 people (15.1 percent of the County's total population) are over 65.

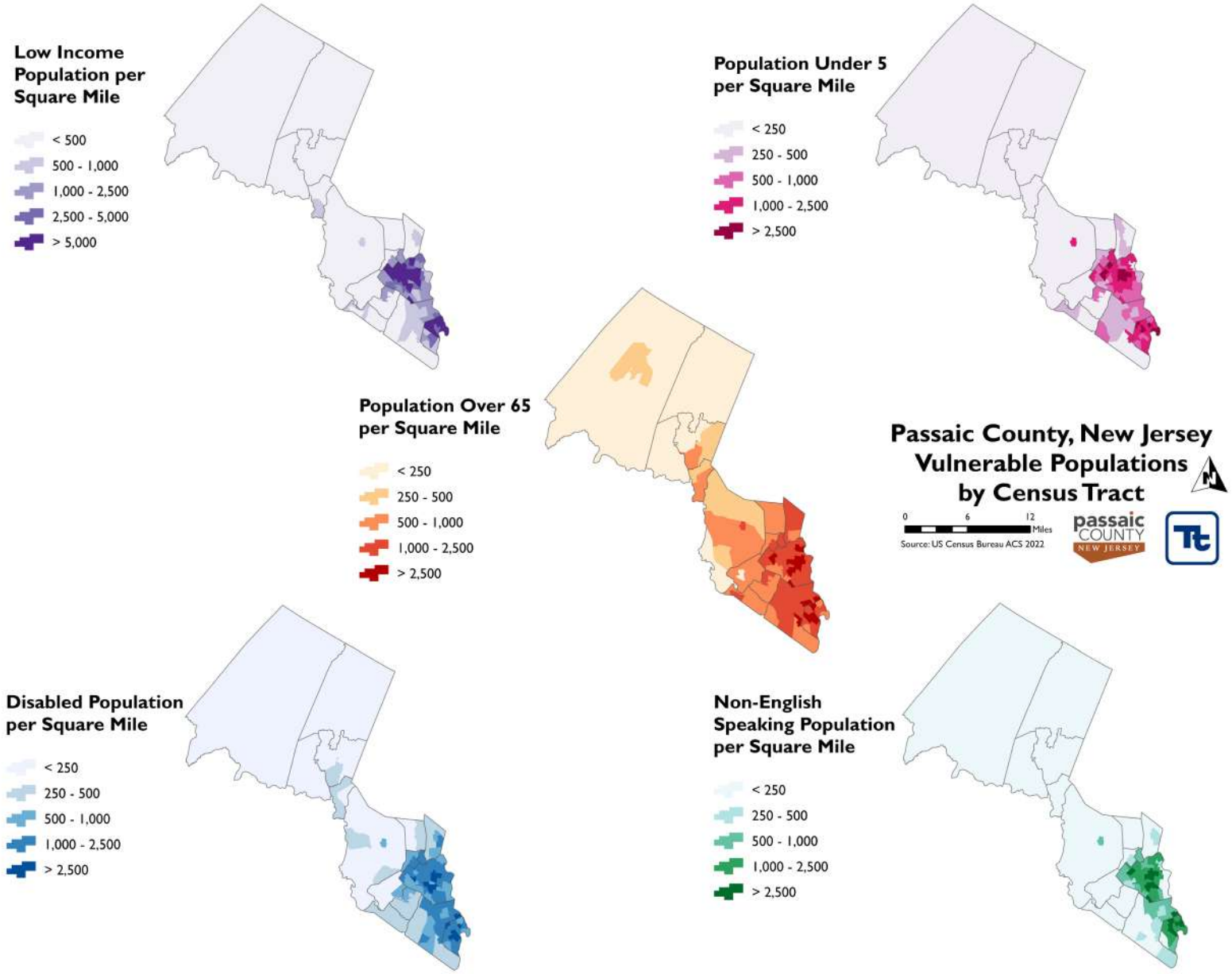
Table 3-5. Passaic County Socially Vulnerable Population

Jurisdiction	Total*	Over 65		Under 5		Non-English Speaking		Living with Disability		Living Below Poverty Level	
	Population	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total
Bloomingdale (B)	*7,726*	1,134	14.7%	247	3.2%	104	1.3%	588	7.6%	694	9.0%
Clifton (C)	*89,451*	15,686	17.5%	4,886	5.5%	10,618	11.9%	10,296	11.5%	6,444	7.2%
Haledon (B)	*8,945*	1,471	16.4%	554	6.2%	928	10.4%	1,031	11.5%	764	8.5%
Hawthorne (B)	*19,456*	4,044	20.8%	748	3.8%	902	4.6%	1,827	9.4%	950	4.9%
Little Falls (T)	*14,229*	2,189	15.4%	470	3.3%	601	4.2%	1,073	7.5%	461	3.2%
North Haledon (B)	*8,801*	2,165	24.6%	487	5.5%	199	2.3%	790	9.0%	306	3.5%
Passaic (C)	*70,048*	6,280	9.0%	5,783	8.3%	15,704	22.4%	5,489	7.8%	15,265	21.8%
Paterson (C)	*157,864*	18,141	11.5%	12,442	7.9%	34,885	22.1%	12,756	8.1%	37,143	23.5%
Pompton Lakes (B)	*11,052*	1,771	16.0%	565	5.1%	228	2.1%	799	7.2%	960	8.7%
Prospect Park (B)	*6,299*	625	9.9%	521	8.3%	714	11.3%	903	14.3%	1,080	17.1%
Ringwood (B)	*11,692*	1,997	17.1%	496	4.2%	104	0.9%	943	8.1%	262	2.2%
Totowa (B)	*10,975*	2,126	19.4%	407	3.7%	344	3.1%	1,302	11.9%	420	3.8%
Wanaque (B)	*11,217*	2,502	22.3%	464	4.1%	295	2.6%	1,486	13.2%	693	6.2%
Wayne (T)	*54,143*	10,856	20.1%	2,863	5.3%	2,009	3.7%	4,348	8.0%	1,429	2.6%
West Milford (T)	*24,797*	4,665	18.8%	1,633	6.6%	263	1.1%	1,995	8.0%	754	3.0%
Woodland Park (B)	*13,291*	2,788	21.0%	936	7.0%	1,055	7.9%	1,081	8.1%	1,370	10.3%
Passaic County	***519,986***	**78,440**	**15.1%**	**33,502**	**6.4%**	**68,953**	**13.3%**	**46,707**	**9.0%**	**68,995**	**13.3%**

**Note: Socially vulnerable population data is only available at the municipal level using the ACS 5-Year Estimates. Total population and percentages of total in this table reflect the 2022 ACS 5-Year Estimates.*

Source: (US Census Bureau 2022)

Figure 3-11. Passaic County Vulnerable Population Density



Language Proficiency

Individuals who are lack a working proficiency in English are vulnerable because they may have difficulty understanding information conveyed to them. Cultural differences can also add complexity to how information is conveyed to populations with limited proficiency of English (Centers for Disease Control and Prevention 2025). According to 2022 ACS 5-Year Estimates, 13.3 percent of residents of the County's population over the age of 5 primarily speak a language other than English at home and are reported to speak English "less than very well." Nearly half of these (47 percent) speak Spanish (U.S. Census Bureau 2022).

People Living with Disabilities

A disability is any impairment of the body or mind that makes it more difficult for the person with the condition to do certain activities and interact with the world around them (CDC 2024) Cognitive impairments can increase the level of difficulty that individuals might face during an emergency and reduce an individual's capacity to receive, process, and respond to emergency information or warnings. Individuals with a physical or sensory disability can face issues of mobility, sight, hearing, or reliance on specialized medical equipment. Additional accommodations may be necessary for individuals with disabilities and access and functional needs during the response and recovery phases of a disaster. According to the 2022 ACS 5-Year Estimates, 46,707 residents of Passaic County (9.0 percent of the County population) are living with a disability.

Income

Individuals living below the federal poverty level are more at risk of experiencing debilitating impacts from the hazards assessed in this plan because they may not have the financial means to adequately prepare, respond and recover. For example, FEMA recommends that people keep a small cash reserve in case of disaster. This can be difficult for those who struggle to afford adequate food. Insurance—such as home insurance or flood insurance—is another indicator of faster recovery from disasters for which many living in poverty may not have sufficient resources. The 2022 ACS 5-Year Estimates identified 68,995 individuals (13.3 percent of the total County population) living below the poverty level.

While the poverty threshold is typically used as a standard for identifying low-income populations, some households above the poverty threshold still struggle financially, making them socially vulnerable to hazard events. Therefore, this HMP also considers data available from United for ALICE (ALICE stands for Asset Limited, Income Constrained, Employed). This dataset identifies households with income above the federal poverty threshold but below the basic cost of living. It represents the growing number of families who are unable to afford the basics of housing, childcare, food, transportation, health care, and technology (United For ALICE 2024). Costs associated with hazard events could exceed the financial capacity of these households, making them highly vulnerable to hazard events. According to 2022 point-in-time-data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). See Table 3-6 for ALICE data by jurisdiction.

3.7 ECONOMY

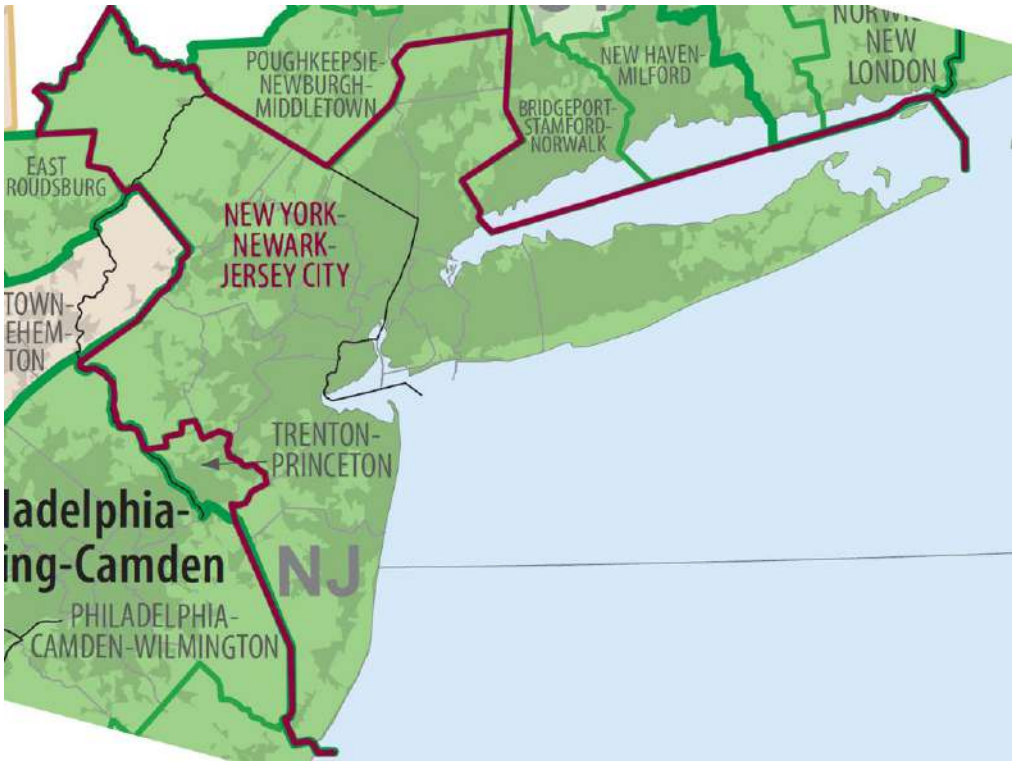
A healthy economy promotes job growth, high employment rates, and more income, all of which give residents the ability to prepare for and quickly recover from disasters when they occur. Passaic County is in the New York-Newark-Jersey City Metropolitan Statistical Area (MSA), as shown in Figure 3-12. An MSA is an area defined by the U.S. Office of Management and Budget that is linked by significant social and economic interactions and has at least one urbanized area with a population of 50,000 or more (U.S. Census 2008). The New York-Newark-Jersey City MSA is the largest in the nation, home to nearly 20 million people (U.S. Bureau of Economic Analysis 2024).

Table 3-6. Passaic County ALICE Data

Name	# of Households Below ALICE	% Below ALICE Threshold
Bloomingdale (B)	826	28%
Clifton (C)	14,035	43%
Haledon (B)	1,373	43%
Hawthorne (B)	2,579	34%
Little Falls (Twp)	1,696	30%
North Haledon (B)	745	25%
Passaic (C)	13,118	65%
Paterson (C)	33,284	67%
Pompton Lakes (B)	1,141	26%
Prospect Park (B)	1,211	64%
Ringwood (B)	936	22%
Totowa (B)	1,211	32%
Wanaque (B)	1,283	30%
Wayne (Twp)	4,727	25%
West Milford (Twp)	2,817	29%
Woodland Park (B)	2,223	42%
Passaic County	**62,752**	**35%**

Source: United For ALICE 2024

Figure 3-12. New York-Newark-Jersey City MSA



Source: (U.S. Census Bureau 2020)

3.7.1 Gross Domestic Product

Gross domestic product (GDP) is an estimate of the value of the goods and services produced in an area and can be used to compare the size and growth of a region's economy. In 2023, the New York-Newark-Jersey City MSA recorded a GDP of nearly $2.3 billion, the most of any MSA in the country and a small increase (1.6 percent) over the previous year. Between 2013 and 2023, the New York-Newark-Jersey City MSA experienced growth but at a slower rate than other metropolitan areas. The compound annual growth rate of GDP for the New York-Newark-Jersey City MSA was 1.8 percent, whereas nationally, metropolitan areas recorded 2.5 percent growth (U.S. Bureau of Economic Analysis 2024).

In 2023, Passaic County produced $27.5 million in GDP, accounting for 3.4 percent of New Jersey's total GDP and a 2 percent increase over the previous year (U.S. Bureau of Economic Analysis 2024).

3.7.2 Major Institutions

Major institutions are large organizations such as universities, hospitals, or businesses that fuel a region's economic activity, such as employment and real estate. The location of their physical assets is often tied to their function or identify and influences the immediate economy because they drive a need for housing, transportation, food, entertainment and other needs for the people that run the organizations as well as those that are served by them. Passaic County contains several universities, major hospitals, and regional employers (Passaic County Department of Planning and Economic Development n.d.):

- Institutions of higher education in the County include the following institutions:
  - ***William Paterson University*** is a public university with a 370-acre campus in the Town of Wayne. Approximately 8,500 students are enrolled. The university offers 57 undergraduate and 22 graduate programs.
  - ***Montclair State University*** is a public university with a 252-acre campus spanning three municipalities, including the City of Clifton and the Town of Little Falls in Passaic County. It has an enrollment of over 20,000 students and offers 250 undergraduate and graduate programs and certificates.
  - ***Passaic County Community College*** has several campuses across Passaic County in the Cities of Paterson and Passaic, the Borough of Wanaque, and the Township of Wayne. The College has 11,000 students and offers numerous programs.
  - ***Berkeley College*** is a private for-profit college with multiple campuses in the New York metropolitan area, including one campus in Passaic County at Garrett Mountain in the Borough of Woodland Park.
- Major healthcare centers include St. Joseph's Health in the City of Clifton, St. Joseph's Wayne Medical Center in the City of Wayne, Preakness Healthcare Center in the City of Wayne, and St. Mary's Hospital in the City of Passaic.
- Other major employers include BAE Systems, Driscoll Foods, Accurate Box Company, Maquet Cardiovascular, and UPS.

3.7.3 Employment

In 2023, Passaic County contained a quarterly average of 14,584 private businesses and employed 146,195 individuals; total wages exceeded $8.7 billion, with an average weekly wage per employee of $1,150 (Bureau of Labor Statistics 2024). Since the last plan update, Passaic County has added 1,922 establishments, a nearly 14 percent increase to 14,771 businesses, and employed an additional 5,698 workers, an increase of 3 percent to

a total of 171,394 (Bureau of Labor Statistics 2024). The following are the major employment sectors in Passaic County (see Table 3-7) (U.S. Census Bureau 2022):

- Health care and social assistance (North American Industry Classification System [NAICS] 62)
- Retail trade (NAICS 44-45)
- Manufacturing (NAICS 31-33)
- Wholesale trade (NAICS 42)
- Accommodation and food services (NAICS 72)

These five sectors collectively employ nearly two-thirds (63 percent) of all workers in Passaic County.

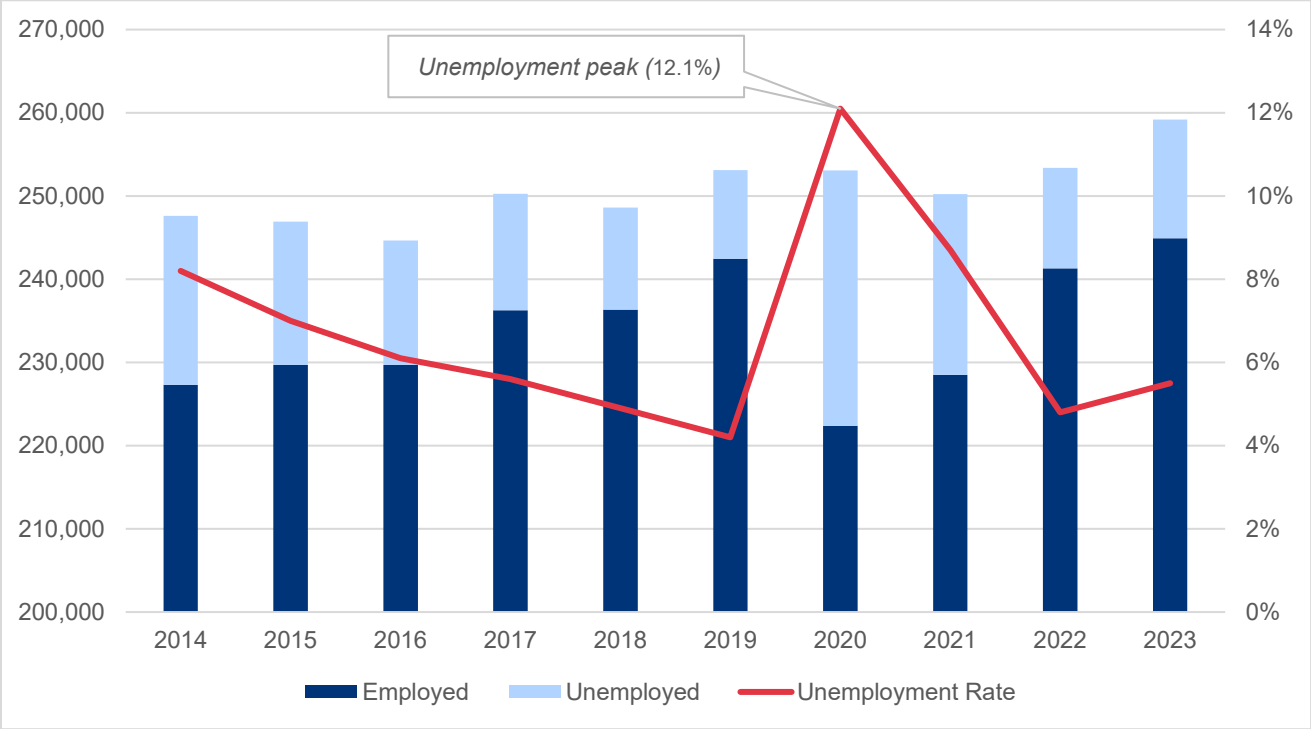
Table 3-7. Major Sectors of Employment, by NAICS Code, in Passaic County

NAICS Code	NAICS Description	Number of establishments	Number of employees	Annual payroll ($1,000)	First-quarter payroll ($1,000)
21	Mining, quarrying, and oil and gas extraction	3	111	$18,500	$6,950
22	Utilities	12	874	$112,748	$30,673
23	Construction	1,334	8,571	$679,813	$147,774
31-33	Manufacturing	611	16,887	$1,156,366	$276,363
42	Wholesale trade	804	11,775	$934,053	$235,422
44-45	Retail trade	1,866	22,709	$877,444	$197,822
48-49	Transportation and warehousing	545	7,048	$294,371	$89,114
51	Information	136	1,355	$103,921	$26,395
52	Finance and insurance	464	4,156	$437,372	$125,823
53	Real estate and rental and leasing	434	2,095	$138,967	$29,776
54	Professional, scientific, and technical services	984	6,058	$472,471	$109,208
55	Management of companies and enterprises	136	2,327	$353,484	$90,091
56	Administrative and support and waste management and remediation services	787	8,898	$491,086	$104,606
61	Educational services	145	3,188	$125,312	$30,449
62	Health care and social assistance	1,495	27,831	$1,576,303	$360,959
71	Arts, entertainment, and recreation	142	1,743	$60,628	$11,413
72	Accommodation and food services	1,085	11,230	$284,820	$63,733
81	Other services (except public administration)	1,341	7,233	$286,424	$63,480
99	Industries not classified	30	33	$1,344	$292
0	Total for all sectors	12,356	144,122	$8,405,442	$2,000,343

Source: (U.S. Census Bureau 2022)

Until the onset of the COVID-19 pandemic in 2020, unemployment had steadily fallen since 2014, hitting a low of 4.2 percent in 2019. Unemployment peaked in 2020 at 12.1 percent and remained high the next year at 8.7 percent. In recent years, employment has approximately returned to pre-pandemic levels, averaging 5.5 percent in 2023, as shown in Figure 3-13. The County sees a labor force participation rate of 66 percent.

Figure 3-13. Unemployment Rates in Passaic County 2014 to 2023



Source: (Bureau of Labor Statistics 2024)

3.7.4 Income

In 2023, the average per capita income in Passaic County was $60,002, the third lowest of all counties in New Jersey (U.S. Bureau of Economic Analysis 2024). Passaic County income is 73.1 percent of the state average ($82,102) and 86 percent of the national average ($69,810) (US Census Bureau 2023). The median household income in Passaic is $79,955, compared to the state average of $96,346. The County's poverty rate of 14 percent exceeds the state average of 10 percent.

3.7.5 Home Ownership

More than half (54.4 percent) of Passaic County residents own their home, which is nearly 10 percentage points lower than the state average of 63.7 percent (US Census Bureau 2023).

3.7.6 Economic Trends

Over the past decade, Passaic County's economy has remained relatively stable. Between 2013 and 2023, County GDP did not grow, recording a 0 percent compound annual growth rate (U.S. Bureau of Economic Analysis 2024). In that period, Passaic County experienced some income growth, but at a slower rate than the state and national averages: County incomes grew at a 3.7 percent compound annual rate, compared to 4.2 percent for the state and 4.6 percent for the nation (U.S. Bureau of Economic Analysis 2024).

The North Jersey Transportation Planning Authority (NJTPA), the metropolitan planning organization the includes Passaic County, projects continued modest growth in the region on track with the rest of the region. NJTPA projections anticipate Passaic County will experience an average 0.4 percent increase in employment every year through 2050 (NJTPA 2021).

Passaic County's 2015 CEDS notes that the County contains several commercial and industrial parks, which provide expanding companies with opportunities for growth (Passaic County Department of Planning and Economic Development 2015). The CEDS identified one action related to hazard mitigation: Action 5C aims to work regionally to reduce flooding, which included sub-tasks to reduce development in flood-prone areas.

3.8 GENERAL BUILDING STOCK

3.8.1 Existing Development

For this HMP update, 103,253 structures were identified from available tax data and spatial data. These structures account for a replacement cost value (RCV) of $95.6 billion, of which $54 billion is the value of structures and $41 billion is the value of contents. Table 3-8 presents building stock statistics for Passaic County, and Table 3-9 shows the distribution by occupancy class. Residential buildings account for 86 percent of the total buildings in the County and 48 percent of the total RCV.

Table 3-8. Building Stock Count and Replacement Cost Value in Passaic County

	Count	Structure RCV	Contents RCV	Total RCV
Bloomingdale (B)	2,406	$845,438,851	$512,824,076	$1,358,262,927
Clifton (C)	20,935	$8,953,588,853	$6,879,637,937	$15,833,226,790
Haledon (B)	1,898	$726,784,782	$550,569,877	$1,277,354,659
Hawthorne (B)	6,079	$2,301,137,115	$1,645,205,682	$3,946,342,797
Little Falls (T)	2,915	$1,910,476,344	$1,504,192,981	$3,414,669,325
North Haledon (B)	2,952	$1,356,946,842	$804,340,011	$2,161,286,853
Passaic (C)	5,784	$6,601,947,132	$4,781,219,239	$11,383,166,371
Paterson (C)	16,686	$9,755,519,226	$8,875,394,214	$18,630,913,440
Pompton Lakes (B)	3,271	$1,183,738,947	$770,521,310	$1,954,260,257
Prospect Park (B)	1,016	$301,121,711	$191,115,534	$492,237,246
Ringwood (B)	4,369	$1,659,833,795	$1,037,346,081	$2,697,179,876
Totowa (B)	3,765	$2,902,415,003	$2,597,574,014	$5,499,989,017
Wanaque (B)	3,183	$1,406,615,486	$946,276,354	$2,352,891,840
Wayne (T)	15,577	$9,179,124,328	$6,692,889,784	$15,872,014,112
West Milford (T)	9,452	$3,437,286,824	$2,185,476,654	$5,622,763,478
Woodland Park (B)	2,965	$1,788,541,435	$1,312,836,435	$3,101,377,870
Passaic County (Total)	103,253	$54,310,516,675	$41,287,420,183	$95,597,936,857

Source: NJOIT, Microsoft 2019, RS Means 2024

Table 3-9. Building Stock Count and Replacement Cost Value by Occupancy Class

	Residential		Commercial		Industrial		Other[a]	
	Count	Total RCV	Count	Total RCV	Count	Total RCV	Count	Total RCV
Bloomingdale (B)	2,080	$1,003,682,868	308	$254,235,586	3	$5,291,934	15	$95,052,539
Clifton (C)	18,295	$7,442,872,485	2,400	$5,625,214,383	123	$1,912,378,326	117	$852,761,596
Haledon (B)	1,544	$606,039,869	323	$320,482,315	13	$105,057,150	18	$245,775,326
Hawthorne (B)	5,086	$2,253,250,678	918	$1,039,713,043	53	$475,358,294	22	$178,020,782
Little Falls (T)	2,413	$1,589,328,556	438	$1,070,632,102	32	$296,631,941	32	$458,076,726
North Haledon (B)	2,587	$1,662,589,688	350	$350,146,789	1	$1,891,098	14	$146,659,278
Passaic (C)	4,793	$5,837,028,985	819	$3,969,982,088	31	$616,037,682	141	$960,117,616
Paterson (C)	13,239	$5,590,973,425	2,882	$6,939,139,877	273	$4,100,101,789	292	$2,000,698,349
Pompton Lakes (B)	2,882	$1,287,390,437	352	$448,064,420	18	$51,717,768	19	$167,087,632
Prospect Park (B)	897	$335,118,971	111	$100,553,619	1	$8,500,733	7	$48,063,922
Ringwood (B)	3,993	$1,954,768,014	324	$439,269,971	19	$110,359,636	33	$192,782,255
Totowa (B)	3,164	$1,648,736,373	533	$2,502,634,194	48	$1,205,946,642	20	$142,671,808
Wanaque (B)	2,745	$1,489,029,587	393	$435,321,472	21	$162,934,346	24	$265,606,435
Wayne (T)	14,046	$8,470,872,138	1,378	$4,751,066,029	59	$1,295,196,512	94	$1,354,879,433
West Milford (T)	8,100	$3,854,727,812	1,157	$1,048,854,435	29	$120,264,119	166	$598,917,112
Woodland Park (B)	2,567	$1,575,837,173	369	$1,188,965,354	14	$192,427,765	15	$144,147,578
Passaic County (Total)	88,431	$46,602,247,059	13,055	$30,484,275,677	738	$10,660,095,735	1,029	$7,851,318,386

Source: NJOIT, Microsoft 2019, RS Means 2024

a. Other = Government, Religion, Agricultural, and Education

Figure 3-14, Figure 3-15, and Figure 3-16 show the distribution and value density of residential, commercial, and industrial buildings in Passaic County based on the New Jersey Property Tax System. Value density is the dollar value of structures per unit area, including building content value. The densities are shown in units of $1,000 per square mile. Value distribution maps can assist communities in visualizing areas of high loss potential and in evaluating aspects of the study area in relation to specific hazard risks.

3.8.2 New Development

New development that has occurred in the last five years and potential future development in the next five years has been identified by each municipality. An exposure analysis was conducted to determine the relationship between the identified potential new development and natural hazard areas evaluated in the HMP update. The results of this spatial analysis have been reviewed with each jurisdiction and are documented in each jurisdiction annex. In addition, the summary of this analysis and hazard-specific maps are included at the end of the vulnerability assessment provided in each hazard profile chapter in this volume.

Since 2020, Passaic County municipalities have issued permits authorizing the construction of 3,177 new housing units, as summarized in Table 3-10 (New Jersey Department of Community Affairs 2024). Permit issuance peaked in 2020 but fell off in the years following the COVID-19 pandemic. The City of Paterson authorized the creation of 1,664 units, the most of any municipality. Several municipalities did not issue any permits for new construction of housing between 2020 and 2023, including the Borough of Haledon, the Borough of Prospect Park, the Town of Wayne, and the Borough of Woodland Park. In 2023, the most recent year with complete data, municipalities issued new construction permits to enable 578 new housing units to be built.

Table 3-10. Housing Units Authorized by Building Permits for New Construction in Passaic County

Jurisdiction	2020	2021	2022	2023
Bloomingdale (B)	5	3	2	3
Clifton (C)	20	9	313	3
Haledon (B)	0	0	0	0
Hawthorne (B)	35	120	6	2
Little Falls (T)	215	54	112	2
North Haledon (B)	180	0	0	0
Passaic (C)	60	43	0	81
Paterson (C)	489	483	322	390
Pompton Lakes (B)	0	7	0	3
Prospect Park (B)	0	0	0	0
Ringwood (B)	1	5	5	1
Totowa (B)	1	0	50	77
Wanaque (B)	0	18	2	2
Wayne (T)	0	0	0	0
West Milford (T)	10	14	15	14
Woodland Park (B)	0	0	0	0
Passaic County (Total)	1,016	756	827	578

Source: (New Jersey Department of Community Affairs 2024)

Figure 3-14. Distribution of Residential Building Stock Value Density in Passaic County

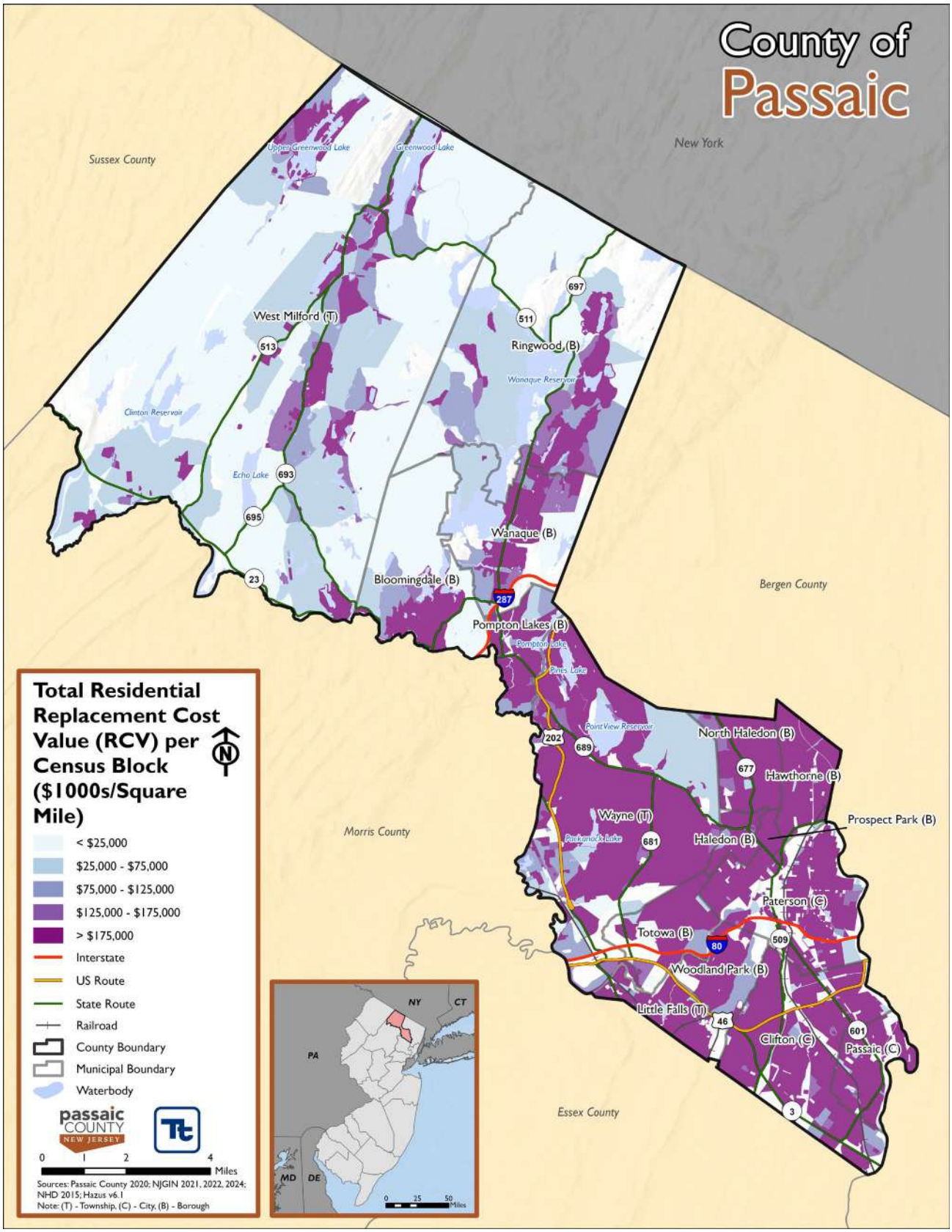


Figure 3-15. Distribution of Commercial Building Stock Value Density in Passaic County

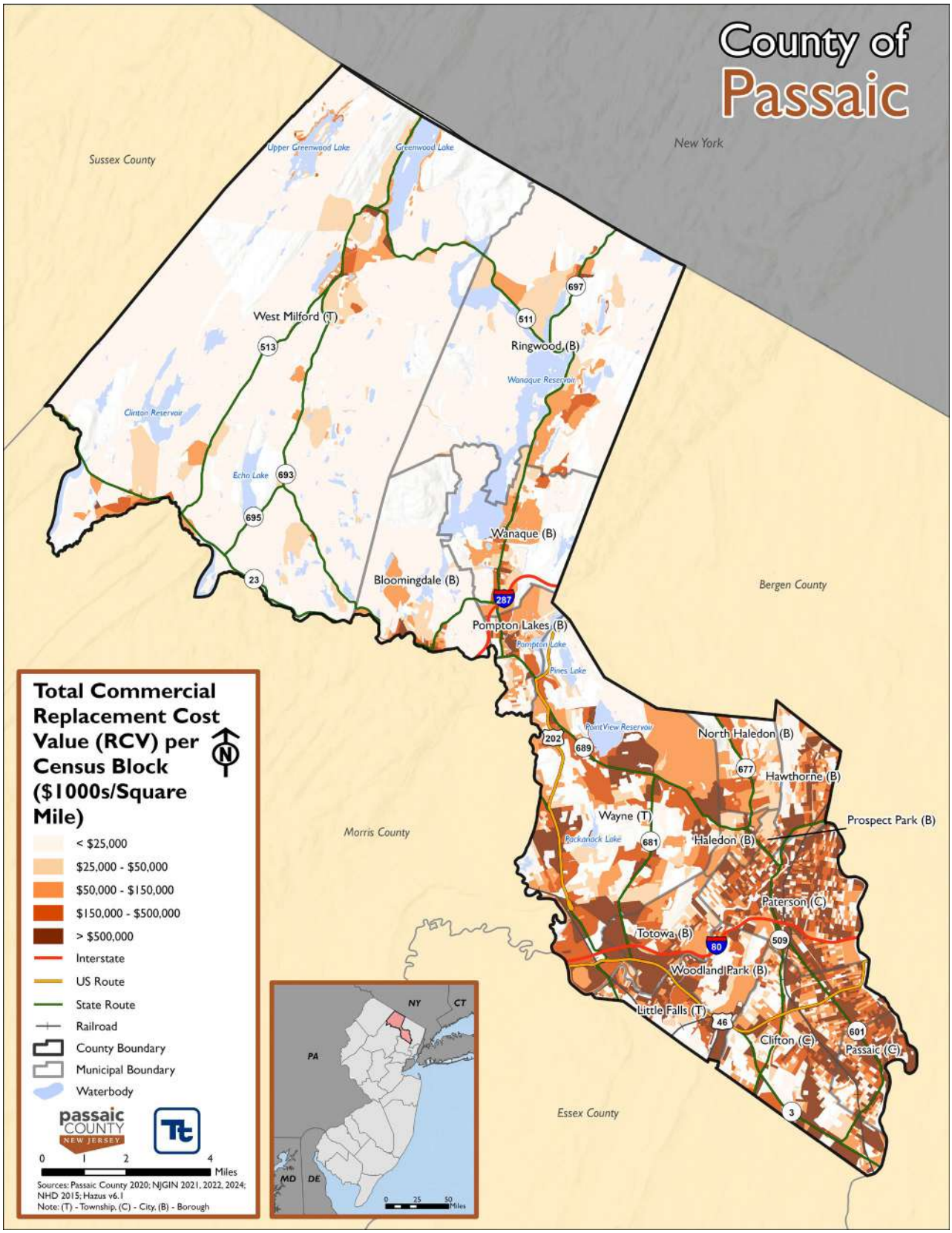
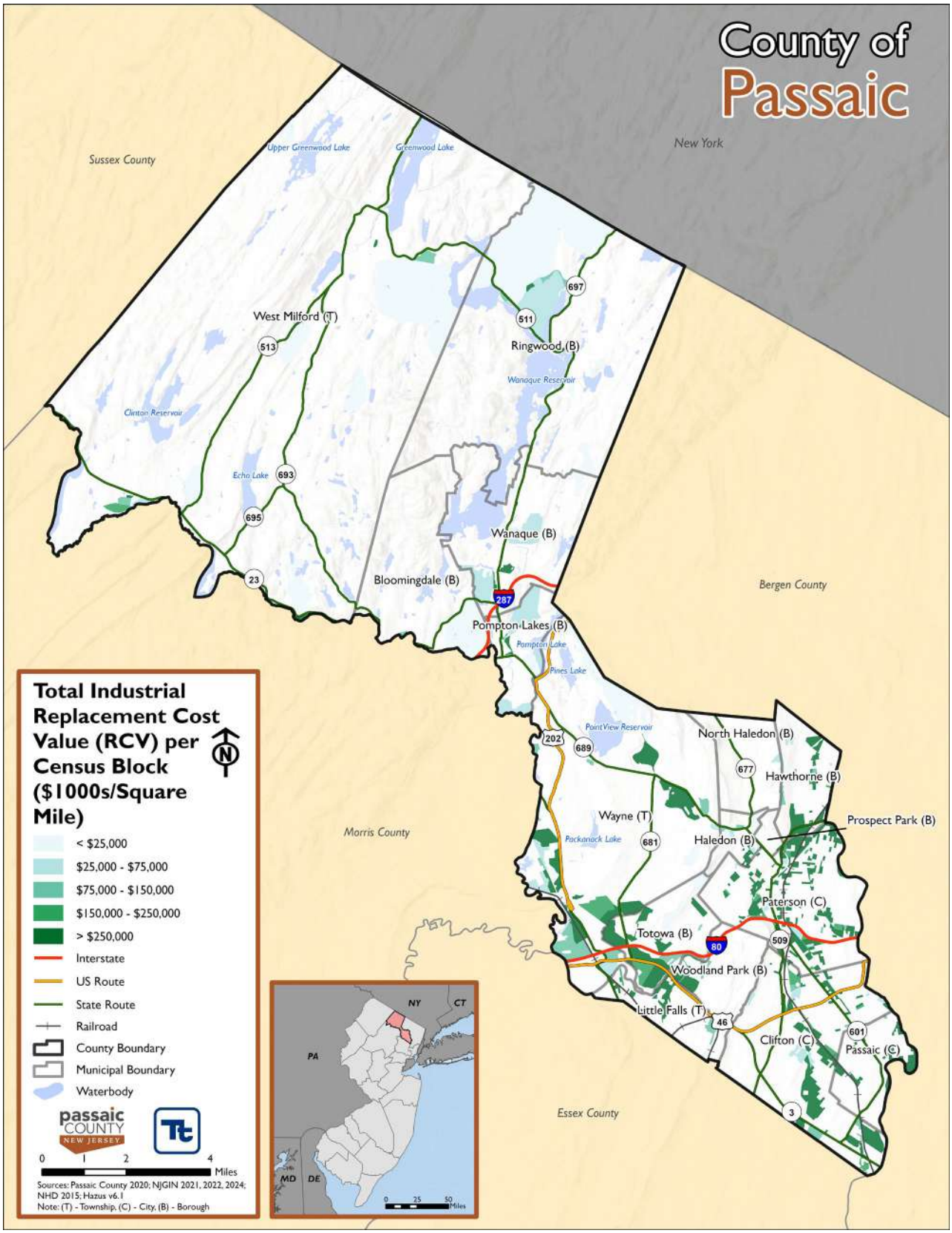


Figure 3-16. Distribution of Industrial Building Stock Value Density in Passaic County



3.9 COMMUNITY LIFELINES

Facilities that are essential to the health and welfare of the population and that maintain essential and emergency functions are designated as critical facilities. These typically include police and fire stations, schools, emergency operations centers, and infrastructure such as roads, bridges and utilities that provide water, electricity, and communications. Facilities that use or store hazardous materials are designated as critical facilities as well. All of these facilities are especially important after any hazard event (FEMA 1997).

FEMA defines some types of critical facilities, as well as public services or activities, as "community lifelines." Community lifelines provide the fundamental services in a community that, when stabilized, enable all other aspects of society. Following a disaster event, intervention is required to stabilize lifelines. FEMA defines eight categories of community lifelines as summarized in Table 3-11.

Table 3-11. FEMA-Defined Categories of Community Lifelines

Community Lifeline Category		Types of Facilities and Services Included
	**Safety and security**	Law enforcement/security, fire service, search and rescue, government service, community safety
	**Food, hydration, shelter**	Food, hydration, shelter, agriculture
	**Health and medical**	Medical care, public health, patient movement, medical supply chain, fatality management
	**Energy**	Power grid, fuel
	**Communications**	Infrastructure, responder communications, alerts warnings and messages, finance, 911 and dispatch
	**Transportation**	Highway/roadway/motor vehicle, mass transit, railway, aviation, maritime
	**Hazardous materials**	Facilities, hazmat, pollutants, contaminants
	**Water systems**	Potable water infrastructure, wastewater management

A comprehensive inventory of community lifelines in Passaic County was developed from various sources, including input from the Steering Committee and Planning Partnership. The following sections describe the inventory of community lifelines that was used for the risk assessment in this HMP. Although many lifeline facilities could fall within numerous categories, the lifeline facilities identified for this planning effort have been categorized according to their primary function.

3.9.1 Safety and Security

Table 3-12 lists safety and security community lifelines by facility type, and Figure 3-17 shows the location of these facilities in Passaic County. The sections below generally describe the assets in this category.

Table 3-12. Safety and Security Community Lifelines in Passaic County

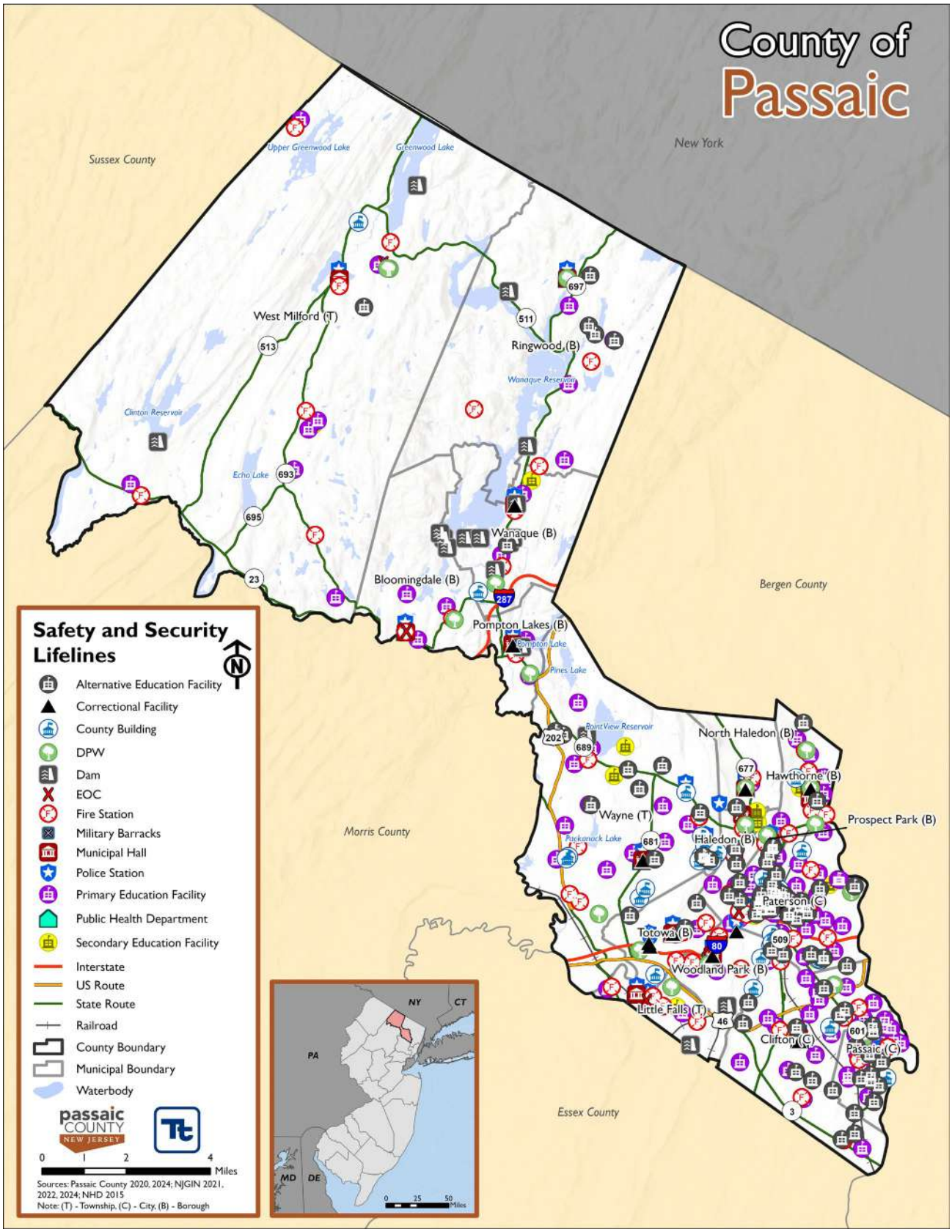
Facility Type	Number of Facilities
Alternative Education Facility	95
Correctional Facility	17
County Building	49
Dam	18
DPW	24
EOC	17
Fire Station	62
Military Barracks	1
Municipal Hall	18
Police Station	26
Post-Secondary Education Facility	3
Primary Education Facility	111
Public Health Department	16
Secondary Education Facility	20
Total Safety and Security Facilities	477

Government Services and Emergency Facilities

County and municipal buildings and public works facilities are essential to the continuity of operations before, during, and after disasters. Each municipality is responsible for maintaining its own police department, fire department, and emergency operations center (EOC).

Passaic County has a highly coordinated and interconnected network of emergency facilities and services at the County and municipal level. The County Office of Emergency Management (OEM) serves as the primary coordinating agency between local, state, and federal agencies. In response to an emergency event, the Passaic County OEM will work with county and municipal health agencies and healthcare providers, emergency facilities and the County Sheriff's Office to provide aid to residents of the county.

Figure 3-17. Safety and Security Facilities in Passaic County



Schools

More than 200 schools, ranging from elementary to post-secondary education, service the County. Schools can function as shelters in times of needs and are important resource for the community.

Dams and Levees

Table 3-13 lists the number of dams in Passaic County by hazard class, as identified by the State of New Jersey.

Table 3-13. Dams by Hazard Classification in Passaic County

Hazard Ranking	Number of Dams
High	50
Significant	22
Low	62
Total	**134**

Source: (NJOEM 2024)

3.9.2 Food, Hydration, Shelter

Table 3-14 lists food, hydration, and shelter community lifelines by facility type, and Figure 3-18 shows the location of these facilities in Passaic County. The sections below generally describe the assets in this category.

Table 3-14. Food, Hydration, Shelter Community Lifelines in Passaic County

Facility Type	Number of Facilities
Emergency Housing	18
Total Food, Hydration, Shelter Facilities	18

Emergency Housing

There are 18 emergency housing facilities in the County, including schools, community centers, and municipal buildings—16 are in the City of Paterson, one in the City of Clifton, and one in the Town of West Milford.

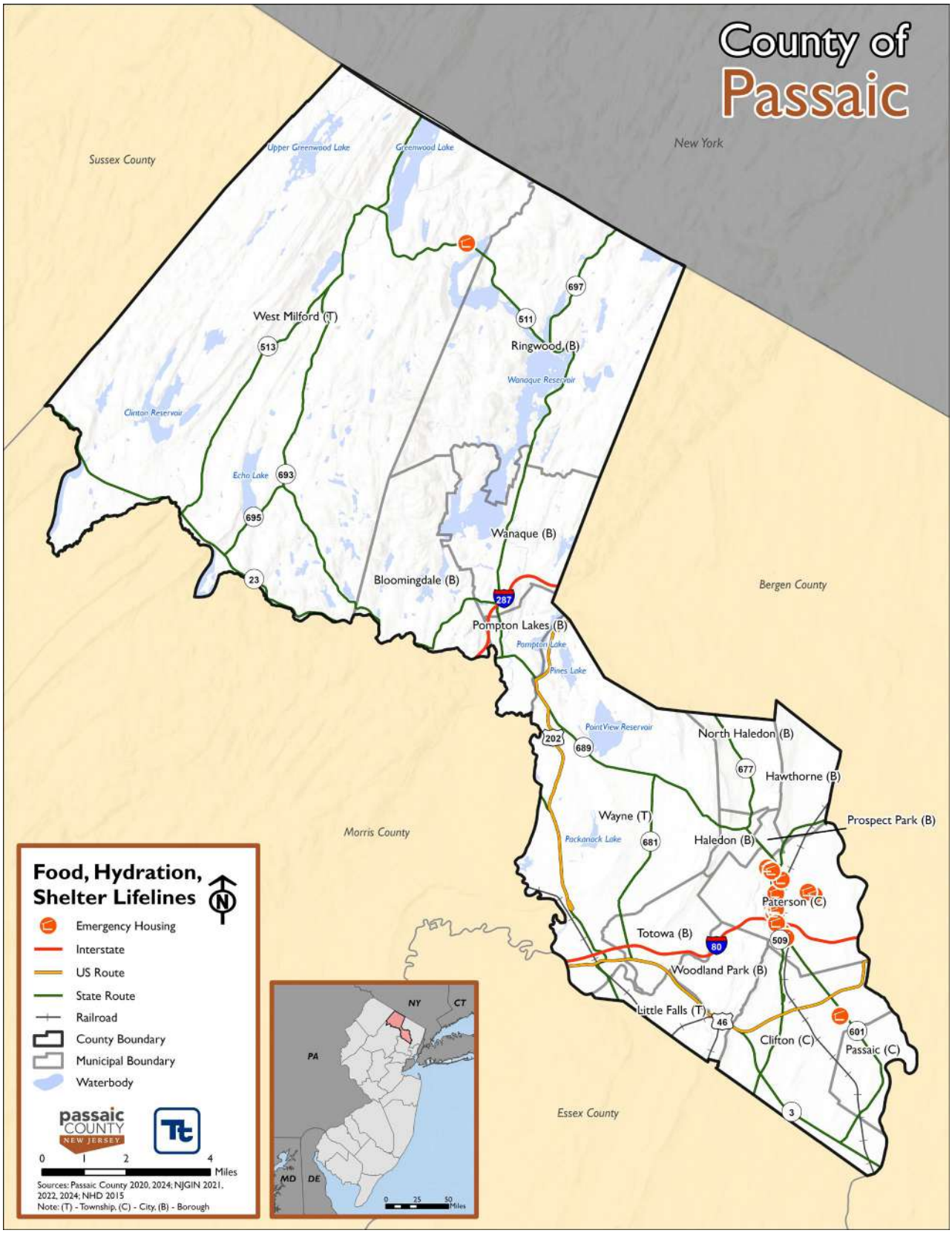
Socially Vulnerable Populations and Undeserved Community Support Facilities

Passaic County Department of Human Services is the key agency in the planning area that provides support to socially vulnerable and historically underserved residents. Its services include a “211” hotline for social service referrals and information, homeless prevention and housing, mental health and addiction treatment, mortgage and foreclosure counseling, rental and utility assistance, and at-risk youth programs.

Additionally, Passaic County has a Safe Stable Sheltering and Housing Task Force as part of its Impact Passaic initiative to address the region’s housing insecurity. The 2020 Passaic Needs Assessment identified housing affordability and poverty as a key obstacle faced by many residents (Passaic County Department of Human Services 2020).

Several non-governmental organizations actively provide supplementary services to those provided by the county, including the United Way of Passaic County, Catholic Charities Diocese of Paterson, Eva’s Village, Boys & Girls Club of Paterson and Passaic, Harbor House, and Turning Point.

Figure 3-18. Food, Hydration, and Shelter Facilities in Passaic County



3.9.3 Health and Medical

Table 3-15 lists health and medical community lifelines by facility type, and Figure 3-19 displays the location of these facilities in Passaic County. The sections below generally describe the assets in this category.

Table 3-15. Health and Medical Community Lifelines in Passaic County

Facility Type	Number of Facilities
Addiction Treatment Center	26
EMS	45
Hospital	2
Long Term Care and Rehab Center	1
Medical Facility	11
Pharmacy	54
Senior Care Facility	37
Urgent Care	5
Total Health and Medical Facilities	181

Hospitals and Medical Facilities

The three major healthcare facilities in Passaic County are St. Joseph's Regional Medical Center in the City of Paterson, St. Joseph's Hospital (Kindred Hospital) in Wayne Township, and Saint Mary's General Hospital in the City of Passaic.

There are 54 pharmacies, 26 addiction treatment centers, 11 medical facilities, five urgent care facilities, and one long-term care and rehabilitation center in Passaic County.

EMS Facilities

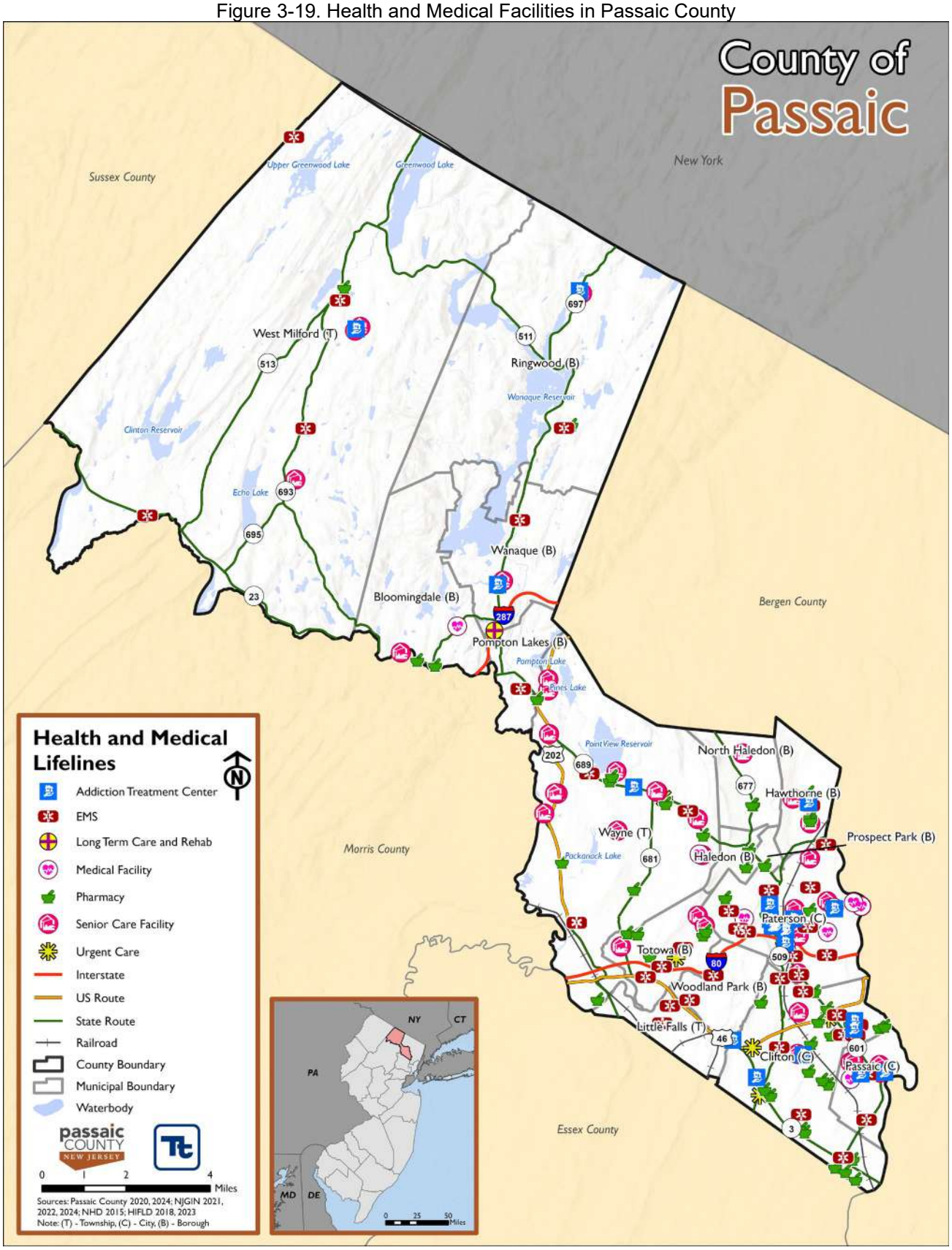
Most municipalities have at least one EMS facility within their jurisdiction. The City of Paterson contains 12 EMS facilities, and the City of Clifton contains eight.

The Boroughs of Bloomingdale, Haledon, and Prospect Park do not have their own EMS facilities. The Borough of Bloomingdale utilizes the Tri-Boro First-Aid Squad located in Butler. The Boroughs of Haledon and Prospect utilize the City of Paterson's EMS.

Senior Care and Living Facilities

There are 37 senior care facilities in the County. Residents may require additional support during hazard events, such as mobility assistance to evacuate or move to a safe location or backup generators to provide consistent power for medical equipment.

Figure 3-19. Health and Medical Facilities in Passaic County



3.9.4 Energy

Table 3-16 lists energy community lifelines by facility type, and Figure 3-20 displays the location of these facilities in Passaic County. Public Service Electric and Gas (PSE&G) is the primary electric and gas utility company in Passaic County with Jersey Central Power and Light (JCP&L) and Orange & Rockland also providing electricity to the communities. Table 3-17 identifies the electric service providers to the municipalities of Passaic County.

Table 3-16. Energy Community Lifelines in Passaic County

Facility Type	Number of Facilities
Electric Substation	15
Natural Gas Facility	1
Power Plant	4
Total Energy Facilities	20

Table 3-17. Utility Providers in Passaic County

Provider	Service	Service Areas
Algonquin Gas Transmission	Natural Gas	Bloomingdale, Pompton Lakes, and Wanaque
Butler Electric	Electric	Bloomingdale and West Milford
First Energy Corp./JCP&L	Electric	Bloomingdale, Pompton Lakes, Ringwood, Wanaque, Wayne, and West Milford
Orange & Rockland	Electric	West Milford and Ringwood
PSE&G	Electric	Clifton, Haledon, Hawthorne, Little Falls, North Haledon, Passaic, Paterson, Pompton Lakes, Prospect Park, Totowa, Wayne, and West Paterson
	Natural Gas	Countywide
Tennessee Gas Transmission Pipeline	Natural Gas	Ringwood and West Milford
Texas Eastern Gas Pipeline	Natural Gas	Bloomingdale, Pompton Lakes, and Wanaque
Transcontinental Gas Pipeline (Transco Energy)	Natural Gas	Clifton and Little Falls

Source: (Passaic County Board of County Commissioners 2023, Passaic County Office of Emergency Management 2020)

3.9.5 Communications

Table 3-18 lists the communications community lifelines by facility type, and Figure 3-21 displays the location of communications facilities in Passaic County. Passaic County has a network of communication facilities such as utility towers, communication towers, stations, radio towers and cell towers. These facilities are controlled by both public and private institutions. Telecommunication providers in Passaic County include AT&T, Optimum, Sprint, and Verizon New Jersey (Passaic County Board of County Commissioners 2023).

Table 3-18. Communications Community Lifelines in Passaic County

Facility Type	Number of Facilities
Communication Facility	10
Communication Tower	4
Total Communications Facilities	14

Figure 3-20. Energy Facilities in Passaic County

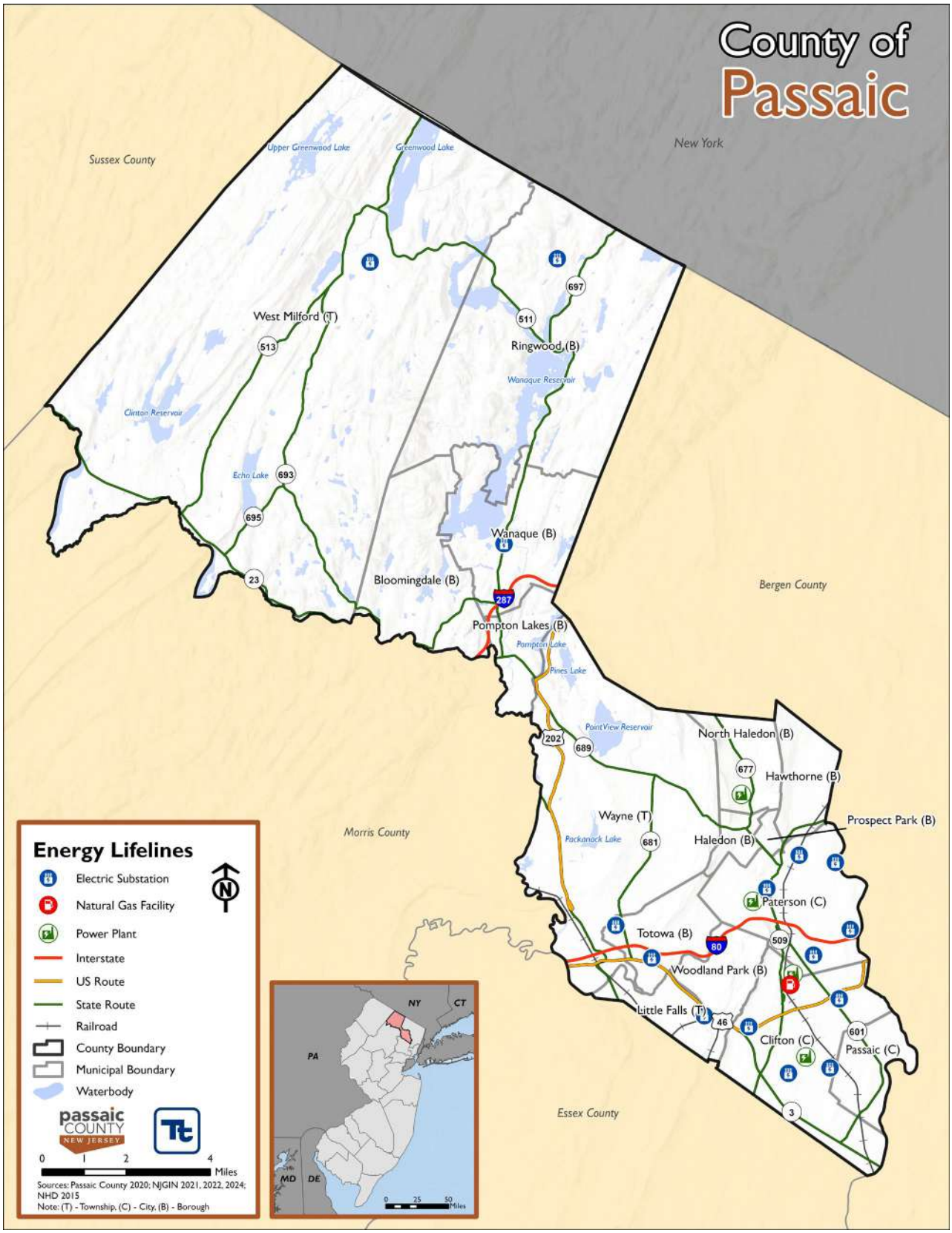
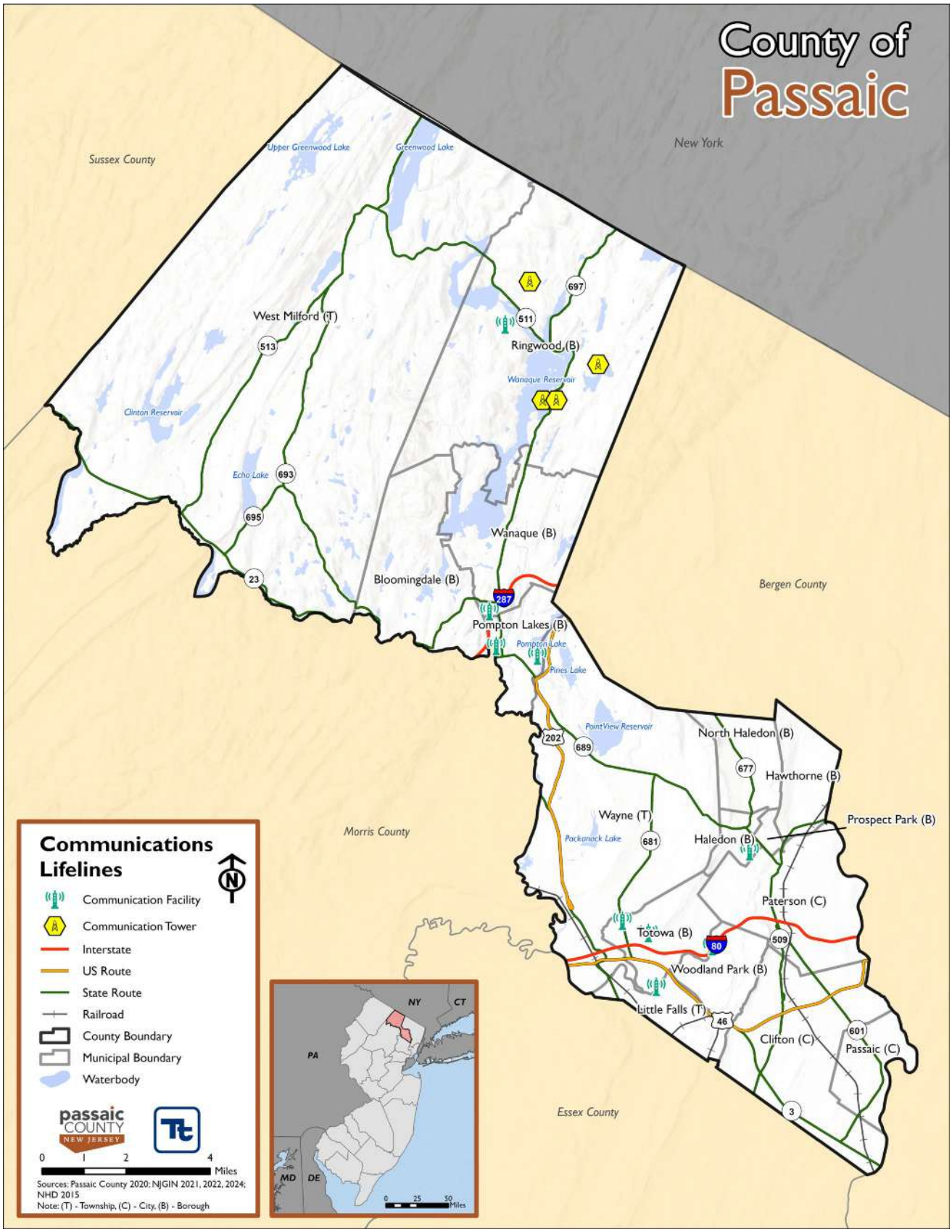


Figure 3-21. Communications Facilities in Passaic County



3.9.6 Transportation

Table 3-19 lists transportation facilities by type, and Figure 3-22 displays the location of these assets in Passaic County. The County's transportation system includes automobile, bus, freight, passenger train, and air. The County is 11 miles from the George Washington Bridge, 13 miles from the Lincoln Tunnel, and 17 miles from the Holland Tunnel. It is at the crossroads of several of New Jersey's major highways (Routes 80, 287, 3, 20, 21, 23, 46, the Garden State Parkway, and the New Jersey Turnpike), which link the County to New York, Pennsylvania, and Connecticut. The County's location provides ready accessibility to three international airports (Newark Liberty, LaGuardia, and John F. Kennedy Airports) along with major international shipping ports (Port Newark and the Elizabeth Marine Terminal). Major freight rail service includes Norfolk Southern and New York, Susquehanna and Western. New Jersey Transit provides passenger rail services.

Table 3-19. Transportation Community Lifelines in Passaic County

Facility Type	Number of Facilities
Airport	5
Bridge	134
Bus Facility	19
Train Station	17
Total Transportation Facilities	175

3.9.7 Hazardous Materials

Table 3-20 lists the hazardous materials community lifelines by facility type, and Figure 3-23 displays the location of these facilities in Passaic County. The sections below generally describe the assets in this category.

Table 3-20. Hazardous Materials Community Lifelines in Passaic County

Facility Type	Number of Facilities
Chemical Storage	10
Hazardous Waste Facility	11
Total Hazardous Materials Facilities	21

Superfund Sites

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) enables the federal government to respond to hazardous material releases, including cleanup of inactive yet still polluted hazardous material sites, referred to as "Superfund" sites.

The U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation and Liability Information System reports that there is one Superfund site that is on the federal National Priorities List in Passaic County. Abandoned hazardous waste sites on the National Priorities List include those that the EPA has determined present a significant risk to human health or the environment. These sites are eligible for remediation under the Superfund Trust Fund Program. The Passaic County site is a historic iron mining site, including mine shafts, pits, landfills, and open waste dumps, located in the Borough of Ringwood (EPA n.d.). Another site, W.R. Grace & Co., Inc./Wayne Interim Storage in the Township of Wayne, was previously listed on the National Priorities List but was removed from the list in 2012 upon the completion of long-term remediation actions (EPA n.d.).

Figure 3-22. Transportation Facilities in Passaic County

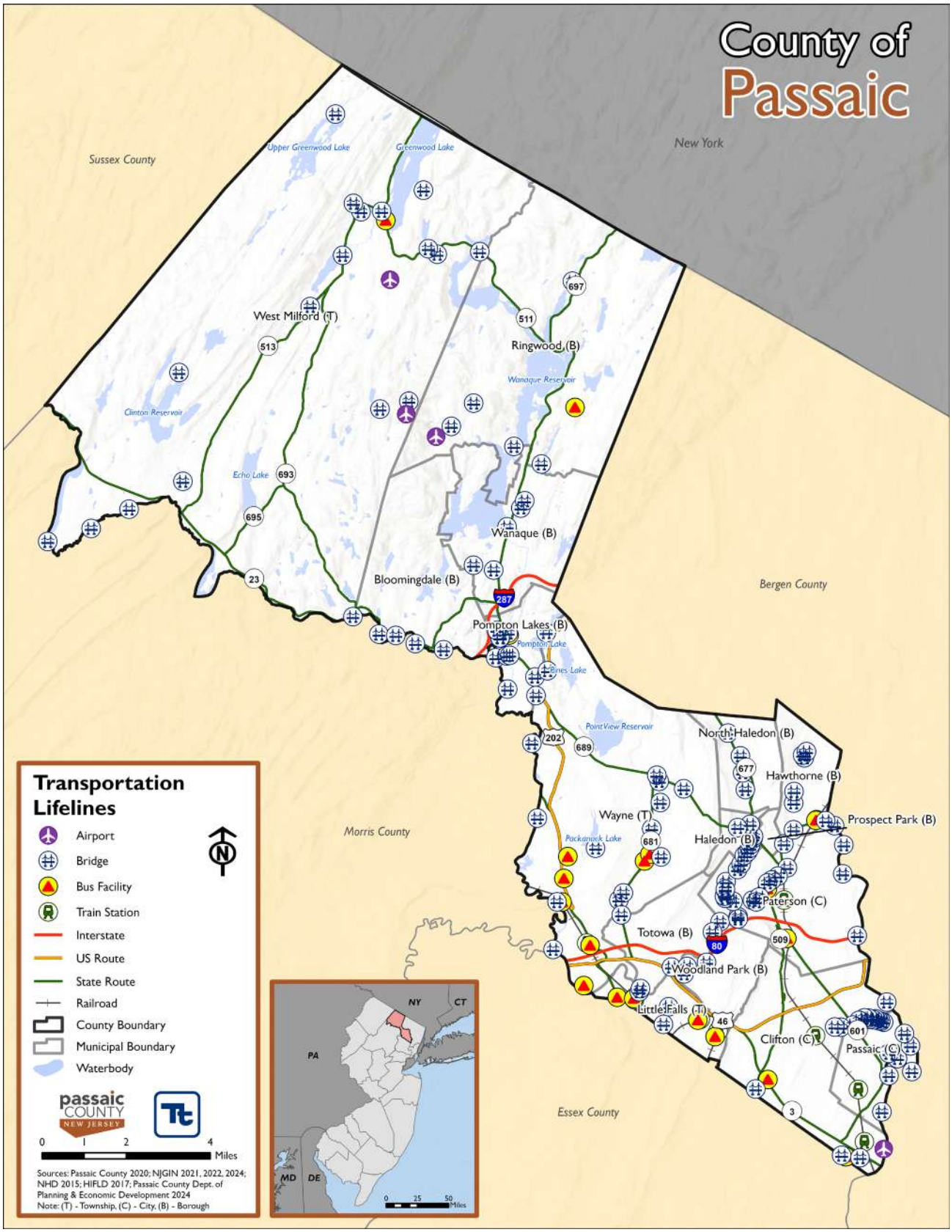
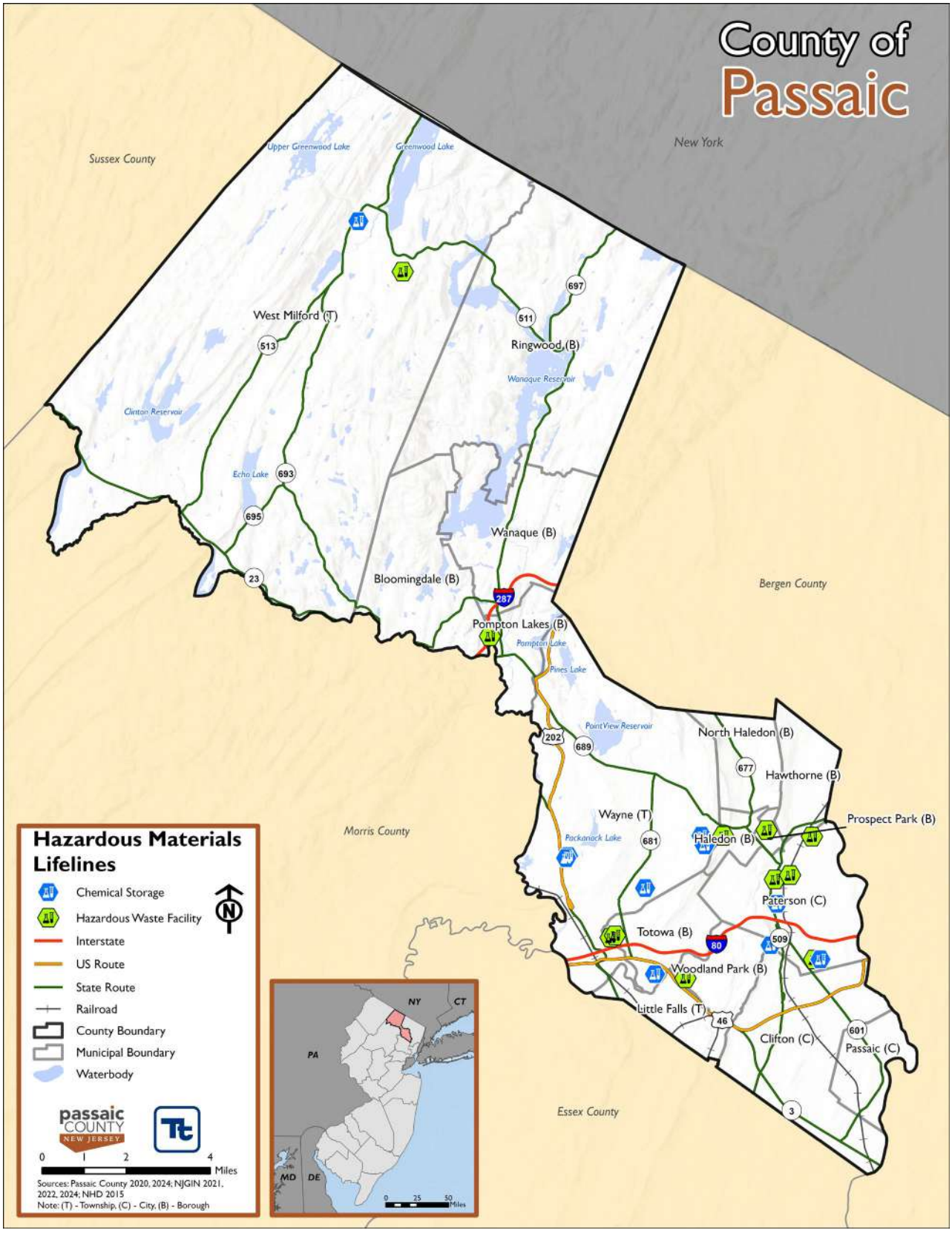


Figure 3-23. Hazardous Materials Facilities in Passaic County



Toxic Release Inventory

The EPA 2023 Toxics Release Inventory (TRI) database indicates there are 20 TRI facilities in Passaic County. TRI facilities are those required to report on chemical storage and use based on volumes of specified chemicals stored and used (EPA 2023).

3.9.8 Water Systems

Table 3-21 lists water system community lifelines by facility type, and Figure 3-24 displays the location of these facilities in Passaic County. The sections below generally describe the assets in this category.

Table 3-21. Water Systems Community Lifelines in Passaic County

Facility Type	Number of Facilities
Potable Water Pump Station	22
Potable Water Treatment Facility	10
Wastewater Pump Station	30
Wastewater Treatment Facility	7
Water Tank	10
Water Tower	1
Water Utility Building	1
Well	80
Total Water Systems Facilities	161

Potable Water

Water suppliers in Passaic County include the following (Passaic County Board of County Commissioners 2023):

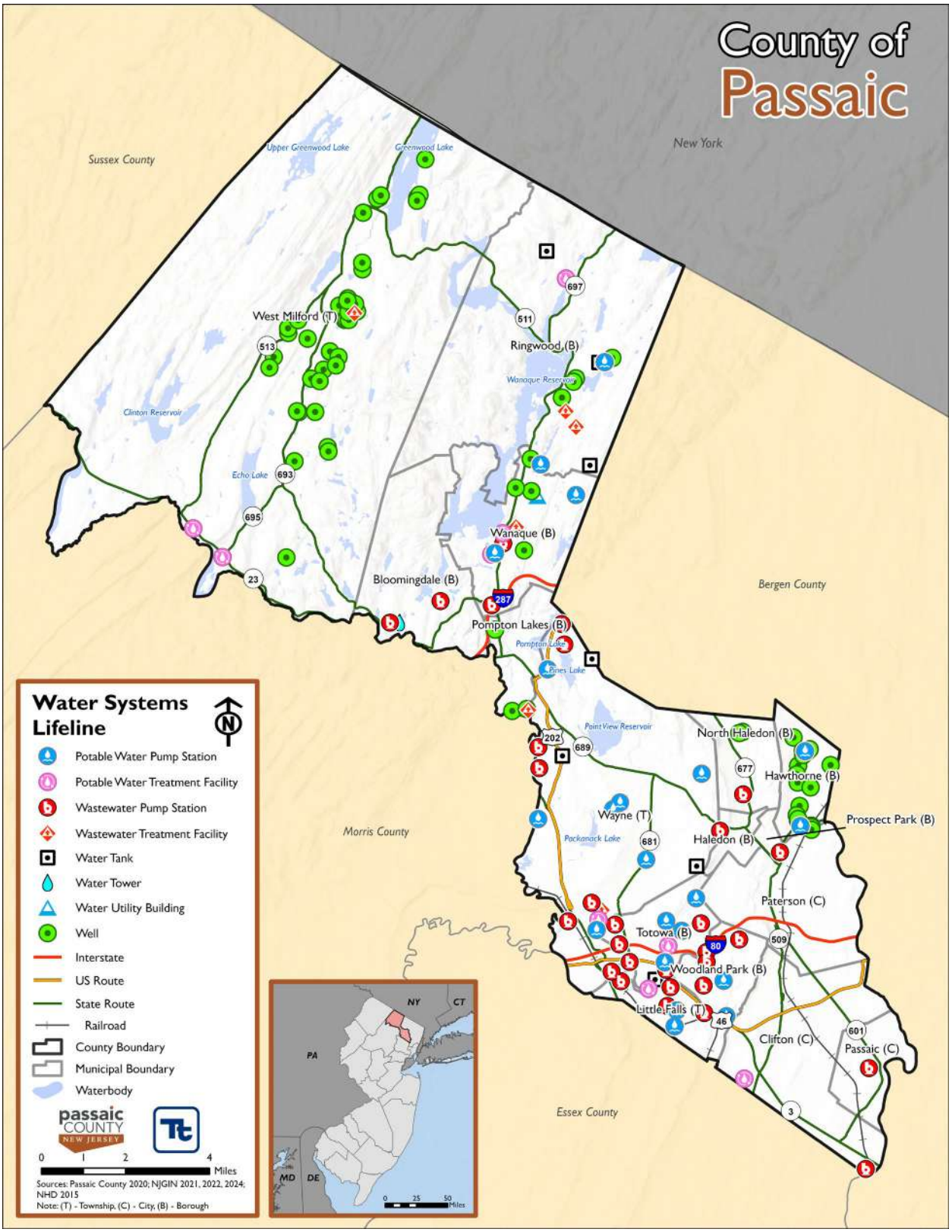
- Bloomingdale Water and Sewer
- Hawthorne Water Department
- American Water Resources
- North Jersey District Water Supply Commission
- Passaic Valley Water Commission
- Pompton Lakes Municipal Utilities Association
- Ringwood Water Department
- Totowa Water Department
- Wanaque Water Department
- Wayne Township Division of Water and Sewer
- West Milford Water and Sewer (SUEZ North America)
- Woodland Park Water Company

The northern region of Passaic County contains a large area of lakes and reservoirs, including the Wanaque and Monksville Reservoir, that provide water for communities. In addition, many communities rely on well water and private service providers, which includes the Passaic Valley Water Commission and United Water. Passaic County contains 22 potable water pump stations, 10 potable water treatment facilities, and 80 wells.

Wastewater Facilities

Several communities in the County provide public wastewater services, while others rely on private providers for wastewater treatment, including the Passaic Valley Sewerage Commission, Wanaque Valley Regional Sewerage Authority and Wayne Township Division of Water and Sewer (Passaic County Board of County Commissioners 2023). There are seven wastewater treatment facilities and 30 wastewater pump stations in Passaic County.

Figure 3-24. Water Systems Facilities in Passaic County



3.9.9 Other Critical Facilities

Some facilities that are identified as critical for hazard mitigation in Passaic County do not fit in any of FEMA's community lifeline categories. Table 3-22 lists these facilities by type, and Figure 3-25 displays the locations in Passaic County.

Table 3-22. Other Critical Facilities in Passaic County

Facility Type	Number of Facilities
Daycare	240
Library	3
Major Employer	19
Museum	1
Senior Center	1
Total Facilities	264

3.9.10 Critical Facilities by Jurisdiction

Table 3-23 lists all community lifelines and other critical facilities identified in the asset inventory for this HMP by category and jurisdiction.

Figure 3-25. Other Critical Facilities in Passaic County

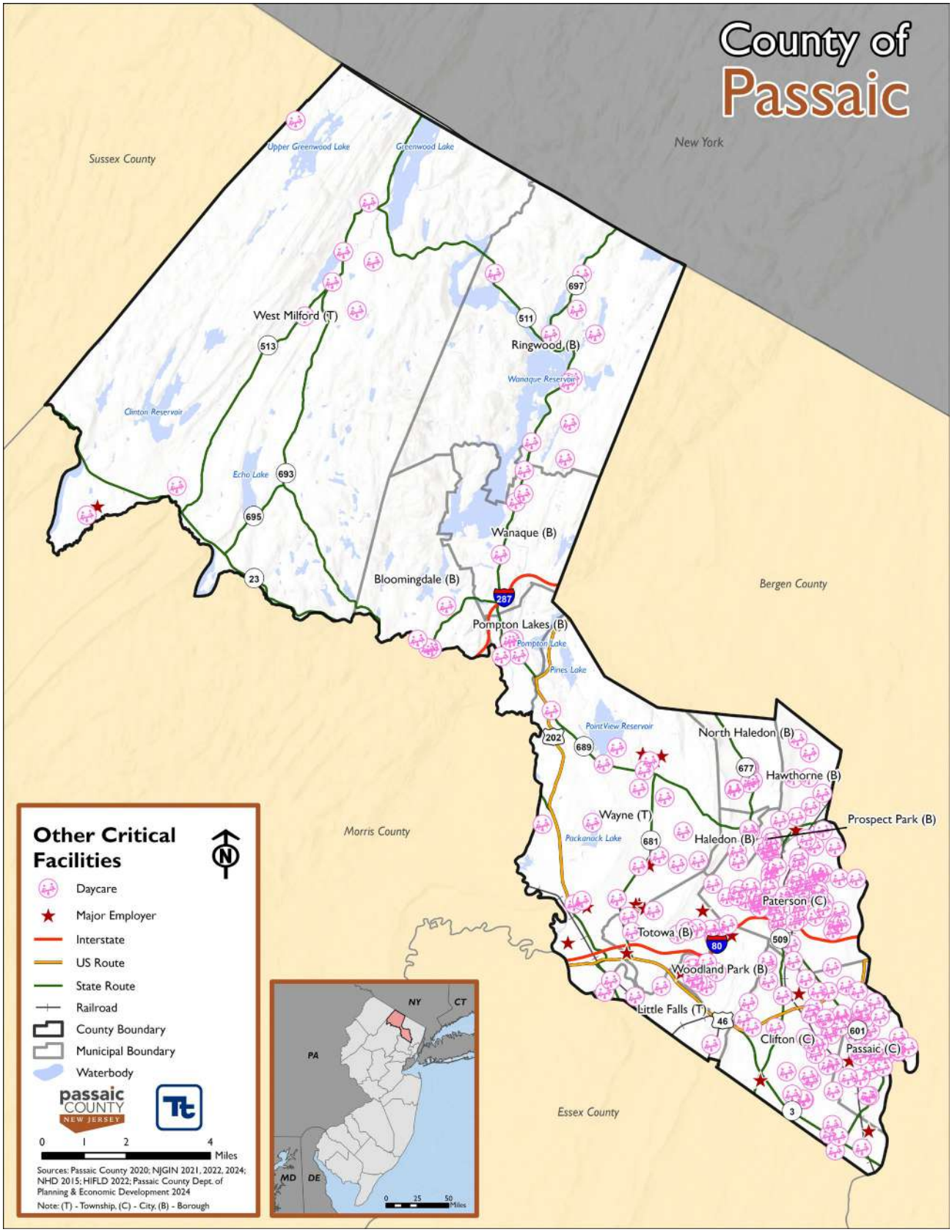


Table 3-23. Inventoried Critical Facilities by Jurisdiction

Jurisdiction	Number of Facilities in Jurisdiction									
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	**Total**
Bloomingdale (B)	0	0	0	0	4	13	4	3	4	**28**
Clifton (C)	0	7	1	0	41	45	20	2	52	**168**
Haledon (B)	1	0	0	1	2	13	9	1	3	**30**
Hawthorne (B)	0	0	0	0	8	26	9	24	11	**78**
Little Falls (T)	1	1	0	0	4	16	13	7	5	**47**
North Haledon (B)	0	1	0	0	3	13	4	3	7	**31**
Passaic (C)	0	0	0	0	10	41	13	1	28	**93**
Paterson (C)	0	6	16	7	43	120	24	1	71	**288**
Pompton Lakes (B)	3	0	0	1	1	12	11	4	4	**36**
Prospect Park (B)	0	0	0	1	1	13	1	0	4	**20**
Ringwood (B)	5	1	0	0	4	17	8	16	10	**61**
Totowa (B)	3	2	0	3	15	22	3	14	11	**73**
Wanaque (B)	0	1	0	0	5	21	5	13	5	**50**
Wayne (T)	0	0	0	5	29	63	26	22	25	**170**
West Milford (T)	0	1	1	2	9	24	21	45	11	**114**
Woodland Park (B)	1	0	0	1	2	18	4	5	13	**44**
Passaic County (Total)	14	20	18	21	181	477	175	161	264	**1,331**

3.10 NATURAL, HISTORIC AND CULTURAL RESOURCES

The natural, historic, and cultural resources found in Passaic County contribute to its unique community character. If damaged by a hazard event, these resources may be challenging to restore to their original state due to regulation and cost. Identifying these resources is critical to protecting them from potential damage by a hazard event.

3.10.1 Natural

Passaic County contains 56,837 acres of dedicated park, recreation, and open space areas (Passaic County Department of Planning and Economic Development 2013). In addition to those discussed in Section 3.5, parks in Passaic County include the Paterson Great Falls National Historical Park, managed by the National Park Service. Additionally, Passaic County is home to the New Jersey State Botanical Gardens, which is a part of Ringwood State Park and managed by the NJDEP Division of Parks and Forestry.

3.10.2 Historic

Passaic County has developed a rich and varied history over the past several centuries due to its early urbanization. The County Department of Cultural and Historic Affairs oversees more than a dozen historic sites, many of which focus on the region's roots in industrialization, engineering, and scientific discovery. There are 42 properties in the County listed on the New Jersey and National Registers of Historic Places, of which 19 are in the City of Paterson, the most of any municipality (NJDEP Historic Preservation Office 2024). Listed properties include several of the County's natural and cultural resources as well, such as the New Jersey State Botanical Gardens and the Great Falls.

3.10.3 Cultural

As storied and diverse region, Passaic County contains many museums and cultural centers that embody the region's history, including the Folklife Center of Northern New Jersey, the Turkish Cultural Center, Clifton Jewish Center, and Ringwood Manor Association of the Arts.

4. RISK ASSESSMENT METHODOLOGY AND TOOLS

A risk assessment is the process of evaluating the potential loss of life, personal injury, and economic and property damage that could result from identified hazards. Identifying potential hazards and vulnerable assets allows planning personnel to address and reduce hazard impacts and allows emergency management personnel to establish early response priorities. Results of the risk assessment are used in subsequent mitigation planning processes, including determining and prioritizing mitigation actions that reduce each jurisdiction's risk from each hazard. Past, present, and future conditions must be evaluated to assess risk most accurately for the county and participating jurisdictions. The process focuses on the following elements:

- **Identify Hazards of Concern**—Use all available information to determine what types of hazards may affect a jurisdiction.
- **Profile Each Hazard**—Understand each hazard in terms of:
  - Extent—The potential severity of each hazard
  - Location—Geographic area most likely to be affected by the hazard
  - Previous occurrences and losses
  - Impacts of climate change
  - Probability of future hazard events
- **Assess Risk**—Use all available information to estimate to what extent populations and assets may be adversely affected by a hazard:
  - Determine vulnerability—Estimate the total number of assets in the jurisdiction that are likely to experience a hazard event if it occurs by overlaying hazard maps with the asset inventories.
  - Estimate potential impacts—Assess the impact of hazard events on the people, property, economy, and lands of the region, including estimates of the cost of potential damage or cost that can be avoided by mitigation.
  - Evaluate future changes that may affect vulnerability and impacts—Analyze how demographic changes, projected development and climate change impacts can alter current vulnerability and potential impacts.

The Passaic County risk assessment was updated using the following best-available information:

- A new building stock inventory was generated using 2019 Microsoft building footprints, tax assessor and parcel data from the New Jersey Office of Information Technology (NJOIT); and 2024 RSMeans cost adjustment values.
- 2020 Decennial Census population data and 2018-2022 American Community Survey 5-year population estimates were utilized.
- Critical facilities were updated and reviewed by the Planning Partnership and county jurisdictions.
- Lifelines were identified in the critical facility inventory to align with FEMA's community lifeline definition.
- FEMA's Hazus program was used to estimate potential impacts from the flood, wind, and seismic hazards.
- Best-available hazard data were used, as described in this section.

4.1 ASSET INVENTORIES

Passaic County assets were identified to assess potential vulnerability and impacts associated with the hazards of concern. The HMP update assesses vulnerability and potential hazard impacts for the following types of assets: population, buildings, critical facilities, community lifelines, the environment, and new development. Each asset type is described below. To protect individual privacy and the security of critical facilities, information on properties assessed is presented in aggregate, without details about specific individual properties.

4.1.1 Population

Statistics from the 2020 Decennial Census Population estimate and 2018-2022 American Community Survey (ACS) 5-year estimate were used to estimate the vulnerability of and potential impacts on the County's population. The Hazus model, which was used to estimate sheltering and injuries as part of the hazard analysis, contains 2020 U.S. Census data.

The risk assessment included the collection and use of an expanded and enhanced asset inventory to estimate hazard vulnerability and impacts.

Population counts at the jurisdictional level were averaged among the residential structures in the county to estimate the population at the structure level. This provides a more precise distribution of population across the county compared to only using census block or census tract boundaries.

Vulnerable populations in Passaic County included in the risk assessment are children, elderly, population below the poverty level, non-English speaking individuals, and persons with a disability.

4.1.2 Buildings

A custom-building stock inventory was developed for Passaic County. The inventory was updated using the most current parcel data from NJOIT, in addition to the 2019 Microsoft Building Footprints. Parcel attributes provided in the associated files were used to further define each structure, such as year built, number of stories, occupancy class, and square footage. Attributes were assigned to the largest building footprint per parcel. Default assumptions were applied to the remaining structures. The centroid of each building footprint was used to estimate the building location.

Structural and content replacement cost values (RCVs) were calculated for each building using the available assessor data, the building footprint, and RSMeans 2024 values. RCV is the cost of returning a destroyed asset to its pre-damaged condition using present-day cost of labor and materials. Total RCV consists of both the structural cost to replace a building and the estimated value of contents of the building. The cost analysis used the following location factors based on zip code:

- Zip codes beginning in 070-071
  - Residential location factor = 1.15
  - Non-Residential location factor = 1.14
- Zip codes beginning in 074-075
  - Residential location factor = 1.14
  - Non-Residential location factor = 1.12

The occupancy classes available in Hazus were condensed into the categories of residential, commercial, industrial, and other (agricultural, religious, governmental, and educational) to facilitate analysis and presentation of results. Residential loss estimates addressed both multi-family and single-family dwellings.

4.1.3 Critical Facilities and Community Lifelines

A critical facility inventory, which includes essential facilities, utilities, transportation features and user-defined facilities, was created by the Planning Partnership and county jurisdictions. The development involved a review for accuracy, additions, or deletions of new or moved critical assets, identification of backup power for each asset (if known) and whether the critical facility is considered a lifeline in accordance with FEMA's definition.

> A lifeline provides indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security (FEMA).

4.1.4 Environment and Land Cover

Draft national data for 2020 from the New Jersey Department of Environmental Protection (NJDEP) was used to assess land cover in the county. Non-urban areas were categorized as agricultural, barren land, forest, rangeland, water, or wetlands. The built land use areas were defined as urban and include developed open space along with low, medium, and high intensity development.

4.1.5 New Development

New development in the planning area was defined as development that occurred over the last 5 years and development that is expected to occur over the next 5 years. Each jurisdiction was asked to provide a list by address of major development that has taken place within these timeframes. The location of new development projects was submitted via ArcGIS Survey123.

A geographic information system (GIS) analysis was conducted to determine hazard exposure of these development sites. Projects built on multiple parcels were assessed as one unit. If one parcel identified within the project boundary intersected a spatial hazard layer, the entire project was considered "exposed" to the hazard area of concern. The hazard vulnerability analysis results are presented as a table in each annex in Volume II.

4.2 METHODOLOGY

Passaic County used standardized tools, combined with local, state, and federal data and expertise to assess potential vulnerability and losses associated with hazards of concern. Three levels of analysis were used, depending upon the data available for each hazard:

- **Qualitative Review**—This analysis includes an examination of historical impacts to understand potential impacts of future events of similar size. Potential impacts and losses are discussed qualitatively using best-available data and professional judgment.
- **Vulnerability Analysis**—This analysis involves overlaying available spatial hazard layers, for hazards with defined locations, on asset mapping in GIS to determine which assets are located in the hazard area.

- **Loss Estimation**—The FEMA Hazus modeling software was used to estimate potential losses for the following hazards: flood, earthquake, and hurricane.

Table 4-1 summarizes the type of analysis conducted by hazard of concern.

Table 4-1. Summary of Risk Assessment Analyses

Hazard	Population	General Building Stock	Critical Facilities	New Development
Dam Failure	Q	Q	Q	Q
Drought	Q	Q	Q	Q
Extreme Temperature	Q	Q	Q	Q
Flood	V, L	V, L	V, L	V
Geological Hazards	V, L	V, L	V, L	V
Severe Weather	L	L	L	L
Severe Winter Weather	Q	Q	Q	Q
Wildfire	V	V	V	V

Notes: V = Vulnerability analysis; L = Loss estimation; Q = Qualitative analysis

4.2.1 Hazus

Hazus is a GIS-based software tool developed by FEMA that uses engineering and scientific risk calculations to estimate damage and loss. Its use is accepted by FEMA and provides a consistent framework for assessing risk across a variety of hazards. Hazus uses GIS technology to produce detailed maps and analytical reports that estimate direct physical damage to building stock, critical facilities, transportation systems and utility systems. To generate this information, Hazus uses default data for inventory, vulnerability, and hazards; this default data can be supplemented with local data to provide a more refined analysis. Table 4-2 lists the levels of analysis that can be conducted using the Hazus software depending on the hazard and inventory data provided.

Table 4-2. Summary of Hazus Analysis Levels

Level 1	Hazus provides hazard and inventory data with minimal outside data collection or mapping.
Level 2	Hazus-provided hazard and inventory data are augmented with more recent or detailed data for the study region, referred to as “local data”
Level 3	The built-in Hazus loss estimation models are adjusted for the hazard loss analyses, usually in conjunction with the use of local data.

Hazus damage reports can include induced damage (inundation, fire, threats posed by hazardous materials and debris) and direct economic and social losses (casualties, shelter requirements, and economic impact) depending on the hazard and available local data. Hazus’ open data architecture can be used to manage community GIS data in a central location. The use of this software also promotes consistency of data output now and in the future and standardization of data collection and storage.

For this HMP, losses were estimated in Hazus using depth grids for the flood analysis and probabilistic (mean return period) analyses for hurricane wind and seismic hazards. The probabilistic model generates estimated damage and losses for specified return periods (e.g., 100- and 500-year).

4.2.2 Hazard-Specific Methodologies

Dam Failure

To assess the vulnerability of the county to dam failure and its associated impacts, a qualitative assessment was conducted.

Drought

All of Passaic County is at risk from the impacts of drought events. A qualitative analysis was conducted to assess the county's vulnerability to this hazard of concern and its associated impacts.

Extreme Temperatures

All of Passaic County is at risk from the impacts of extreme temperature events. A qualitative analysis was conducted to assess the county's vulnerability to this hazard of concern and its associated impacts.

Flood

The 1 percent and 0.2 percent annual chance flood events were examined to evaluate the county's risk from the flood hazard. The following data were used to evaluate vulnerability and determine potential future losses for this plan update:

- The Passaic County FEMA Effective Digital Flood Insurance Rate Map (DFIRM) dated April 17, 2020, with a latest LOMR of May 15, 2024, was used for the vulnerability analysis
- The flood depth grid from the 2020 hazard mitigation plan was used for loss estimation using Hazus. The previously developed flood depth grid was generated using the April 17, 2020, effective DFIRM flood data and a 10-foot resolution digital elevation model downloaded from the New Jersey Geographic Information Network (NJGIN) web portal.

To estimate vulnerability to the 1 percent and 0.2 percent annual chance flood events, the DFIRM flood boundaries were overlaid on the maps of updated assets (population, building stock, critical facilities, and new development). Assets that have a centroid within the flood boundaries were totaled to estimate the numbers and values vulnerable to the riverine flood hazard.

A Level 2 Hazus (v6.1) riverine flood analysis was performed to estimate flood losses for the 1 percent annual chance flood event. The critical facility and building inventories were formatted to be compatible with Hazus, and the Hazus riverine flood model was run to estimate losses. Inventoried buildings were imported as user-defined facilities to estimate potential losses at the structural level. Hazus estimated the following potential losses based on the depth grids generated and the default Hazus damage functions in the flood model:

- Impacts on the population (default 2020 U.S. Census data)
- Potential damage to the general building stock
- Amounts of flood-generated debris

Additionally, SLOSH (Sea, Lake, and Overland Surges from Hurricanes) Categories 1 through 4 were analyzed to evaluate the county's risk from storm surge. SLOSH data from NOAA (2022) was overlaid on the maps of updated assets (population, building stock, critical facilities, and new development). Assets that have a centroid within the SLOSH boundaries were totaled to estimate the numbers and values vulnerable to the SLOSH hazard.

Geological Hazards

To estimate the County's risk to the geologic hazard, the following hazard datasets were analyzed:

- NEHRP D&E Soils—Sourced from NJGWS (2015)
- Carbonate Rock—Sourced from NJDEP (2023)
- Landslide Classes A and B—Sourced from NJGWS (2015)
- Liquefaction Class 4—sourced from NJGWS (2015)

To determine what assets are vulnerable to the geologic hazard, these datasets were overlaid on the maps of updated assets (population, building stock, critical facilities, and new development). Assets that have a centroid within the hazard area boundaries were totaled to estimate the numbers and values vulnerable to the geological hazards.

The risk assessment evaluated the 500-year and 2,500-year mean return period (MRP) earthquake events through a Level 2 analysis in Hazus to estimate losses from the earthquake hazard. The probabilistic method uses information from historic earthquakes and inferred faults, locations and magnitudes to compute the probable ground shaking levels during a seismic event by census tract.

Groundwater was set at a depth of 5 feet (default setting). The default assumption for all return periods is a magnitude 7.0 earthquake. A density analysis was used to extract the percent of building structures that fall within each census tract and jurisdiction. The percentage was multiplied against the results calculated for each tract and summed to provide results for each municipality.

Damage estimates are calculated for losses to buildings (structural and non-structural) and contents; structural losses include load-carrying components of the structure, and non-structural losses include those to architectural, mechanical, and electrical components of the structure, such as nonbearing walls, veneer and finishes, HVAC systems, boilers, etc.

Severe Weather

A Hazus analysis was performed to analyze wind damage for the 100- and 500-year MRP hurricane wind events. The probabilistic Hazus hurricane model activates a database of thousands of potential storms that have tracks and intensities reflecting the full spectrum of Atlantic hurricanes observed since 1886 and identifies those with tracks in or near Passaic County. Hazus contains data on historical hurricane events and wind speeds. It also includes surface roughness and vegetation (tree coverage) maps for the area, which support the modeling of wind force across various types of land surfaces.

Default demographic and updated building and critical facility inventories in Hazus were used for the analysis. Because there are multiple census tracts that contain more than one jurisdiction, a density analysis was used to extract the percent of building structures that fall within each tract and jurisdiction. The percentage was multiplied against the results calculated for each tract and summed to provide results for each jurisdiction.

Severe Winter Weather

All of Passaic County is at risk from the impacts of severe winter weather. A qualitative analysis was conducted to assess the county's vulnerability to this hazard of concern and its associated impacts.

Wildfire

Wildfire risk data, sourced from the New Jersey Forest Fire Service (NJFFS 2009) was referenced to delineate extreme, very high and high wildfire hazard areas. To determine what assets are exposed to wildfire, the NJFFS GIS data were overlaid on maps of updated assets (population, building stock, critical facilities, and new development). Assets with their centroid located in the hazard area were totaled to estimate the numbers and values vulnerable to the wildfire hazard.

4.3 RATING PROBABILITY OF OCCURRENCE

Based on records of previous hazard events and consideration of potential future changes that could affect the frequency of future events, the risk assessment for each hazard assigns a rating for the probability of occurrence of that hazard in the future. These ratings were assigned as follows:

- Unlikely—not likely to occur or less than 1% annual chance of occurring
- Rare—between 1 and 10% annual chance of occurring
- Occasional—between 10 and 100% annual chance of occurring
- Frequent—100% chance occurring; occurs multiple times a year

4.4 DATA SOURCE SUMMARY

Table 4-3 summarizes the data sources used for the risk assessment for this plan.

4.5 LIMITATIONS

Uncertainties inherent in loss estimation methodologies arise from the following:

- Incomplete scientific knowledge concerning natural hazards and their effects on the built environment
- Approximations and simplifications necessary to conduct a study
- Incomplete or dated inventory, demographic, or economic parameter data
- The unique nature, geographic extent, and severity of each hazard
- Mitigation measures already employed by the participating jurisdictions
- The amount of advance notice residents have to prepare for a specific hazard event
- Uncertainty of climate change projections

These factors can result in a range of uncertainty in loss estimates, possibly by a factor of two or more. Therefore, potential vulnerability and loss estimates are approximate. These results do not predict precise results and should be used to understand relative risk. Over the long term, Passaic County will collect additional data and update and refine existing inventories to assist in estimating potential losses.

Potential economic loss is based on the present value of the general building stock using best-available data. The county acknowledges significant impacts may occur to critical facilities and infrastructure as a result of these hazard events causing great economic loss. However, monetized damage estimates to critical facilities and infrastructure, and economic impacts were not quantified and require more detailed loss analyses. In addition, economic impacts to industry such as tourism and the real-estate market were not analyzed.

Table 4-3. Risk Assessment Data Documentation

Data	Source	Date	Format
Population	U.S. Census 2010, 2020, American Community Survey 5-Year Estimates 2022	2010, 2020, 2022	CSV Format
Building Inventory	NJOIT, Microsoft 2019, RSMeans 2024	n.d., 2019, 2024	Digital (GIS) Format
Critical Facilities	Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024	2020, 2024, 2017, 2021, 2022, 2017, 2018, 2022, 2023, 2024	Digital (GIS) Format
Land Use	NJDEP, DOIT, BGIS 2020	2020	Digital (GIS) Format
Digital Elevation Model	NJGIN (10ft RES)	n.d.	Digital (GIS) Format
Flood	FEMA 2020 Effective DFIRM, latest LOMR 5/15/24	2020, 2024	Digital (GIS) Format
NEHRP Soils	NJGWS 2015	2015	Digital (GIS) Format
Liquefaction	NJGWS 2015	2015	Digital (GIS) Format
Carbonate Rock	NJDEP 2023	2023	Digital (GIS) Format
Landslide Areas	NJGWS 2015	2015	Digital (GIS) Format
SLOSH	NOAA 2022	2022	Digital (GIS) Format
Wildfire	NJFFS 2009	2009	Digital (GIS) Format
New Development	Passaic County Planning Partnership 2024	2024	Digital (GIS) Format

Notes: BGIS = Bureau of GIS; DOIT = Department of Information Technology; FEMA = Federal Emergency Management Agency; HIFLD = Homeland Infrastructure Foundation-Level Data; NJDEP = New Jersey Department of Protection; NJGIN = New Jersey Geographic Information Network; NJGWS = New Jersey Geological and Water Survey; NJOIT = New Jersey Office of Information Technology; NOAA = National Oceanic and Atmospheric Administration

4.6 CONSIDERATIONS FOR MITIGATION AND NEXT STEPS

The following should be considered to enhance the risk assessment for the next plan update:

- All hazards
  - Create an updated user-defined general building stock dataset using up-to-date parcels, footprints, and RSMeans values.
  - Utilize updated and current demographic data.
  - Integrate evacuation route data that is currently being developed.
- Dam failure
  - Leverage current dam failure inundation data to perform a quantitative assessment.
- Extreme temperature
  - Track extreme temperature data for injuries, deaths, shelter needs, pipe freezing, agricultural losses, and other impacts to determine distributions of most at-risk areas.
- Flood
  - Update the general building stock inventory to include attributes regarding first floor elevation and foundation type (basement, slab on grade, etc.) to enhance loss estimates.

  - Conduct a Hazus loss analysis for more frequent flood events (e.g., 10- and 50-year flood events).
  - Conduct a repetitive loss area analysis.
  - Continue to expand and update urban flood areas to further inform mitigation.
  - As more current FEMA floodplain data become available (i.e., DFIRMs), update the vulnerability analysis and generate a more detailed flood depth grid that can be integrated into the current Hazus version.
- Geological hazards
  - Leverage updated data for NEHRP soils, liquefaction, landslide and carbonate rock hazards.
- Severe weather
  - Update the general building stock inventory to include attributes regarding protection against strong winds, such as hurricane straps, to enhance loss estimates.
- Severe winter weather
  - If available for the region, obtain average snowfall distributions to determine if various areas in the county have historically received higher snowfalls and might continue to be more susceptible to higher snowfalls and snow loads on the building stock and critical facilities and infrastructure.
- Wildfire
  - General building stock inventory can be updated to include attributes such as roofing material, fire detection equipment, or distance to fuels as another measure of vulnerability.

5. IDENTIFICATION OF HAZARDS OF CONCERN

To provide a strong foundation for mitigation actions in this plan, Passaic County considered a full range of hazards that could impact the area and then identified and ranked those that present the greatest concern. These hazards of concern were identified based on the following:

> ***Hazards of Concern*** are hazards that are most likely to impact a community. These are identified using available data and local knowledge.
>
> ***Natural Hazards*** are hazards created by a meteorological, environmental, or geological event.

- Input from all Planning Partners
- Review of the 2024 State of New Jersey Hazard Mitigation Plan
- Review of the 2020 Passaic County HMP
- Research on the frequency, magnitude, and costs associated with hazards that have previously or could feasibly impact the region
- Qualitative information regarding natural (not human-caused) hazards and the perceived vulnerability of the study area's assets to them.

5.1 HAZARD REVIEW AND SELECTION

Table 5-1 documents the process of identifying the hazards of concern for profiling and evaluation in this HMP through a review of all hazards listed as hazards of concern in the 2024 New Jersey State HMP. Based on the review of these hazards, eight hazards of concern were identified for Passaic County, to be addressed at the County level in this plan (shown here in alphabetical order):

- Dam failure
- Drought
- Extreme temperature
- Flood
- Geological hazards
- Severe weather
- Severe winter weather
- Wildfire

Other natural and human-caused hazards of concern have occurred within Passaic County, but have a low potential to occur, are addressed by other planning mechanisms, or do not result in significant impacts within the County. Therefore, these hazards are not addressed in this update. If deemed necessary by the County, these hazards may be considered in future plan updates.

Table 5-1. Review of Hazards Assessed in the 2024 New Jersey State HMP for Inclusion in the Passaic County HMP

Hazard	May Occur in the County?	Poses Significant Threat to the County?	Why was this determination made?	Sources
Animal Disease	Yes	No	• The Steering Committee and Planning Partnership do not consider animal disease to be a hazard of concern for this HMP update due to limited agriculture and livestock farming in the planning area.	• New Jersey State HMP • Planning Partnership Input
Civil Unrest	Yes	No	• The Steering Committee and Planning Partnership do not consider civil unrest to be a hazard of concern for this HMP update as this hazard is addressed in other preparedness plans.	• New Jersey State HMP • Planning Partnership Input
Coastal Erosion	Yes	Yes	• The Steering Committee and Planning Partnership identified coastal erosion as a hazard of concern for Passaic County, but do not consider it to be a high priority due to the limited presence of coastlines and tidally influenced waterways. Coastal erosion is included as a sub-type in the Flood profile.	• New Jersey State HMP • Planning Partnership Input
Crop Failure	Yes	No	• The Steering Committee and Planning Partnership do not consider crop failure to be a hazard of concern for this HMP update due to limited agriculture in the planning area and instead consider it a cascading impact.	• New Jersey State HMP • Planning Partnership Input
Cyber Attack	Yes	No	• The Steering Committee and Planning Partnership do not consider cyber-attack to be a hazard of concern for this HMP update as this hazard is addressed in other preparedness plans.	• New Jersey State HMP • Planning Partnership Input
Dam and Levee Failure	Yes	Yes	• According to the 2024 New Jersey State HMP, Passaic County has 50 high hazard classified dams and 22 dams with a significant hazard potential classification. • The Steering Committee and Planning Partnership identified Dam Failure as a hazard of concern for Passaic County due to the presence of dams.	• New Jersey State HMP • Planning Partnership Input • USACE National Inventory of Dams
Drought	Yes	Yes	• New Jersey has entered periods of drought and Passaic County has experienced droughts classified in the abnormally dry and moderate categories. • According to the 2024 New Jersey State HMP, Passaic County experienced six USDA drought related declarations from 2012 to 2023. • The Steering Committee and Planning Partnership identified drought as a hazard of concern for Passaic County based on historical records and impacts.	• New Jersey State HMP • FEMA • NOAA NCEI • USDA • U.S. Drought Monitor • NDMC • Planning Partnership Input

Hazard	May Occur in the County?	Poses Significant Threat to the County?	Why was this determination made?	Sources
Earthquake	Yes	Yes	• FEMA's National Risk Index indicates that Passaic has a relatively low risk ranking in relation to the earthquake hazard. • The Steering Committee and Planning Partnership identified earthquake as a hazard of concern for Passaic County due to its relatively higher risk to seismic activity compared to the rest of the state. Earthquake is included as a sub-type in the Geological Hazards profile.	• New Jersey State HMP • FEMA • NJGWS • USGS • Planning Partnership Input
Economic Collapse	Yes	No	• The Steering Committee and Planning Partnership do not consider economic collapse to be a hazard of concern for this HMP update due to the plan update's focus on natural hazard and the County's limited ability to mitigate for this hazard.	• New Jersey State HMP • Planning Partnership Input
Extreme Temperature	Yes	Yes	• FEMA's National Risk Index indicates that Passaic has a relatively high risk ranking in relation to extreme heat and a relatively low risk ranking in relation to extreme cold. • The Steering Committee and Planning Partnership identified extreme temperature as a hazard of concern for Passaic County due to historical records and impacts.	• New Jersey State HMP • FEMA • Planning Partnership Input
Fishing Failure	No	No	• The Steering Committee and Planning Partnership do not consider fishing failure to be a hazard of concern for this HMP update due to the planning area's limited dependence on fishing for sustenance.	• New Jersey State HMP • Planning Partnership Input
Flood	Yes	Yes	• Passaic County was included in six flood related FEMA declarations. • Passaic County has been included in numerous flood and flash flood events listed in the NOAA database since 2010 and has numerous critical facilities within the special flood hazard area. • The Steering Committee and Planning Partnership identified flood as a hazard of concern for Passaic County due to the presence of floodplains and historical records and impacts.	• New Jersey State HMP • FEMA • NOAA NCEI • Planning Partnership Input
Geological Hazards	Yes	Yes	• FEMA's National Risk Index indicates Passaic has a moderate risk ranking in relation to the landslide hazard. • Based on the 2024 New Jersey State HMP, Passaic County has experienced many rockslides and debris flows and has abandoned mines throughout the County. • The Steering Committee and Planning Partnership identified Geological Hazards as a hazard of concern for Passaic County due to its relatively higher risk to seismic activity and landslides. Geological Hazards includes three sub-types—earthquakes, landslides, and subsidence—to streamline the risk assessment and mitigation strategy.	• New Jersey State HMP • FEMA • USGS • NJGWS • Planning Partnership Input

Hazard	May Occur in the County?	Poses Significant Threat to the County?	Why was this determination made?	Sources
Harmful Algal Blooms	Yes	No	• The Steering Committee and Planning Partnership do not consider harmful algal blooms to be a hazard of concern for this HMP update due to limited ability to mitigate this hazard.	• New Jersey State HMP • Planning Partnership Input
Hazardous Substances	Yes	Yes	• The Steering Committee and Planning Partnership do not consider hazardous substances to be a hazard of concern for this HMP update as this hazard is addressed in other preparedness plans.	• New Jersey State HMP • Planning Partnership Input
Hurricane/ Tropical Cyclones	Yes	Yes	• The Steering Committee and Planning Partnership identified hurricanes as a hazard of concern for Passaic County and included them as a sub-type under the Severe Weather profile.	• New Jersey State HMP • Planning Partnership Input
Nuclear Hazards	Yes	Yes	• The Steering Committee and Planning Partnership do not consider nuclear hazards to be a hazard of concern for this HMP update as this hazard is addressed in other preparedness plans.	• New Jersey State HMP • Planning Partnership Input
Pandemic	Yes	Yes	• Passaic County State has been identified in three FEMA declarations for COVID-19, including two for COVID-19 and one for West Nile Virus. • The Steering Committee and Planning Partnership do not consider pandemic to be a hazard of concern for this HMP update as this hazard is addressed in other preparedness plans and programs.	• New Jersey State HMP • FEMA • Passaic County Department of Health • Planning Partnership Input
Severe Weather	Yes	Yes	• Passaic County was included in 15 FEMA declarations between 1999 and 2024 in relation to severe storms. • The Steering Committee and Planning Partnership identified severe weather as a hazard of concern for Passaic County due to historical records and impacts and anticipated occurrences.	• New Jersey State HMP • FEMA • NOAA NCEI • Planning Partnership Input
Severe Winter Weather	Yes	Yes	• Passaic County was included in four FEMA disaster declarations for winter weather between 1993 and 2024. • The Steering Committee and Planning Partnership identified severe winter weather as a hazard of concern for Passaic County due to historical records and impacts and anticipated occurrences.	• New Jersey State HMP • FEMA • NOAA NCEI • Planning Partnership Input

Hazard	May Occur in the County?	Poses Significant Threat to the County?	Why was this determination made?	Sources
Terrorism	Yes	No	• The Steering Committee and Planning Partnership do not consider terrorism to be a hazard of concern for this HMP update as this hazard is addressed in other preparedness plans.	• New Jersey State HMP • Planning Partnership Input
Wildfire	Yes	Yes	• Passaic County has numerous critical facilities located within the moderate to high-risk wildfire area. • There have been many occurrences of wildfires of varying severity in Passaic County. • The Steering Committee and Planning Partnership identified wildfire as a hazard of concern for Passaic County due to the presence of wildfire fuels in the planning area and the potential vulnerability of community lifelines.	• New Jersey State HMP • FEMA • New Jersey Forest Fire Service • Planning Partnership Input

Note: CRREL = Cold Regions Research and Engineering Laboratory; DR = Presidential Disaster Declaration Number; EM = Presidential Disaster Emergency Number; FEMA = Federal Emergency Management Agency; NCEI = National Centers for Environmental Information; NDMC = National Drought Mitigation Center; NJGWS = New Jersey Geological and Water Survey; NOAA = National Oceanic and Atmospheric Administration; USACE = U.S. Army Corps of Engineers; USDA = U.S. Department of Agriculture; USGS = U.S. Geologic Survey

5.2 HAZARD DESCRIPTIONS

The selected hazards of concern for this HMP are generally defined as follows:

- Dam Failure—A dam is a structure built across a river or stream to hold back water. Dam failures occur when the dam is damaged, destroyed or otherwise overtopped, releasing water or other liquid stored behind the dam.
- Drought—A drought is a period characterized by long durations below normal precipitation. Drought is a temporary irregularity that can affect agriculture, water supply, aquatic ecology, wildlife, and plant life.
- Extreme Temperatures—The extreme temperature hazard includes both heat and cold events, which can have significant impacts on human health, businesses, and infrastructure. What constitutes “extreme cold” or “extreme heat” is based on what the population is accustomed to. Extreme cold events are when the ambient air temperature drops to approximately 0 °F; extreme heat events are characterized as temperatures that hover 10 °F or more above the average high temperature for the area.
- Flood—A flood is rainfall or an overflow of water from a water body that submerges areas that are usually dry. Floods include riverine floods, flash floods, storm surge, stormwater/urban floods, and ice jam floods.
- Geological Hazards—Geological hazards include earthquakes, landslides, and subsidence. An earthquake is the sudden movement of the Earth’s surface caused by the release of stress accumulated in the Earth’s tectonic plates. A landslide is the downslope movement of earthen materials. Subsidence is the sudden sinking or gradual downward settling of the Earth’s surface with little or no horizontal motion, owing to the subsurface movement of earth materials.
- Severe Weather—The severe weather hazard includes windstorms, thunderstorms, hail, and tornadoes. Tropical disturbances (hurricanes, tropical storms, and tropical depressions) are often identified as a type of severe storm. For this HMP update, the hazard of concern includes thunderstorms, high winds, hailstorms, tornadoes, and hurricanes.
- Severe Winter Weather—A winter storm is a weather event in which the main types of precipitation are any combination of snow, sleet, or freezing rain, typically accompanied by low temperatures. The severe winter weather hazard includes heavy snow, blizzards, sleet, ice storms, and nor’easters.
- Wildfire—A wildfire is any non-structural fire that occurs in the wildland. Wildfires include naturally occurring wildfire, human-caused wildfire, and prescribed fire. Wildfires result in the disturbance of forest and brush and destruction of real estate and personal property.

6. DAM FAILURE

6.1 HAZARD PROFILE

6.1.1 Hazard Description

A dam is a structure built across a river or stream to store water, wastewater, or liquid-borne materials for purposes such as flood control, human water supply, energy generation, recreation, or pollution control. Many dams fulfill a combination of these functions (ASDSO 2023).

A dam failure is any malfunction that adversely affects the primary function of the dam, releasing water or other liquid stored behind the dam (FEMA 2018). When dams fail or overtop, they can lead to major flooding and cause catastrophic impacts in downstream areas (ASDSO 2024). Throughout history, hundreds of dams have failed in the United States, causing property and environmental damage, injuries, and fatalities.

Dam failures are usually associated with intense rainfall and prolonged flood conditions. Significant rainfall can cause floodwaters to overwhelm a reservoir. If the spillway of the dam cannot safely pass the resulting flows, water will begin flowing in areas not designed for such flows, and a failure may occur. Dam breaks also may occur during dry periods as a result of progressive erosion of an embankment. This is referred to as a “sunny day” failure. Dam failures are most likely to for one or a combination of the following events (ASDSO 2024):

- Overtopping caused by water spilling over the top of a dam
- Foundation defects, including settlement and slope instability
- Cracking caused by movement
- Inadequate maintenance and upkeep
- Improperly seepage filtration that enables the formation of sinkholes in the dam

Dam failures may or may not leave enough time for evacuation of people and property, depending on their abruptness. Dam failures due to the overtopping of a dam normally give sufficient lead time for evacuation. Seepages in earth dams usually develop gradually, and if the embankment damage is detected early, downhill residents have at least a few hours or days to evacuate. Failures of concrete or masonry dams tend to occur suddenly, sending a wall of water and debris down the valley at more than 100 miles per hour. Dam failure events are frequently associated with other natural hazard events such as earthquakes, landslides, or severe weather, which limits their predictability and compounds the hazard.

6.1.2 Regulatory Oversight of Dams

National Dam Safety Program

The potential for catastrophic flooding caused by dam failures led to enactment of the National Dam Safety Act (Public Law 92-367), which for 30 years has protected Americans from dam failures. The National Dam Safety Program is a partnership among states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Under the program, state assistance funds have allowed participating states to improve their programs through increased inspections, emergency action planning, and purchases of

needed equipment. Grant assistance from FEMA provides support for improvement of dam safety programs that regulate most dams in the United States (FEMA 2024).

New Jersey Department of Environmental Protection Dam Safety Section

The New Jersey Department of Environmental Protection (NJDEP) Dam Safety Section has responsibility for overseeing dam safety in the state. The primary goal of the oversight program is to ensure the safety and integrity of dams in New Jersey and thereby protect people and property from the consequences of dam failures. The Dam Safety Section reviews plans and specifications for the construction of new dams or for the alteration, repair, or removal of existing dams and must grant approval before the owner can proceed with construction. New Jersey's Safe Dam Act (NJSA 58:4) requires dams to meet state dam safety standards. NJDEP has enforcement capabilities to achieve compliance with the standards. This includes issuing orders for compliance to dam owners and pursuing legal action if the owner does not comply (with possible fines levied on a per-day basis for violations) (NJDEP 2024).

NJDEP assigns one of four hazard ratings to state-regulated dams in New Jersey (State of New Jersey 2017):

- Class I (High-Hazard Potential)—Failure of the dam may result in probable loss of life and/or extensive property damage.
- Class II (Significant-Hazard Potential)—Failure of the dam may result in significant property damage; however, loss of life is not envisioned.
- Class III (Low-Hazard Potential)—Failure of the dam is not expected to result in loss of life or significant property damage.
- Class IV (Zero-Hazard Potential)—Failure of the dam is not expected to result in loss of life or significant property damage.

Hazard potential is based on the consequences of dam failure and not the dam condition or the probability of failure occurring.

Existing dams are periodically inspected to ensure that they are adequately maintained, and owners are directed to correct any deficiencies found. The owners or operators of all dams that raise the waters of any stream more than 70 feet above its usual mean low-water height or that impound more than 10,000 acre-feet of water must have a regular inspection performed annually and formal inspections performed every three years by a state-licensed professional engineer. These inspections must be attended by a professional engineer assigned from the NJDEP (State of New Jersey 2024). Inspection guidelines are summarized in Table 6-1.

Table 6-1. Dam Inspection Requirements

Dam Size/Type	Regular Inspection	Formal Inspection
Class I (High Hazard) Large Dam	Annually	Once every 3 years
Class I (High Hazard) Dam	Once every 2 years	Once every 6 years
Class II (Significant Hazard) Dam	Once every 2 years	Once every 10 years
Class III (Low Hazard) Dam	Once every 4 years	Only as required
Class IV (Zero Hazard) Dam	Once every 4 years	Only as required

Source: State of New Jersey 2017

Based on the inspection, owners are required to note the extent of deterioration as a basis for long term planning, periodic maintenance, or immediate repair; to evaluate conformity with current design and construction practices;

and to determine the appropriateness of the existing hazard classification. NJDEP has guidelines to meet the requirements of the National Inventory of Dams condition assessment of existing dams. Table 6-2 summarizes the definitions for each potential deficiency rating.

Table 6-2. Dam Deficiency Ratings

Rating	Definition
Satisfactory	No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all applicable loading conditions (static, hydrologic, seismic) in accordance with the applicable regulatory criteria. Minor maintenance items may be required.
Fair	Acceptable performance is expected under all required loading conditions (static, hydrologic, seismic) in accordance with the applicable dam safety regulatory criteria. Minor deficiencies may exist that require remedial action and/or secondary studies or investigations.
Poor	A dam safety deficiency is recognized for any required loading condition (static, hydrologic, seismic) in accordance with the applicable dam safety regulatory criteria. Remedial action is necessary. Poor also applies when further critical studies or investigations are needed to identify any potential dam safety deficiencies.
Unsatisfactory	Considered unsafe. A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution. Reservoir restrictions may be necessary.

Source: NJDEP 2017

The Dam Safety Section also coordinates with the Division of State Police and local and county emergency management officials in the preparations and approval of emergency action plans (EAPs). The state requires all high hazard and significant hazard dams to have NJDEP-approved EAPs in place. It is the responsibility of the dam owner to review and update the EAP on an annual basis.

U.S. Army Corps of Engineers Dam Safety Program

The U.S. Army Corps of Engineers (USACE) is responsible for safety inspections of federal and non-federal dams in the United States that meet the size and storage limitations specified in the National Dam Safety Act. USACE has inventoried dams and has surveyed each state's and federal agency's capabilities, practices, and regulations regarding design, construction, operation, and maintenance of the dams. USACE has also developed guidelines for inspection and evaluation of dam safety (USACE 2014).

Table 6-3 lists USACE-developed ratings of hazard potentials of dams, based on potential consequences of a dam failure. According to New Jersey's State HMP, the level of impact that a failure would have can be predicted based upon the USACE hazard rating.

Table 6-3. USACE Dam Hazard Ratings

Hazard Category[a]	Direct Loss of Life[b]	Lifeline Losses[c]	Property Losses[d]	Environmental Losses[e]
Low	None (rural location, no permanent structures for human habitation)	No disruption of services (cosmetic or rapidly repairable damage)	Private agricultural lands, equipment, and isolated buildings	Minimal incremental damage
Significant	Rural location, only transient or day-use facilities	Disruption of essential facilities and access	Major public and private facilities	Major mitigation required

Hazard Category[a]	Direct Loss of Life[b]	Lifeline Losses[c]	Property Losses[d]	Environmental Losses[e]
High	Certain (one or more) extensive residential, commercial, or industrial development	Disruption of essential facilities and access	Extensive public and private facilities	Extensive mitigation cost or impossible to mitigate

Source: USACE 2014

a. Categories are assigned to overall projects, not individual structures at a project.

b. Loss-of-life potential is based on inundation mapping of area downstream of the project. Analyses of loss-of-life potential should take into account the population at risk, time of flood wave travel, and warning time.

c. Lifeline losses include indirect threats to life caused by the interruption of lifeline services from project failure or operational disruption; for example, loss of critical medical facilities or access to them.

d. Property losses include damage to project facilities and downstream property and indirect impact from loss of project services, such as impact from loss of a dam and navigation pool, or impact from loss of water or power supply.

e. Environmental impact downstream caused by the incremental flood wave produced by the project failure, beyond what would normally be expected for the magnitude flood event under which the failure occurs.

Federal Energy Regulatory Commission Dam Safety Program

The Federal Energy Regulatory Commission (FERC) cooperates with a large number of federal and state agencies to ensure and promote dam safety and, more recently, homeland security. Nationally, over 3,000 dams are part of regulated hydroelectric projects and are included in the FERC Dam Safety Program. Two-thirds of these dams are more than 50 years old. FERC staff inspect hydroelectric projects on an unscheduled basis to investigate the following (FERC 2020):

- Potential dam safety problems
- Complaints about constructing and operating a project
- Safety concerns related to natural disasters
- Issues concerning compliance with terms and conditions of a license.

Every five years, an independent consulting engineer, approved by FERC, must inspect and evaluate projects with dams higher than 32.8 feet (10 meters) or with total storage capacity of more than 2,000 acre-feet (FERC 2020). FERC staff visit dams and licensed projects during and after floods, assess extents of damage, and direct any studies or remedial measures the licensee must undertake.

FERC requires licensees to prepare EAPs and conducts training sessions on developing and testing these plans. The plans outline an early warning system in the event of an actual or potential sudden release of water from a dam failure. The plans include operational procedures that may be implemented during regulatory measures, such as reducing reservoir levels and downstream flows, as well as procedures for notifying affected residents and agencies responsible for emergency management. These plans are frequently updated and tested to ensure that all applicable parties are informed of the proper procedures in emergencies (FERC 2020).

6.1.3 Location

Passaic County considers the locations of dams to be sensitive information. A map is not included, and municipal-level statistics are not listed in the plan due to these sensitivities. NJDEP has identified and classified 134 dams in Passaic County (NJOEM 2024).

6.1.4 Extent

The extent of a dam failure event is defined by the damage associated with a dam's NJDEP or USACE hazard rating. Passaic County contains 134 dams. Of these, 50 structures are rated as high hazard potential dams, as shown in Table 6-4. The failure of these dams could cause loss of life or property damage.

Table 6-4. Dams by Hazard Classification in Passaic County

Hazard Ranking	Number of Dams
High	50
Significant	22
Low	62
Total	134

Source: (NJOEM 2024)

Additionally, there are two factors that influence the potential severity of a full or partial dam failure: the amount of water impounded; and the density, type, and value of development and infrastructure located downstream (FEMA 2018).

6.1.5 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has not been included in any major disaster (DR) or emergency (EM) declarations for dam failure-related events (FEMA 2023).

USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Since the previous HMP, Passaic County has not been included in any USDA dam failure-related agricultural disaster declarations (USDA 2024).

Previous Events

No known dam failure events impacted Passaic County since the previous HMP (NJDEP 2024, NOAA-NCEI 2024, FEMA 2024). Refer to the 2020 Passaic County HMP for any earlier events. According to the New Jersey Bureau of Dam Safety, five dams in Passaic County were damaged by the remnants of Hurricane Floyd in 1999 once it reached New Jersey; but none of these dams experienced a failure.

6.1.6 Probability of Future Occurrences

Probability Based on Previous Occurrences

Dam failures are infrequent and usually coincide with events that cause them, such as earthquakes, landslides, excessive rainfall and snowmelt. Based on NJDEP, FEMA, and NOAA-NCEI records, no dam failure events have occurred or affected Passaic County (NJDEP 2024, NOAA-NCEI 2024, FEMA 2024). Based on historical records

and input from the Steering Committee, the probability of occurrence for dam failure in the County is considered "rare."

There are many regulatory bodies and mitigation measures in place to protect communities from the impacts of dam failures. Even with these safeguards, dams experience "residual risk," which refers to the risk of more severe events than those that the facility was designed to withstand. Still, the probability of any type of dam failure is low given New Jersey's dam safety regulatory and oversight environment. However, failure risks increase if dams age and are not maintained properly. The construction of new dam structures also could increase failure risks in the future.

Effect of Climate Change on Future Probability

Climate change can impact stored water systems as increased rainfall accumulations can cause reservoirs to overtop. Dams are designed using a hydrograph to evaluate dam safety issues for situations where the reservoir inflow peak discharge is greater than the maximum spillway capacity, the reservoir has large surcharge storage, or the reservoir has dedicated flood control space. Increased precipitation due to climate change may result in overtopping, as the hydrographs are based on historical events (FEMA 2013).

6.1.7 Cascading Impacts on Other Hazards

Dam failure can cause severe downstream flooding, depending on the magnitude of the failure. Floods caused by dam failures have caused loss of life and property damage (FEMA 2013). Other potential secondary hazards of dam failure are landslides around the reservoir perimeter, bank erosion on the rivers, and destruction of downstream habitat. Seismic activity is another concern, as earthquakes can damage dams, particularly those not designed to withstand seismic forces.

6.2 VULNERABILITY AND IMPACT ASSESSMENT

The dam failure hazard is of significance to Passaic County because 134 dams are present across the County, 50 of which are identified as high hazard (USACE 2023). Dam failure inundation maps and downstream hazard areas are considered sensitive information and were not available for use in this risk assessment. To assess Passaic County's risk to dam failure, a qualitative review was conducted.

6.2.1 Life, Health, and Safety

Overall Population

The impact of dam failure on life, health, and safety is dependent on factors such as the class of dam, the area that the dam is protecting, the location of the dam, and the proximity of structures, infrastructure, and critical facilities to the dam structure.

The entire population residing within a dam failure inundation zone is considered vulnerable to a dam failure event. The potential for loss of life is affected by the warming time provided, and capacity and number of evacuation routes available to populations living within these areas. Dam failure can cause persons to become displaced if flooding of structures occurs.

Socially Vulnerable Population

People living below the poverty level are more at risk during a dam failure event because they may be unable to evacuate based upon the net economic impact to their family. Elderly populations are more likely than the general population to need medical attention, and the availability of medical services may be limited due to isolation during a dam failure event. This population also faces difficulties in evacuating. There is often limited warning time for a dam failure event. Populations without adequate warning of the event are highly vulnerable.

Without a quantitative assessment of potential impacts of a dam failure on socially vulnerable populations, the Planning Partners can best assess mitigation options through an understanding of the general numbers and locations of such populations across Passaic County. Section 3.6.3 provides detailed data on socially vulnerable populations within the planning area. Table 6-5 summarizes highlights of this information. For planning purposes, it is reasonable to assume that percentages and distribution of socially vulnerable populations affected by a dam failure will be similar to the countywide numbers.

Table 6-5. Distribution of Socially Vulnerable Populations by Municipality

	Countywide Total		Municipality Highest in Category		Municipality Lowest in Category	
Category	Number	Percent	Number	Percent	Number	Percent
			Paterson	North Haledon	Prospect Park	Passaic
Population Over 65	**78,440**	**15.1%**	**18,141**	**24.6%**	**625**	**9.0%**
			Paterson	Passaic, Prospect Park	Bloomingdale	Bloomingdale
Population Under 5	**33,502**	**6.4%**	**12,442**	**8.3%**	**247**	**3.2%**
Non-English-Speaking Population	**68,953**	**13.3%**	Paterson **34,885**	Passaic **22.4%**	Bloomingdale, Ringwood **104**	Ringwood **0.9%**
Population With Disability	**46,707**	**9.0%**	Paterson **12,756**	Prospect Park **14.3%**	Bloomingdale **588**	Pompton Lakes **7.2%**
Population Below Poverty Level	**68,995**	**13.3%**	Paterson **37,143**	Paterson **23.5%**	Ringwood **262**	Ringwood **2.2%**
Households Below ALICE Threshold	**62,752**	**35%**	Paterson **33,284**	Paterson **67%**	North Haledon **745**	Ringwood **22%**

6.2.2 General Building Stock

All buildings located in the dam failure inundation zone are considered vulnerable to the hazard. Property closest to the dam inundation area has the greatest potential to experience the most destructive surge of water. Dam failure can transport large volumes of sediment and debris, depending on the magnitude of the event, which can cause widespread damage to buildings, resulting in large repair costs. In addition to physical damage costs, businesses can be closed while flood waters retreat and utilities are returned to a functioning state. Debris from damaged buildings can accumulate.

6.2.3 Community Lifelines and Other Critical Facilities

Dam failures may impact critical facilities and infrastructure located in the downstream inundation zone. All transportation infrastructure in the dam failure inundation zone is vulnerable to damage and cut-off of evacuation routes, limiting emergency access and creating isolation issues. Utilities such as overhead power lines, cable and

phone lines could also be vulnerable. Loss of these utilities could create additional isolation issues for the inundation areas. Loss of power and communications may cause drinking water and wastewater treatment facilities to become temporarily out of operation. Widespread damage to facilities and infrastructure would result in large repair costs.

6.2.4 Economy

Flooding from a dam failure can cause extensive structural damage to private property and public utilities, cutting off essential services. Debris from damaged buildings can accumulate, adding to the costs of removal. The inability to access shopping centers or workplaces further amplifies the economic strain by halting business operations, reducing revenue, impacting employment, disrupting supply chains, and decreasing consumer spending, all of which hinder the local economy's stability and recovery.

6.2.5 Natural, Historic and Cultural Resources

Natural

The environmental impacts of a dam failure can include significant water-quality and debris-disposal issues or severe erosion that can impact local ecosystems. Floodwaters can back up sanitary sewer systems and inundate wastewater treatment plants, causing raw sewage to contaminate residential and commercial buildings and the flooded waterway. The contents of unsecured containers of oil, fertilizers, pesticides, and other chemicals may get added to flood waters. Hazardous materials may be released and distributed widely across the floodplain. The destruction of local ecosystems is a significant concern because they are essential for maintaining biodiversity, supporting wildlife, and providing critical services such as clean water, air, and soil health.

Historic

Historic structures, sites, monuments, districts, and documents may become damaged or destroyed in the flood waters following a dam failure.

Cultural

Cultural resources include artifacts, statuary, artwork, and important documents housed in libraries, museums, archives, historical repositories, or historic properties. All of these can be damaged or destroyed by flood waters following a dam failure.

6.3 FUTURE CHANGES THAT MAY AFFECT RISK

6.3.1 Potential or Planned Development

Any areas of growth could be impacted by a dam failure event if the structures are located within the downstream inundation area and mitigation measures are not considered. Therefore, it is the intention of the County and all participating municipalities to discourage development in vulnerable areas or to encourage higher regulatory standards at the local level. Due to the sensitive nature of dam locations and downstream inundation zones, an assessment to determine the proximity of these new development sites to potential dam inundation cannot be performed at this time.

6.3.2 Projected Changes in Population

Any changes in the density of population can impact the number of persons exposed to the dam failure hazard. Higher density can not only create issues for local residents during evacuation of a dam failure event but can also have an effect on commuters that travel into and out of the County for work.

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

6.3.3 Climate Change

Most studies indicate that the State of New Jersey will experience a rise in average annual precipitation, primarily in the form of heavy rainfalls, which could elevate the risk of dam failures. Increased precipitation may place additional stress on dam structures. Existing flood control systems might struggle to manage the higher water flow from more frequent, intense rainfall events. This could lead to more frequent overtopping of dams and flooding of county assets in adjacent inundation areas. However, the probable maximum flood used in dam design may still accommodate these climate changes.

Projections suggest that annual precipitation in the State of New Jersey could increase by 4 percent to 11 percent, potentially affecting the hydrographs of many dammed rivers. This rise in precipitation could reduce the designed margin of safety for dams. A decrease in margin of safety may result in floodwaters overtopping the dam or creating unintended loads, potentially leading to dam failure (NJOEM 2024).

6.3.4 Other Identified Conditions

Aging infrastructure is a significant risk factor, as many dams may not meet current safety standards and are more susceptible to failure due to wear and tear. Design and construction flaws can become critical over time, especially under changing environmental conditions. Inadequate maintenance and delayed repairs further increase the risk of dam failure (FEMA 2018). Issues with upstream dams can impact downstream dams, potentially leading to cascading failures. Additionally, cybersecurity attacks and other security threats can alter dam operations and pose significant risks (CRS Report 2023).

7. DROUGHT

7.1 HAZARD PROFILE

7.1.1 Hazard Description

Drought is a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, or people. It is a normal, recurrent feature of climate that occurs in virtually all climate zones, from very wet to very dry. Drought is a temporary aberration from normal climatic conditions and can vary significantly from one region to another. Human factors, such as water demand and water management, can exacerbate the impact that a drought has on a region (NIDIS 2020).

Anomalies of precipitation and temperature may last from several months to several decades. How long they last depends on interactions between the atmosphere and the oceans, soil moisture and land surface processes, topography, internal dynamics, and the accumulated influence of weather systems on the global scale (NIDIS n.d.).

There are five different ways that drought can be defined or grouped (NDMC n.d.):

- ***Meteorological drought*** is a measure of the departure of precipitation from normal. It is defined solely by the relative degree of dryness. Due to climatic differences, what might be considered a drought in one location may not be a drought in another location.
- ***Agricultural drought*** links drought to agricultural impacts, focusing on precipitation shortages, evapotranspiration, soil water deficits, reduced ground water or reservoir levels, and other parameters. It occurs when there is not enough water available for a particular crop to grow at a particular time.
- ***Hydrological drought*** is defined by stream flows and reservoir, lake, and groundwater levels being below normal levels due to precipitation shortfalls.
- ***Socioeconomic drought*** occurs when the demand for an economic good exceeds supply because of a weather-related shortfall in water supply. The supply of many economic goods depends on the weather (for example water, forage, food grains, fish, and hydroelectric power).
- ***Ecological drought*** is a prolonged and widespread deficit in naturally available water supplies that create multiple stresses across ecosystems.

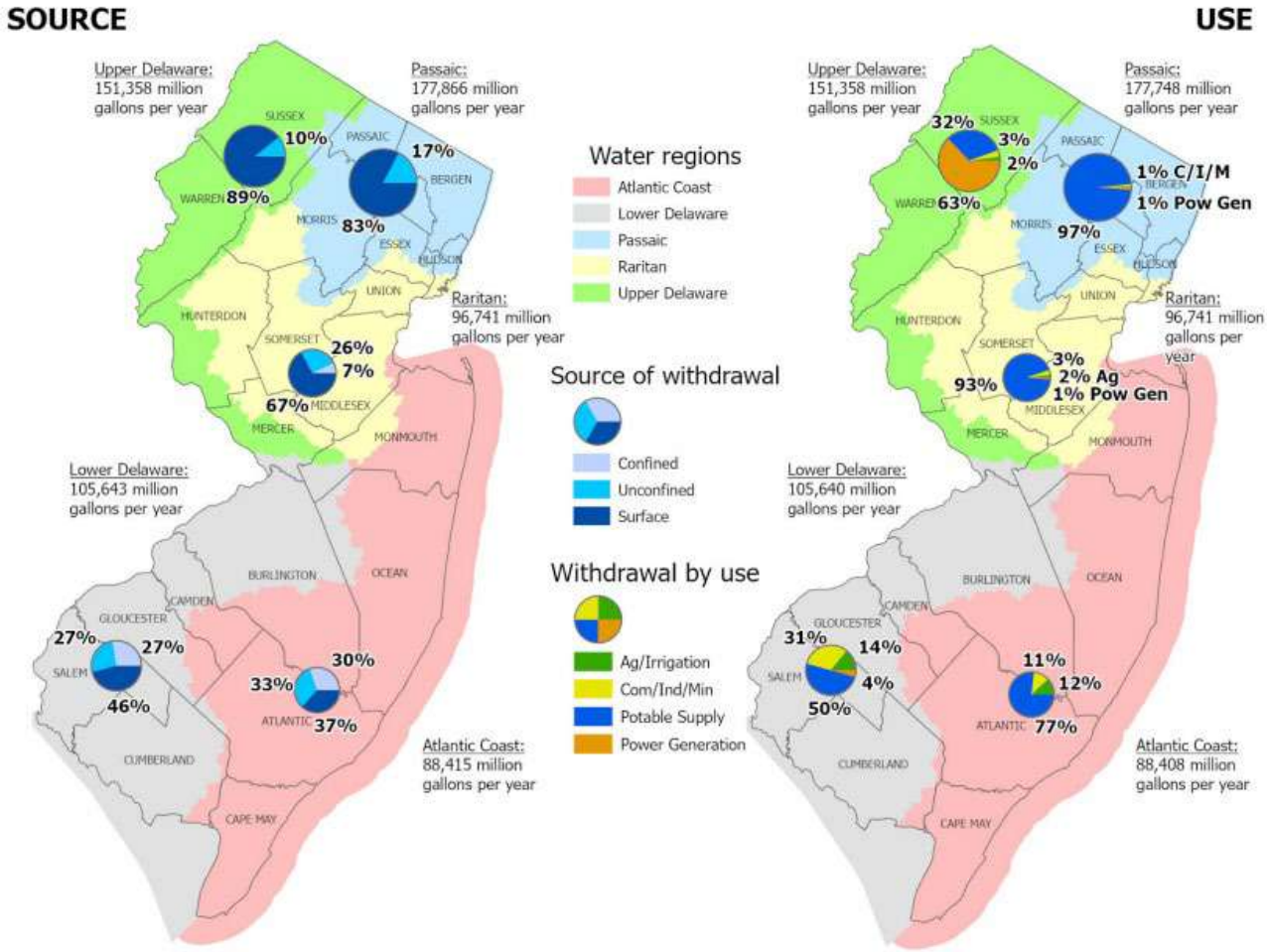
Water in hydrologic storage systems (e.g., reservoirs, rivers) is often used for multiple and competing purposes (e.g., flood control, irrigation, recreation, navigation, hydropower, or wildlife habitat), further complicating the sequence and quantification of impacts. Competition for water in these storage systems escalates during drought and conflicts between water users increase significantly (NDMC n.d.).

7.1.2 Water Supply and Water Use

Sources and Uses

New Jersey is divided into five water regions based on watershed management area and hydrologic unit codes (see Figure 7-1). Passaic County is located within the Passaic water region, with a small portion of the County falling within the Upper Delaware Region. Both of those regions get most of their water from surface water sources.

Figure 7-1. New Jersey Water Regions, Sources, and Withdrawals by Sector



Source: (NJDEP 2024)

In the Passaic water region, almost all of the water withdrawn is for potable water supply, with very small amounts for power generation and commercial, industrial or mining purposes. In contrast, the majority of water withdrawal in the Upper Delaware water region is for power generation, followed by potable supply. Water use trends, like withdrawal trends, vary from month to month with water use typically peaking during summer when outdoor and irrigation demands are high (NJDEP 2024).

Passaic County's agricultural industry is heavily reliant on water resources. According to the U.S. Department of Agriculture (USDA) Agricultural Census, as of 2022 the County had 99 farms covering 1,830 acres of land. Table 7-1 summarizes agricultural land in Passaic County.

Table 7-1. Agricultural Land in Passaic County

Number of Farms	Land in Farms (acres)	Total Cropland (acres)	Irrigated Land (acres)
99	1,830	412	127

Source: USDA 2022

The average size of each farm is 18 acres, which is a 13 percent decrease since the 2017 Agricultural Census. The total market value of products sold annually by farms in Passaic County is $4.6 million, an average of $47,301 per farm. About half of the farms (49 percent) have annual sales of less than $2,500; 5 percent have annual sales of $100,000 or more. Most sales from farms in the County are from crop production; only a small fraction of sales stems from livestock and poultry products (USDA 2022).

Suppliers

Over 1.2 billion gallons of potable water are used in the State of New Jersey each day, with 88 percent of the State's population receiving its drinking water from public community water systems. A public water system is defined as a water system that pipes water for human consumption that has at least 15 service connections or regularly serves at least 25 individuals 60 days or more a year (NJDEP 2024).

7.1.3 Location

New Jersey is divided into six drought regions that are based on regional similarities in water supply sources and rainfall patterns (see Figure 7-2). These regions were developed based upon hydro-geologic conditions, watershed boundaries, municipal boundaries, and water supply characteristics. Passaic County is located in the Northeast Region. According to the NJDEP, rivers and reservoirs are major supply sources in this region and unconfined groundwater is a minor supply source (NJDEP 2023). Drought region boundaries are contiguous with municipal boundaries because during a water emergency, the primary enforcement mechanism for restrictions is municipal police forces (NJDEP 2022).

7.1.4 Extent

The severity of a drought depends on the degree of moisture deficiency, the duration, and the size and location of the affected area. The longer the duration of the drought and the larger the area impacted, the more severe the potential impacts (NIDIS 2023). The State of New Jersey uses a multi-index system that takes advantage of multiple indices to determine the severity of a drought or extended period of dry conditions (NJDEP 2024).

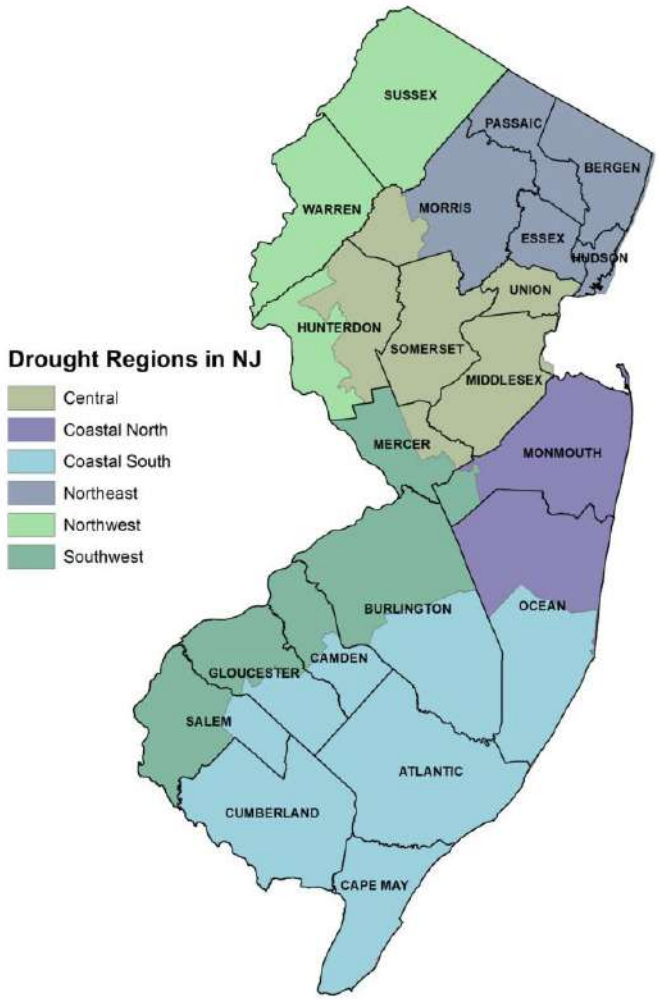
U.S. Drought Monitor

The U.S. Drought Monitor uses five classifications for drought: abnormally dry (D0), moderate drought (D1), severe drought (D2), extreme drought (D3), and exceptional drought (D4). Table 7-2 describes these drought categories. Moderate and severe droughts have short-term impacts, typically last less than six months, and primarily affect agriculture and grasslands. Extreme and exceptional droughts have longer term impacts and typically last longer than six months and affect hydrology and ecology (NIDIS 2023).

Palmer Drought Severity Index

The Palmer Drought Severity Index (PDSI) is commonly used by drought monitoring agencies for drought reporting. The PDSI is primarily based on soil conditions. Soil with decreased moisture content is the first indicator of an overall moisture deficit. Table 7-3 lists the PDSI classifications. At one end of the spectrum, zero is used as normal and drought is indicated by negative numbers. For example, -2 is moderate drought, -3 is severe drought, and -4 is extreme drought. The PDSI also reflects excess precipitation using positive numbers (NCAR 2023).

Figure 7-2. New Jersey Drought Regions



Source: NJDEP

Table 7-2. U.S. Drought Monitor Classifications

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting and growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.
D1	Moderate drought	Some damage to crops and pastures; fire risk high; streams, reservoirs, or wells low; some water shortages developing or imminent; voluntary water-use restrictions requested.
D2	Severe drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.
D3	Extreme drought	Major crop or pasture losses; extreme fire danger; widespread water shortages or restrictions.
D4	Exceptional drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.

Source: (NIDIS 2023)

Table 7-3. Palmer Drought Category Descriptions

Palmer Drought Index	Description	Palmer Drought Index	Description
4.0 or more	Extremely wet	-0.99 to -0.5	Incipient dry spell
3.0 to 3.99	Very wet	-1.99 to -1.0	Mild drought
2.0 to 2.99	Moderately wet	-2.99 to -2.0	Moderate drought
1.0 to 1.99	Slightly wet	-3.99 to -3.0	Severe drought
.05 to 0.99	Incipient wet spell	-4.0 or less	Extreme drought
-0.49 to 0.49	Near norm		

Source: (NDMC 2023)

Watches, Warnings, and Emergencies

New Jersey's Division of Water Supply and Geoscience monitors water supply conditions in the state based on the five water supply regions(see Figure 7-1). The water supply conditions aid NJDEP in declaring the regions as being at one of the following stages of drought (NJDEP 2024):

- ***Normal Conditions*** indicate no drought conditions are present. There is routine monitoring of water supply and meteorological indicators.
- A ***Drought Watch*** is issued when drought or other factors begin to adversely affect water supply conditions. A watch indicates that conditions are dry but not significantly so. During a drought watch, NJDEP closely monitors drought indicators (including precipitation, stream flows, reservoir and ground water levels, and water demand) and consults with affected water suppliers. The aim of a drought watch is to avert a more serious water shortage that would necessitate declaration of a water emergency and the imposition of mandatory water use restrictions, bans on water use, or other potentially drastic measures.
- A ***Drought Warning*** represents a non-emergency phase of managing water supplies during the developing stages of drought. Under a drought warning, the commissioner of the NJDEP may order water purveyors to develop alternative sources of water or transfer water from areas of the state with more water to those with less. While mandatory water use restrictions are not imposed, the general public is strongly urged to use water sparingly in affected areas.
- A ***Drought Emergency*** can only be declared by the governor. Efforts initiated under a water emergency focus on reducing water demand. A phased approach to restricting water consumption is typically initiated. Phase I water use restrictions typically target non-essential, outdoor water use.

7.1.5 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has been included in two major disaster (DR) or emergency (EM) declarations for drought-related events (FEMA 2023). Table 7-4 lists these declarations.

USDA Declarations

The U.S. Secretary of Agriculture can designate counties as disaster areas to make emergency loans from the USDA to producers suffering losses in those counties and contiguous counties. Between 2019 and 2023, Passaic County was included in two USDA drought-related agricultural disaster declarations, as listed in Table 7-5.

Table 7-4. FEMA Declarations for Drought Events in Passaic County

Event Date	Declaration Date	Declaration Number	Description
August 18, 1965	August 18, 1965	DR-205-NJ	Water Shortage
October 19, 1980	October 19, 1980	EM-3083-NJ	Water Shortage

Source: FEMA 2023

Table 7-5. USDA Declarations for Drought Events in Passaic County (2019 to 2023)

Event Date	USDA Declaration Number	Description
July 1, 2022, to August 19, 2022	S5345	Drought and Excessive Heat
August 9, 2022	S5306	Drought

Source: USDA 2024

Previous Events

Known hazard events that impacted Passaic County between August 2019 and December 2023 are discussed in Table 7-6. For events prior to 2019, refer to the 2020 Passaic County HMP.

Table 7-6. Drought Events in Passaic County (2019 to 2023)

Event Date	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
September 24 -October 28, 2019	N/A	N/A	County-wide	The County was in D0 drought status.
March 17-30, 2020	N/A	N/A	County-wide	The County was in D0 drought status.
June 30-August 10, 2020	N/A	N/A	County-wide	The County was in D0 drought status.
May 4-June 7, 2021	N/A	N/A	County-wide	The County was in D0 drought status.
February 1-March 21, 2022	N/A	N/A	County-wide	The County was in D0 drought status.
March 22-April 11, 2022	N/A	N/A	County-wide	The County was in D0 drought status.
July 5, 2022-January 31, 2023	USDA S5406	Yes	State-wide	From July 5 to August 8, 2022, the County was in D0 drought status. A Drought Watch was issued on August 9, 2022. Stream flow and ground water levels fell below normal for most of the state and some reservoirs showed steep rates of decline. The county re-entered D0 drought status on October 25, 2022, and exited drought status on January 30, 2023.
April 4-May 1, 2023	N/A	N/A	County-wide	The County was in D0 drought status.
June 6-July 17, 2023	N/A	N/A	County-wide	From June 6 to July 10, 2023, the County was in D0 drought status. From June 20 to July 3, 2022, the County was in D1 drought status. The County re-entered D0 drought status on July 4 and exited drought status on July 17, 2023.

Source: National Drought Mitigation Center 2023, US Drought Monitor 2023, FEMA 2023, NOAA NCEI 2023

7.1.6 Probability of Future Occurrences

Probability Based on Previous Occurrences

Information from the NCEI Storm Events Database, the State of New Jersey 2024 All-Hazard Mitigation Plan, and FEMA were used to identify the number of events that occurred between 1950 and 2023. Table 7-7 provides calculated probability of future drought events in Passaic County based on this past history. The National Weather Service Climate Prediction Center can provide seasonal outlooks for droughts that last for three-month increments (NIDIS n.d.).

Based on risk factors for past occurrences, it is likely that droughts of varied severity will occur across the State of New Jersey and Passaic County in the future. The probability of occurrence for drought in the County is considered "occasional."

Table 7-7. Future Occurrence of Drought Events in Passaic County

Hazard Type	Number of Occurrences Between 1950 and 2023	% Chance of Occurrence in Any Given Year
Drought	20	27%

Source: NOAA-NCEI 2024; FEMA 2024; NJOEM 2024

Effect of Climate Change on Future Probability

The pressure on water resources due to diverse water demands are likely to be worsened by future climate change. Warming is projected by the end of the 21st century. Increases in the number of extremely hot days and decreases in the number of extremely cold days are projected to accompany the overall warming. According to state-level analysis, by the middle of the 21st century an estimated 70 percent of summers in the northeast region are anticipated to be hotter than what the current warmest summers on record (National Centers for Environmental Information 2022). These trends will affect the probability and frequency of dry conditions that could lead to drought events in Passaic County.

7.1.7 Cascading Impacts on Other Hazards

Drought increases conditions that may trigger fires in the County, such as dead and dying trees, and grasses. Additionally, droughts can lead to the following (NIDIS 2019):

- Long-term damage to crop quality and crop losses
- Insect infestation leading to crop losses and reduced tree canopy
- Reduction in the ability to perform outdoor activities, which could result in loss of tourism and recreation

7.2 VULNERABILITY AND IMPACT ASSESSMENT

All of Passaic County has been identified as the hazard area for drought, so all assets (population, structures, critical facilities, and lifelines) are potentially vulnerable to this hazard. A qualitative assessment was conducted to evaluate the assets exposed to this hazard and its potential impacts.

7.2.1 Life, Health, and Safety

Overall Population

For this plan, the entire population of the County (519,986) is considered vulnerable to drought events. Drought can cause a shortage of water for human and can reduce local firefighting capabilities. Social impacts of drought include mental and physical stress, public safety threats (increased threat from forest/grass fires), health threats, conflicts among water users, and reduced quality of life. Public health impacts may include increased effects on air quality; diminished living conditions related to energy, air quality, and sanitation and hygiene; compromised food and nutrition; and increased incidence of illness and disease (Centers for Disease Control and Prevention 2021).

Socially Vulnerable Population

Socially vulnerable populations may be especially susceptible to drought based on their physical and financial ability to react or respond during a drought. The infirm, young, and elderly are particularly susceptible to drought due to their age, health conditions, and limited ability to mobilize to shelters, cooling, and medical resources.

Without a quantitative assessment of potential impacts of a drought on socially vulnerable populations, the Planning Partners can best assess mitigate options through an understanding of the general numbers and locations of such populations across Passaic County. Section 3.6.3 provides detailed data on socially vulnerable populations within the planning area. Table 6-5 summarizes highlights of this information. For planning purposes, it is reasonable to assume that percentages and distribution of socially vulnerable populations affected by a drought will be similar to the countywide numbers.

Table 7-8. Distribution of Socially Vulnerable Populations by Municipality

	Countywide Total		Municipality Highest in Category		Municipality Lowest in Category	
Category	Number	Percent	Number	Percent	Number	Percent
			Paterson	North Haledon	Prospect Park	Passaic
Population Over 65	**78,440**	**15.1%**	**18,141**	**24.6%**	**625**	**9.0%**
			Paterson	Passaic, Prospect Park	Bloomingdale	Bloomingdale
Population Under 5	**33,502**	**6.4%**	**12,442**	**8.3%**	**247**	**3.2%**
Non-English-			Paterson	Passaic	Bloomingdale, Ringwood	Ringwood
Speaking Population	**68,953**	**13.3%**	**34,885**	**22.4%**	**104**	**0.9%**
Population With			Paterson	Prospect Park	Bloomingdale	Pompton Lakes
Disability	**46,707**	**9.0%**	**12,756**	**14.3%**	**588**	**7.2%**
Population Below			Paterson	Paterson	Ringwood	Ringwood
Poverty Level	**68,995**	**13.3%**	**37,143**	**23.5%**	**262**	**2.2%**
Households Below			Paterson	Paterson	North Haledon	Ringwood
ALICE Threshold	**62,752**	**35%**	**33,284**	**67%**	**745**	**22%**

7.2.2 General Building Stock

No structures are anticipated to be directly affected by a drought. However, droughts contribute to conditions conducive to wildfires and reduce fire-fighting capabilities. Refer to Chapter 13 for the wildfire risk assessment.

7.2.3 Community Lifelines and Other Critical Facilities

Droughts generally do not impact buildings, but they have the potential to impact agriculture-related facilities, critical facilities, and lifelines that are associated with water supplies, such as potable water systems. Critical facilities and lifelines in and adjacent to wildfire hazard areas are also considered vulnerable to drought.

7.2.4 Economy

Drought can produce a range of impacts that span many economic sectors and can reach beyond an area experiencing physical drought. Water withdrawals are used for potable water, for the commercial, industrial, and mining sectors, and for power generation. If a water emergency is declared for the state, the NJDEP may impose mandatory water restrictions and require specific actions to be taken by water suppliers. In these cases, the state seeks to cause as little disruption as possible to commercial activity and employment (FERC 2020).

A prolonged drought can have a serious economic impact on a community. When drought conditions persist with little to no relief, water restrictions may be put into place by local or state governments. These restrictions may include placing limitations on when or how frequent lawns can be watered, car washing services, or any other recreational/commercial outdoor use of water supplies. In exceptional drought conditions, watering of lawns and crops may not be an option. If crops are not able to receive water, farmland will dry out and crops will die. This can lead to crop shortages, which, in turn, increases the price of food (North Carolina State University 2013).

Increased demand for water and electricity can also result in shortages and higher costs for these resources. Industries that rely on water for business could be impacted the most (e.g., landscaping businesses). Although most businesses will still be operational, they may be impacted aesthetically. These aesthetic impacts are most significant within the recreation and tourism industry. Moreover, droughts within another area could impact the food supply and price of food for residents within the county.

7.2.5 Natural, Historic and Cultural Resources

Natural

Droughts can exacerbate conditions conducive to wildfires, increase insect infestations, and exacerbate the spread of disease (Intergovernmental Panel on Climate Change 2016). Droughts will also impact water resources that are relied upon by aquatic and terrestrial species. Ecologically sensitive areas, such as wetlands, can be particularly vulnerable to drought periods because they are dependent on steady water levels and soil moisture availability to sustain growth (FERC 2020).

If water is not getting into the soils, the ground will dry up and become unstable. Unstable soils increase the risk of erosion and loss of topsoil. Droughts also have the potential to lead to water pollution due to the lack of rainwater to dilute any chemicals in water sources. Contaminated water supplies may be harmful to plants and animals (North Carolina State University 2013).

Drought affects groundwater sources, but generally not as quickly as surface water supplies. Groundwater supplies generally take longer to recover. Reduced precipitation during a drought means that groundwater supplies are not replenished at a normal rate. This can lead to a reduction in groundwater levels. Reduced replenishment of groundwater affects streams also. Much of the flow in streams comes from groundwater, especially during the summer when there is less precipitation and after snowmelt ends. Reduced groundwater levels mean that even less water will enter streams when steam flows are lowest (NJDEP 2021).

Historic

The primary impacts on historic resources from drought would be an increased risk of wildfires, which could threaten these assets, and impacts on structure foundations from the shrink-swell cycle of expansive soils.

Cultural

Prolonged drought and seasonal aridity can exacerbate soil deflation and erosion, potentially uncovering previously buried archaeological sites (USDA Forest Service 2018). This exposure increases the vulnerability of these sites to further damage and loss, posing a significant threat to the preservation of cultural heritage (USDA Forest Service 2018).

7.3 FUTURE CHANGES THAT MAY AFFECT RISK

7.3.1 Potential or Planned Development

Areas targeted for future growth and development have been identified across Passaic County. The State of New Jersey Water Supply Plan indicates seasonal outdoor water use is rising statewide and is attributable to continued suburbanization and increases in residential and commercial lawn and landscape maintenance. Changes in water demand by commercial/industrial users will depend on future development of this water type use and how effectively efficiency techniques are implemented (State of New Jersey 2017).

7.3.2 Projected Changes in Population

Projected population increases in Passaic County can exacerbate the impacts of drought in several ways. A larger population will lead to higher demand for water for residential, agricultural, and industrial uses, straining existing water supplies and making management during drought conditions more challenging (NEEF 2024). This increased demand will also put additional pressure on water infrastructure, leading to more frequent breakdowns and maintenance issues, complicating water distribution. With more people relying on the same water sources, the risk of water shortages during prolonged dry periods increases, leading to stricter water use restrictions and competition for limited resources. Additionally, increased population density can lead to more development and urbanization, reducing natural landscapes that help recharge groundwater and maintain ecological balance, further reducing water availability during droughts. Overall, the projected population growth in Passaic County will likely intensify the challenges associated with managing water resources and mitigating the impacts of drought.

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

7.3.3 Climate Change

Most studies project that the State of New Jersey will experience more frequent droughts, which may affect the availability of water supplies, primarily placing an increased stress on the population and their available potable water. Agricultural needs may increase if the climate grows warmer but may decrease if more efficient irrigation techniques are adopted broadly or if precipitation increases. A decrease in water supply, or increase in water supply

demand, may increase the County’s vulnerability to structural fire and wildfire events. Critical water-related service sectors may need to adjust management practices and actively manage resources to accommodate future changes.

7.3.4 Other Identified Conditions

The State of New Jersey is expected to see an increase in the occurrence of droughts, which could impact the availability of water supplies and place added strain on the population and their access to clean drinking water. A decrease in water supply, or an increase in demand for water, may heighten the County's susceptibility to structural fires and wildfires. Consequently, it may be necessary for critical water-related service sectors to modify their management strategies and proactively allocate resources to adapt to forthcoming shifts.

8. EXTREME TEMPERATURES

8.1 HAZARD PROFILE

8.1.1 Hazard Description

Extreme temperature includes both heat and cold events, which can have a significant impact on human health, commercial/agricultural businesses, and primary and secondary effects on infrastructure (such as burst pipes and power failure). What constitutes extreme cold or extreme heat can vary across different areas of the country, based on temperatures that are typical for the area.

Extreme Cold

Extreme cold events occur when temperatures drop well below what is normal for an area. For example, near-freezing temperatures are considered “extreme cold” in regions relatively unaccustomed to winter weather. In regions that are subjected to temperatures below freezing on a regular basis, “extreme cold” might be used to describe temperatures below 0 °F. For the purposes of this HMP, extreme cold is defined as when the ambient air temperature drops to 0 ºF or below (NWS n.d.). It also considers wind chill, which is how wind and cold feel on exposed skin. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature.

Extreme Heat

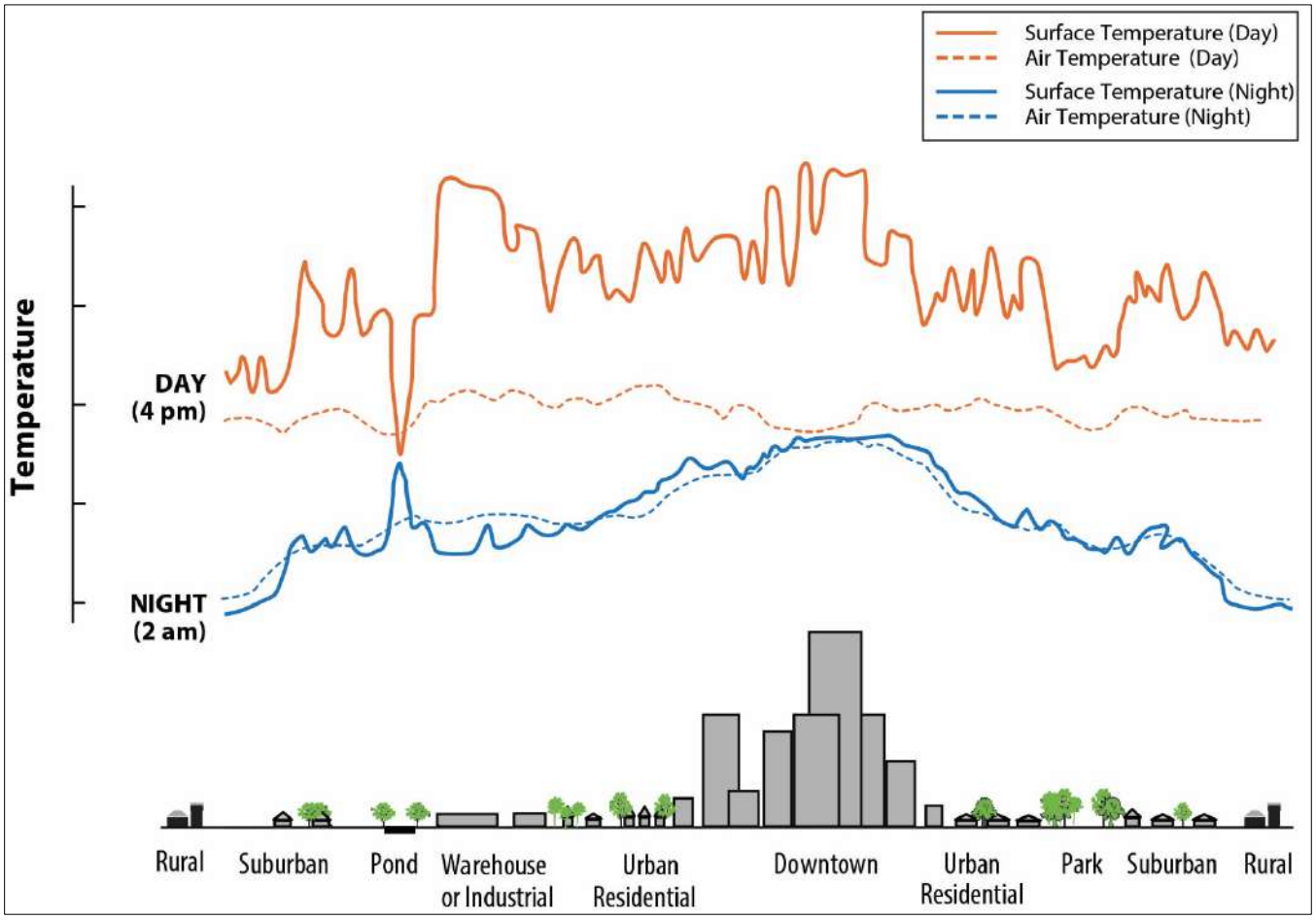
Extreme heat is defined as temperatures that hover 10 °F or more above the average high temperature for a region (CDC 2024). A heat wave is a period of abnormally and uncomfortably hot and unusually humid weather. Humid or muggy conditions occur when a dome of high atmospheric pressure traps hazy, damp air near the ground. A heat wave will typically last two or more days (FERC 2020).

Urbanization exacerbates risk during an extreme heat event. As urban areas develop, buildings, roads, and other infrastructure replace open land and vegetation. Surfaces that were once permeable and moist become impermeable and dry. These changes cause urban areas to become warmer than the surrounding areas, forming an “island” of higher temperatures. A “heat island” is a built up area that is hotter than nearby rural areas. The annual mean air temperature of a city with more than 1 million people can be 2 ºF to 5 ºF warmer than its surroundings. In the evening, the difference in air temperatures can be as high as 22 ºF.

As shown in Figure 8-1, surface temperatures vary more than atmospheric air temperatures during the day, but they are generally similar at night. On a hot, sunny day, the sun can heat dry, exposed urban surfaces to temperatures 50 ºF to 90 ºF hotter than the air. The dips and spikes in surface temperatures over the pond area show how water maintains a nearly constant temperature day and night because it does not absorb the sun’s energy the same way as buildings and paved surfaces. Parks, open land, and bodies of water can create cooler areas within a city. Temperatures are typically lower at suburban-rural borders than in downtown areas.

Heat islands can affect communities by increasing peak energy demand during the summer, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and death, and water quality degradation (EPA 2024).

Figure 8-1. Urban Heat Island Effect Diagram



Source: US EPA 2023

8.1.2 Location

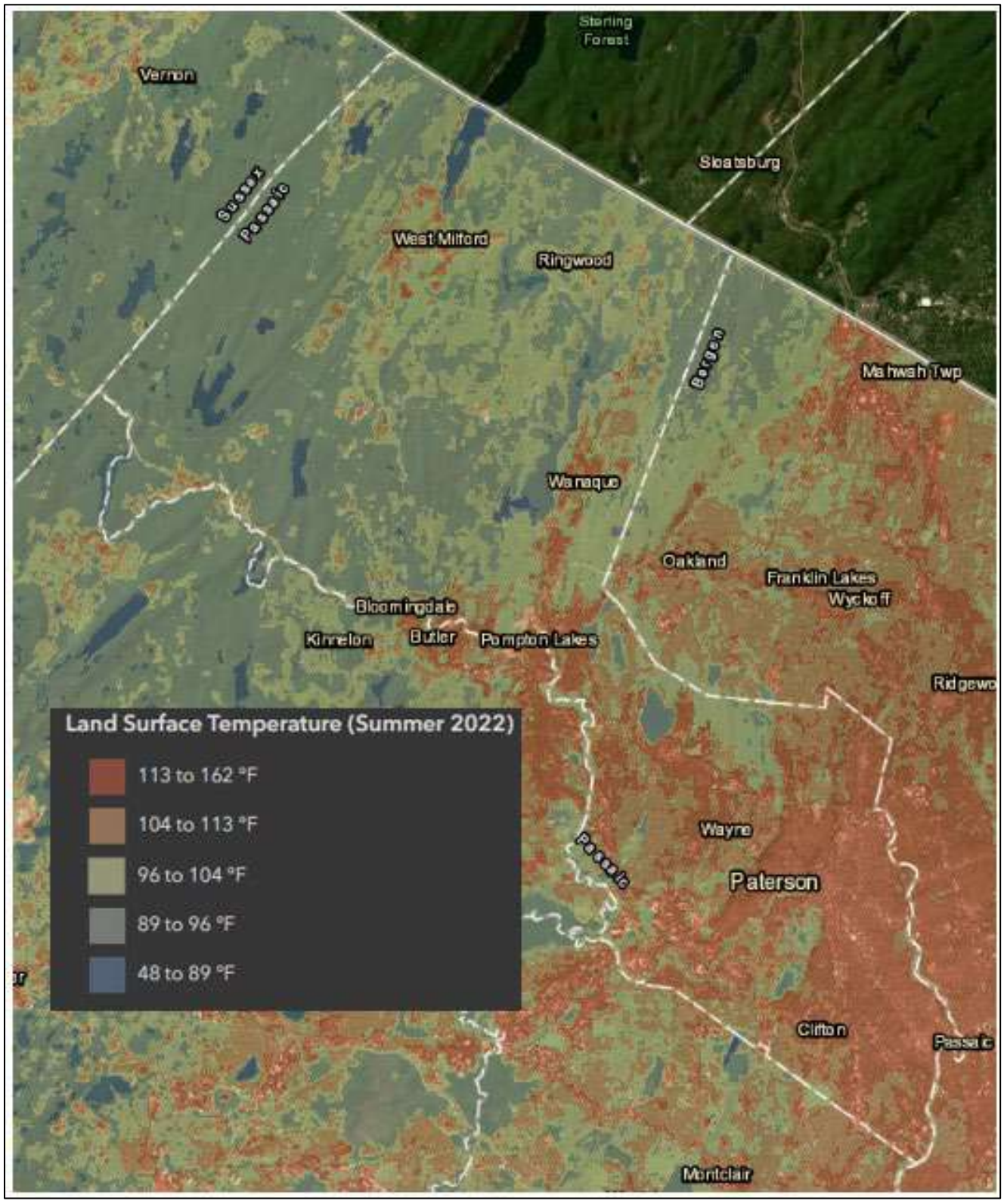
NJDEP used satellite imagery in the summer of 2022 to map land surface temperatures across the state. The highest land surface temperatures (113°F to 162°F) were concentrated in Bergen, Essex, Hudson, Middlesex, and Union counties as well as eastern Passaic County and central Somerset County (NJOEM 2024). Figure 8-2 shows the land surface temperature for Passaic County from the NJDEP study.

8.1.3 Extent

Extreme Cold

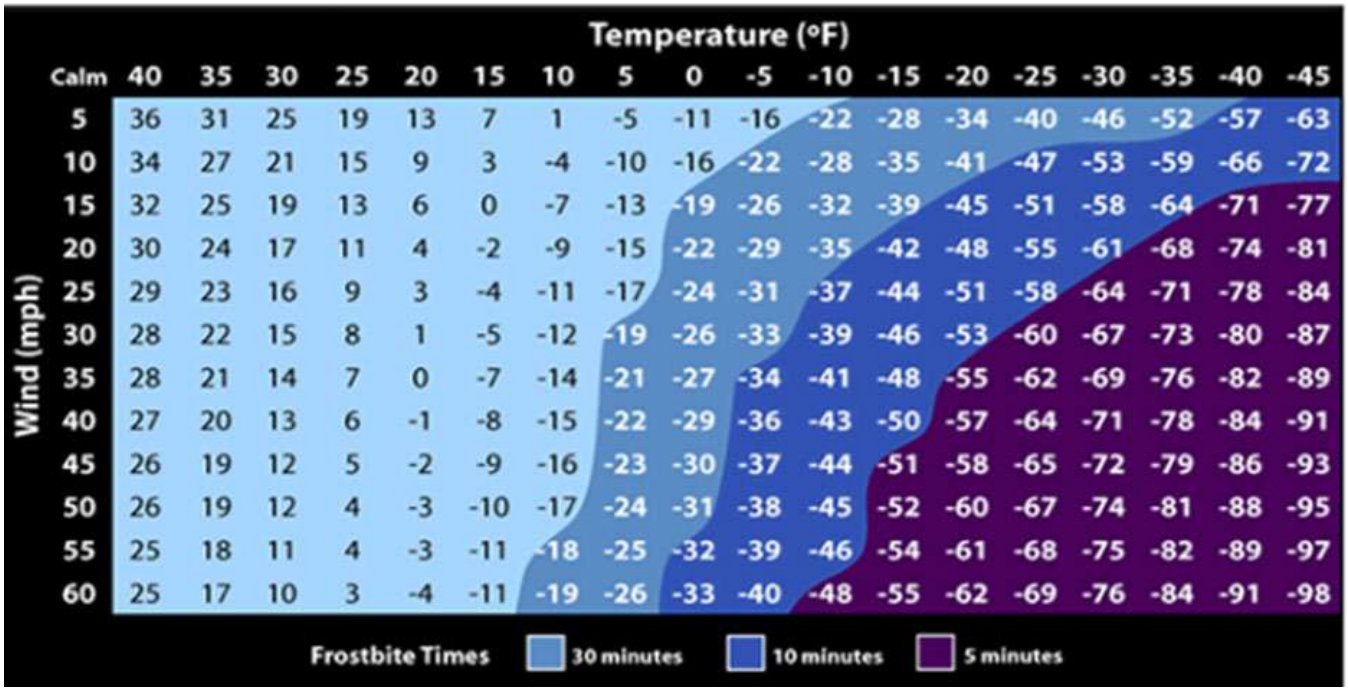
The extent (severity or magnitude) of extreme cold temperatures is generally measured through the wind chill index (see Figure 8-3). Wind chill represents what the air temperature feels like to the human skin due to the combination of cold temperatures and winds blowing on exposed skin. The colder the air temperature and the higher the wind speeds, the colder it will feel on skin (NOAA n.d.). The wind chill index is only applicable when temperatures are at or below 50°F and wind speeds are above 3 mph.

Figure 8-2. UHI Effect and Land Surface Temperature in Passaic County



Source: (NJDEP 2023)

Figure 8-3. Wind Chill Index



Source: NWS 2021

As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. Wind amplifies the cooling effect by blowing away the thin layer of warm air near a person's skin, making it feel colder than the actual air temperature. The following health hazards are related to extreme cold temperatures (NWS 2022):

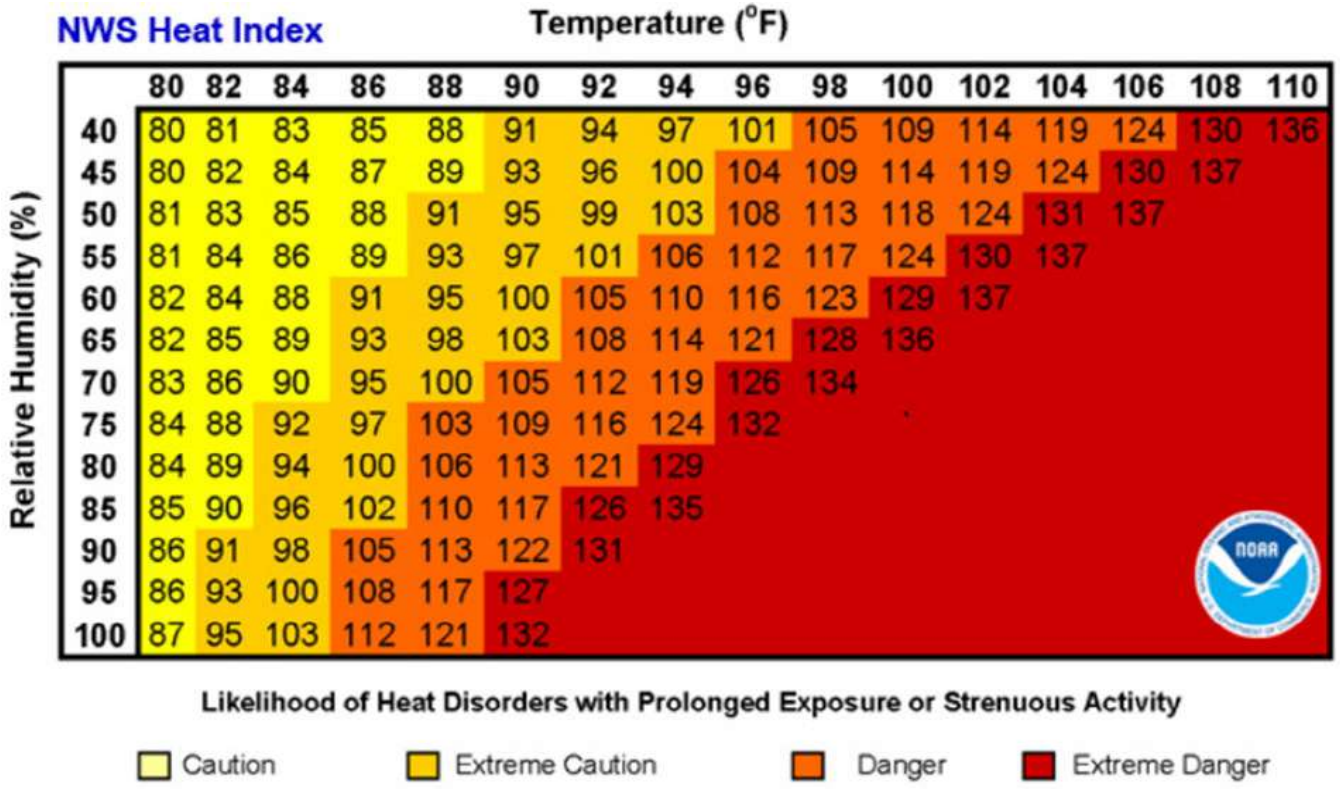
- Frostbite is damage to body tissue caused by extreme cold. A wind chill of -20 °F will cause frostbite in just 30 minutes. Frostbite can cause a loss of feeling and a white or pale appearance in extremities.
- Hypothermia is a condition brought on when the body temperature drops to less than 95 °F, and it can be deadly. Warning signs of hypothermia include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.

Extreme Heat

The extent of extreme heat temperatures is generally measured through the heat index, identified in Figure 8-4. The heat index measures apparent temperature of the air as it increases with the relative humidity. The values are determined for shady, light wind conditions. Exposure to full sun can increase the index by up to 15 °F (NYS DHSES 2023). Table 8-1 outlines the effects of prolonged exposure to heat on the human body during extreme heat.

The NWS issues excessive heat outlooks when the potential exists for an excessive heat event in the next three to seven days. Watches are issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. Excessive heat warning/advisories are issued when an excessive heat event is expected in the next 36 hours (NWS 2021).

Figure 8-4. NWS Heat Index Chart – Shaded Areas



Source: NWS 2021

Table 8-1. Adverse Effects of Prolonged Exposure to Heat

Category	Heat Index	Effects on the Body
Caution	80°F - 90°F	Fatigue is possible with prolonged exposure and/or physical activity
Extreme Caution	90°F - 103°F	Heat stroke, heat cramps, or heat exhaustion is possible with prolonged exposure and/or physical activity
Danger	103°F - 124°F	Heat cramps or heat exhaustion is likely, and heat stroke is possible with prolonged exposure and/or physical activity
Extreme Danger	125°F or higher	Heat stroke is highly likely

Source: NWS n.d.

The following health hazards are related to extreme high temperatures (NIDIS n.d.):

- Heat exhaustion is the body's response to an excessive loss of water and salt, usually through excessive sweating. Symptoms can include headache, cramping, dizziness, and weakness.
- Heat stroke occurs when the body can no longer control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106°F or higher within 10 to 15 minutes. Heat stroke can cause permanent disability or death if the person does not receive emergency treatment.

8.1.4 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has not been included in any major disaster (DR) or emergency (EM) declarations for extreme-temperature-related events (FEMA 2023).

USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Between 2017 and 2023, Passaic County was included in four USDA extreme temperature-related agricultural disaster declarations, as listed in Table 7-5.

Table 8-2. USDA Declarations for Extreme Temperatures Events in Passaic County (2017 to 2023)

Event Date	USDA Declaration Number	Description
April 6, 2020 to May 15, 2020	S4748	Freeze and frost
August 9, 2022	S5306	Drought; Persistent Dry/Hot Conditions
July 1, 2022 to August 19, 2022	S5345	Drought and Excessive Heat
May 17 – 18, 2023	S5644	Freeze and Frost

Source: USDA 2024

Previous Events

Known hazard events that impacted Passaic County between August 2019 and December 2023 are listed in Table 8-3. For events prior to 2019, refer to the 2020 Passaic County HMP.

Table 8-3. Extreme Temperature Events in Passaic County (2019 to 2023)

Event Date	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
April 6 – May 15, 2020	N/A	N/A	Countywide	Freeze and frost, USDA declaration S4748
August 9, 2022	N/A	N/A	Countywide	Drought; Persistent Dry/Hot Conditions, USDA declaration S5306
July 1 – August 19, 2022	N/A	N/A	Countywide	Drought and Excessive Heat, USDA declaration S5345
May 17 – 18, 2023	N/A	N/A	Countywide	Freeze and Frost, USDA declaration S5644

Source: NOAA NCEI 2024; USDA 2024

8.1.5 Probability of Future Occurrences

Probability Based on Previous Occurrences

Information on previous extreme temperature occurrences in the County was used to calculate the probability of future occurrence of such events, as summarized in Table 8-4. Based on historical records and input from the Steering Committee, the probability of occurrence for extreme temperature in the County is considered "frequent."

Table 8-4. Probability of Future Extreme Temperature Events in Passaic County

Hazard Type	Number of Occurrences Between 1996 and 2023	Percent Chance of Occurring in Any Given Year
Extreme Cold/Wind Chill	8	28%
Cold/Wind Chill	2	7%
Excessive Heat	6	21%
Heat	10	36%
Total	**26**	**93%**

Source: FEMA 2023; NOAA NCEI 2024; USDA 2024
Note: Due to limitations in data, not all extreme temperature events occurring are accounted for in the tally of occurrences.

Effect of Climate Change on Future Probability

Climate change includes major changes in temperature over several decades or longer. Since the end of the 1890s, New Jersey has experienced a 3.5° F increase in average temperature, which is greater than the increase in the rest of the northeastern United States(2° F) and the world (1.5° F) (IPCC 2014). This warming trend is expected to continue. By 2050, temperatures in the State of New Jersey are expected to increase by 4.1 to 5.7 °F. Future temperatures could be as much as 10° F warmer than historical averages.

The state can also expect that by the middle of the 21st century, 70 percent of summers will be hotter than the warmest summer experienced to date. The increase in temperatures is expected to be felt more during the winter (December, January, and February), resulting in less intense cold waves, fewer sub-freezing days, and less snow accumulation (NJDEP 2020).

8.1.6 Cascading Impacts on Other Hazards

Extreme temperature events can exacerbate the drought hazard, increase the potential risk of wildfires, and escalate severe weather and severe winter weather events for the County. For example, extreme heat events may accelerate evaporation rates, which may dry out the air and soils, making some terrestrial plants and soil more susceptible to catching fire. Extreme variation in temperatures could also create ideal atmospheric conditions for severe storms or worsen the outcome of severe winter weather during freezing and thawing periods. Extreme cold may result in an increase in flooding as a result of ice jams altering the flow and release of water.

8.2 VULNERABILITY AND IMPACT ASSESSMENT

All of Passaic County has been identified as the hazard area for extreme temperatures. Therefore, all assets in the County (population, structures, critical facilities, and lifelines) are vulnerable to this hazard.

8.2.1 Life, Health, and Safety

Overall Population

The entire population of Passaic County (519,986) is exposed to extreme temperature events. Potential health impacts include injury and death. Health hazards related to extreme cold temperatures include wind chill, frostbite, and hypothermia. Health hazards related to extreme high temperatures include heat exhaustion and heat stroke. Adhering to extreme temperature warnings and conducting appropriate mitigation and preparation measures can significantly reduce the risk of temperature-related deaths.

Workers who are exposed to extreme heat may be at risk of heat stroke, heat exhaustion, heat cramps, or heat rashes. Heat can also increase the risk of injuries in workers as it may result in sweaty palms, fogged-up safety glasses, and dizziness. Burns may occur as a result of accidental contact with hot surfaces. Working outdoors increases the chances of getting sunburned (Centers for Disease Control and Prevention 2020, Centers for Disease Control and Prevention 2018). Workers exposed to extreme cold temperatures may experience cold stress, leading to cold-related illnesses such as hypothermia, frostbite, trench foot, and chilblains (CDC 2024).

Socially Vulnerable Population

Socially vulnerable populations most at risk to extreme cold and heat events include the elderly, who are less able to withstand temperatures extremes due to their age, health conditions, and limited mobility to access shelters; infants and children up to four years of age; individuals with chronic medical conditions (e.g., heart disease, high blood pressure), and low-income persons that cannot afford proper heating and cooling (CDC 2022, CDC 2005).

Extreme heat can lead to heat-related illnesses such as heatstroke and dehydration, with vulnerable groups often having limited access to air conditioning and cooling centers, increasing their risk (NIHHIS n.d.). Many socially vulnerable individuals work in outdoor or non-climate-controlled environments, such as construction and agriculture, making them more susceptible to heat-related health issues and reduced productivity.

Extreme cold can exacerbate chronic conditions, like cardiovascular and respiratory diseases, with vulnerable populations struggling to afford adequate heating, increasing their risk of hypothermia and frostbite (NIEHS 2022). Poorly insulated housing and homelessness significantly heighten the risks associated with extreme cold, as these groups often lack the resources to improve their living conditions. Additionally, extreme cold can disrupt transportation and access to essential services, such as healthcare and food supplies, disproportionately affecting those with limited mobility or financial resources (EPA 2024).

Without a quantitative assessment of potential impacts of extreme temperatures on socially vulnerable populations, the Planning Partners can best assess mitigation options through an understanding of the general numbers and locations of such populations across Passaic County. Section 3.6.3 provides detailed data on socially vulnerable populations within the planning area. Table 6-5 summarizes highlights of this information. For planning purposes, it is reasonable to assume that percentages and distribution of socially vulnerable populations affected by extreme temperatures will be similar to the countywide numbers.

Meteorologists can accurately forecast extreme heat and cold events and the severity of the associated conditions with several days of lead time. These forecasts provide an opportunity for public health and other officials to notify vulnerable populations, implement short-term emergency response actions, and focus on surveillance and relief efforts on those at greatest risk.

Table 8-5. Distribution of Socially Vulnerable Populations by Municipality

Category	Sussex County Total		Municipality Highest in Category		Municipality Lowest in Category	
	Number	Percent	Number	Percent	Number	Percent
			Paterson	North Haledon	Prospect Park	Passaic
Population Over 65	**78,440**	**15.10%**	**18,141**	**24.6%**	**625**	**9.0%**
			Paterson	Passaic, Prospect Park	Bloomingdale	Bloomingdale
Population Under 5	**33,502**	**6.40%**	**12,442**	**8.3%**	**247**	**3.2%**
Non-English-Speaking Population	**68,953**	**13.30%**	Paterson **34,885**	Passaic **22.4%**	Bloomingdale, Ringwood **104**	Ringwood **0.9%**
Population With Disability	**46,707**	**9.00%**	Paterson **12,756**	Prospect Park **14.3%**	Bloomingdale **588**	Pompton Lakes **7.2%**
Population Below Poverty Level	**68,995**	**13.30%**	Paterson **37,143**	Paterson **23.5%**	Ringwood **262**	Ringwood **2.2%**
Households Below ALICE Threshold	**62,752**	**35%**	Paterson **33,284**	Paterson **67%**	North Haledon **745**	Ringwood **22%**

8.2.2 General Building Stock

All the building stock in the County is exposed to the extreme temperature hazard. Extreme heat generally does not impact buildings; however, elevated summer temperatures increase the energy demand for cooling. Losses can be associated with the overheating of heating, ventilation, and air conditioning (HVAC) systems.

Extreme cold temperature events can damage buildings through freezing/bursting pipes and freeze/thaw cycles, as well as increasing vulnerability to home fires. Additionally, manufactured homes and older or poorly constructed buildings often lack adequate capabilities to withstand extreme temperatures. These deficiencies can include insufficient insulation and less efficient heating systems.

8.2.3 Community Lifelines and Other Critical Facilities

Direct impacts on structures are expected to be minimal. However, it is essential that critical facilities remain operational during natural hazard events. Extreme heat events can sometimes cause short periods of utility failures, commonly referred to as brownouts, created by increased usage from air conditioners, appliances, and similar equipment. Heavy snowfall and ice storms associated with extreme cold temperatures can interrupt power as well. Backup power is recommended for critical facilities and infrastructure. Additionally, designating and developing emergency cooling or heating facilities can enhance the resilience and safety of communities.

8.2.4 Economy

Extreme temperature can lead to loss of business function and damage inventory. Business owners may be faced with increased financial burdens due to unexpected repairs (e.g., pipes bursting), higher than normal utility bills, or business interruption caused by power failure (e.g., loss of electricity and telecommunications) (NJOEM 2024). The agricultural industry is most at risk in terms of economic impact and damage caused by extreme temperature. Extreme heat events can result in drought and directly affect livestock and crop production.

Based on the 2022 Census of Agriculture, 99 farms were present in Passaic County, encompassing 1,830 acres of farmland. The average farm size was 18 acres. Passaic County farms had a total market value of products sold of approximately $4.7 million for crops and approximately $275,000 for livestock (State of New Jersey 2017).

8.2.5 Natural, Historic and Cultural Resources

Natural

During periods of extreme heat, air quality in Passaic County deteriorates significantly. Additionally, the combination of high temperatures and little rainfall creates ideal conditions for wildfires, which further degrade air quality by producing smoke.

Water resources are also heavily impacted by extreme heat. Prolonged high temperatures lengthen the growing season, increasing the demand for irrigation and affecting groundwater volumes. Drought conditions, often associated with extreme heat, can strain both surface and groundwater supplies, especially in areas with limited reservoirs. Freshwater and coastal wetlands face challenges as well. Increased drought frequency and intensity reduce the availability of freshwater vernal pools, which are crucial habitats for many sensitive wildlife species. Rising temperatures also create favorable conditions for invasive species like the clinging jellyfish (NJDEP 2020). Moreover, runoff from hot surfaces elevates the temperature of waterways, further stressing aquatic ecosystems.

Forests and vegetated lands are at heightened risk during extreme heat events. Dry conditions and high temperatures increase the likelihood and duration of wildfires (NJDEP 2020). Additionally, the warmer climate accelerates the maturation of insect pests, allowing them to invade new vegetated areas that previously did not experience such pressures.

Prolonged cold spells can freeze wetland soils, reducing water seepage and causing snowmelt runoff to bypass wetlands (NJOEM 2024). This makes water unavailable during the crucial spring and summer months. Heavy snow and ice accumulation during extreme cold weather can damage trees and crops by breaking vegetation and tree limbs. Prolonged periods of extreme cold can also harm vegetation and crops, negatively impacting the agricultural industry in the region (NJOEM 2024).

Historic

Historic buildings may be susceptible to damage from extreme temperature conditions. Extreme heat can increase the risk of ignition of fires and their propagation. Fire may increase the probability of cracking or splitting in built structures. Long-term impacts include weakened stones and increased susceptibility to deterioration processes such as salt weathering and temperature cycling (Sesana, et al. 2021).

Proper strategies help safeguard buildings and their contents. Sudden and dramatic fluctuations in heating or cooling should be minimized. Slower heating and cooling give building materials and stored contents time to acclimate to new temperatures in the building and corresponding new humidity levels (CCAHA 2019).

Cultural

Historical buildings and homes, which house many cultural artifacts, may not be built to withstand extreme temperature fluctuations, making them more vulnerable to damage. Changes in temperature can affect the structure and composition of building materials, accelerating physical, chemical, and biological degradation processes (Sesana, et al. 2021). Extreme heat can increase the risk of ignition of fires and their propagation. Fire causes material loss and deformation of cultural heritage assets.

8.3 FUTURE CHANGES THAT MAY AFFECT RISK

8.3.1 Potential or Planned Development

New development will change the landscape where buildings, roads, and other infrastructure replace open land and vegetation. Transformation of pervious surfaces (including vegetation) to impervious surfaces causes an island of higher temperatures. Green space preservation will need to continue to be a priority to mitigate increased heat islands. Specific areas of recent and new development are indicated in the jurisdictional annexes in Volume II of this plan. The ability of new development to withstand extreme temperature impacts can be enhanced through land use practices and consistent enforcement of codes and regulations for new construction.

8.3.2 Projected Changes in Population

Population change is not expected to have a measurable effect on the overall vulnerability of the County's population over time. However, drastic increases in less densely populated areas of the County may require utility system upgrades to keep up with demands (e.g., water, electric) during extreme temperature events to prevent increased stresses on these systems.

Furthermore, an increase in the socially vulnerable population, including low-income households, elderly residents, and individuals with pre-existing health conditions, can exacerbate the impacts of extreme heat and cold events (EPA 2025).

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

8.3.3 Climate Change

Projections indicate that New Jersey will continue to warm, with annual temperatures expected to be as warm as the warmest years in the historical record by 2050. This increase in average annual temperatures will lead to more intense heat waves and fewer cold waves, extending the growing season and decreasing the number of sub-freezing days and snow accumulation. As the climate warms, extreme cold events might decrease in frequency, while extreme heat events might increase in frequency and intensity.

Vulnerable populations could face increased risks of heat-related illnesses, and more buildings, facilities, and infrastructure systems may exceed their ability to cope with the heat. Thus, improving building efficiency and upgrading heating and cooling technology will become increasingly important for businesses and homeowners.

8.3.4 Other Identified Conditions

Extreme temperatures can place significant stress on infrastructure, including roads, bridges, and buildings. High temperatures cause materials to expand and contract, leading to cracks and other forms of damage. Additionally, there is often an increased demand for energy during extreme temperatures, particularly for heating and cooling. This surge in energy use can lead to power outages and increased stress on energy grids. Transportation systems are also affected by extreme heat, with rail tracks potentially buckling and asphalt softening.

9. FLOOD

9.1 HAZARD PROFILE

9.1.1 Hazard Description

A flood is an overflow of water from oceans, rivers, groundwater, or rainfall that submerges areas that are usually dry. This natural phenomenon can occur during any season and can be exacerbated by features of the built environment.

Flooding in Passaic County can be the result of heavy rainfall produced by hurricanes moving up the coast, large frontal storms from the west and south, and local thunderstorms (FEMA FIS 2015). Flooding can also result from the failure of a water control structure, such as a dam or levee (NWS 2019). Flood can be exacerbated by other hazards such as sea level rise. Flooding commonly includes one or more of the following scenarios (NWS 2019):

- Riverine overbank flooding
- Flash floods
- Alluvial fan floods
- Mudflows or debris floods
- Dam- and levee-break floods
- Local draining or high groundwater levels
- Fluctuating lake levels
- Ice-jams

For the purpose of this HMP and as deemed appropriate by the Passaic County Steering Committee, the main flood types of concern are riverine, flash flooding, storm surge, stormwater/urban, ice jam, and erosion.

Riverine Flooding

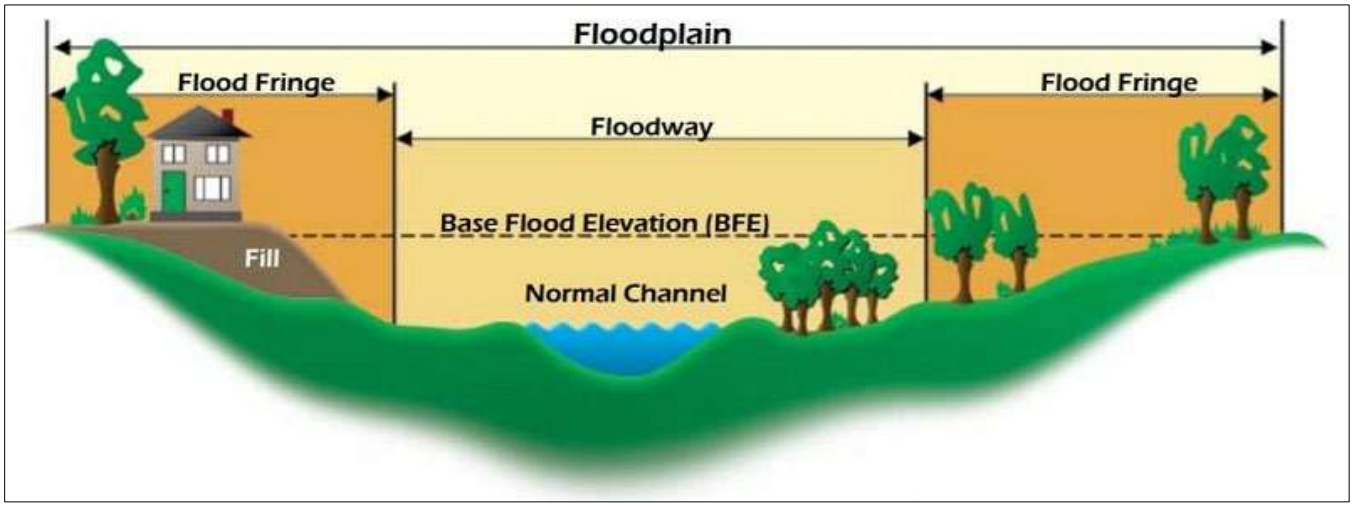
Riverine floods are the most common flood type. They occur along the channels of rivers, creeks, streams, or ditches. When a channel receives too much water, the excess water flows over its banks and inundates low-lying areas (FEMA 2019). The inundated area is called the floodplain (NWS n.d.). Floodplains are typically flat land adjacent to a watercourse that is subject to periodic inundation. A floodplain is made up of the following components (refer to Figure 9-1) (FEMA 2019, US DHS 2019):

- **Floodway:** the channel of a river or other waterway and the adjacent land areas that are under water or reserved to carry and discharge the overflow of water caused by flooding.
- **Flood Fringe:** the area within the floodplain but outside the floodway; this area extends from the outer banks of a floodway to the river valley, where the elevation begins to rise.

Riverine flooding is measured by how frequently a given level of flooding occurs. The 1 percent annual chance flood, also referred to as the base flood or 100-year flood, is a flood with a level that has a 1 percent chance of being equaled or exceeded in any given year. Though commonly called the 100-year flood, this flood can occur more than once in a relatively short period of time. Similarly, the flood with a 0.2 percent chance of being equaled or exceeded each year is often called the 500-year flood but can occur more frequently than that (FEMA 2020).

FEMA prepare maps of the expected floodplains along water courses, based on historical riverine and coastal flooding conditions. In FEMA flood maps, the floodplain inundated by the 1 percent annual chance flood is identified as Special Flood Hazard Area (SFHA). This is the area where flood insurance and floodplain management requirements apply (FEMA 2020).

Figure 9-1. Characteristics of a Floodplain



Source: FEMA 2022

The following are additional definitions relating to flood map:

- **Special Hazard Flood Areas (SFHAs)—**Labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30.
- **Zone B or Zone X (shaded)—**Moderate flood hazard areas. These are the areas between the limits of the base flood and the 0.2 percent annual chance (or 500-year) flood.
- **Zone C or Zone X (unshaded)—**Areas of minimal flood hazard, outside the SFHA and at higher elevations than the elevation of the 0.2 percent annual chance flood.

Mapped floodplain boundaries may require updating as a result of changes in land use or the amount of impervious surface, the placement of obstructing structures in floodways, changes in precipitation and runoff patterns, improvements in technology for measuring topographic features, or new hydrologic modeling techniques (USGS 2016). Flooding outside of the SFHA area may include stormwater or urban flooding and flash flooding. Urban and stormwater flooding and future conditions (e.g., sea level rise and rainfall areas) are not reflected in FEMA floodplain mapping. As such, FEMA floodplain maps may underestimate flood risk in many areas.

Flash Flooding

Flash floods are floods caused by heavy rainfall in a short period of time, generally less than 6 hours (NWS 2009). These floods are usually characterized by raging torrents after heavy rains that rip through riverbeds, urban streets, or mountain canyons. They can occur within minutes or a few hours of excessive rainfall.

Storm Surge

Storm surge causes backwater flooding as a result of rising water elevations at coastal river mouths. Strong winds can increase tide levels and water-surface elevations in the connected bodies of water. Storm systems generate large waves that run up and can push high amounts of water inland along waterways opposite the direction of their typical flow, which can overtop banks and impact adjacent low-lying floodplains.

Stormwater/Urban Flooding

Urban stormwater flooding is flooding caused by local drainage issues and high groundwater levels in areas other than delineated floodplains or along recognizable channels. It is generally the result of increased water runoff due to urban development and inadequate drainage systems. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding problems. During winter and spring, frozen ground and snow accumulations may contribute to inadequate drainage and localized ponding. Flooding of this nature generally occurs in areas with flat gradients and generally increases with urbanization, which speeds the accumulation of floodwaters because of impervious areas. Shallow street flooding can occur unless channels have been improved to account for increased flows. Urban flooding can inundate streets, underpasses, low lying areas, or storm drains (FEMA 2007).

Drainage systems are designed to remove surface water from developed areas as quickly as possible to prevent flooding on streets and other urban areas. Such systems often make use of a closed conveyance system that channels water away from an urban area to surrounding streams. This bypasses the natural processes of water filtration through the ground, containment, and evaporation of excess water. Because drainage systems reduce the amount of time the surface water takes to reach surrounding streams, flooding in those streams can occur more quickly and reach greater depths than prior to development in that area (State of New Jersey 2017). The growing number of extreme rainfall events that produce intense precipitation are resulting in increased urban flooding (State of New Jersey 2017).

High groundwater levels can cause problems even where there is no surface flooding. Basements are susceptible to high groundwater levels. Seasonally high groundwater is common in many areas, though it often occurs only after a long period of above-average precipitation (USGS 2016).

Ice Jam Flooding

An ice jam occurs when pieces of floating ice are carried with a stream's current and accumulate behind an obstruction to the stream flow. Obstructions may include river bends, mouths of tributaries, points where the river slope decreases, dams, or bridges. The water held back by this obstruction can cause flooding upstream, and if the obstruction suddenly breaks, flash flooding can occur (NESEC 2021). The formation of ice jams depends on the weather and physical condition of the river and stream channels. They are most likely to occur where the channel slope naturally decreases, in culverts, and along shallows where channels may freeze solid.

There are two different types of ice jams: freeze-up and breakup. Freeze-up jams occur in the early to mid-winter when floating ice may slow or stop due to a change in water slope as it reaches an obstruction to movement. Breakup jams occur during periods of thaw, generally in late winter and early spring. The ice cover breakup is usually associated with a rapid increase in runoff and corresponding river discharge due to a heavy rainfall, snowmelt, or warmer temperatures (NJOEM 2024).

Erosion

Erosion is the geological process in which earthen materials are worn away and transported by natural forces such as wind or water. Most erosion is performed by liquid water, wind, or ice. Liquid water is the major agent of erosion. Rain, rivers, floods, and lakes carry away bits of soil and sand and slowly wash away the sediment (National Geographic 2023).

9.1.2 Location

Riverine Flooding

Most flooding in Passaic County occurs during the summer and early fall; however, floods have occurred at different times throughout the year. According to the County's Flood Insurance Study (FIS) report, multiple waterways have a history of flooding including the Passaic River, the Molly Ann Brook, the Pequannock River, and the Wanaque River. Many of the bodies of water are the primary source for flooding; however, most flooding is due to indirect causes such as undersized culverts, tidal impacts from headwaters, and confluences with other waterbodies (FEMA FIS 2015).

Flood Mapping

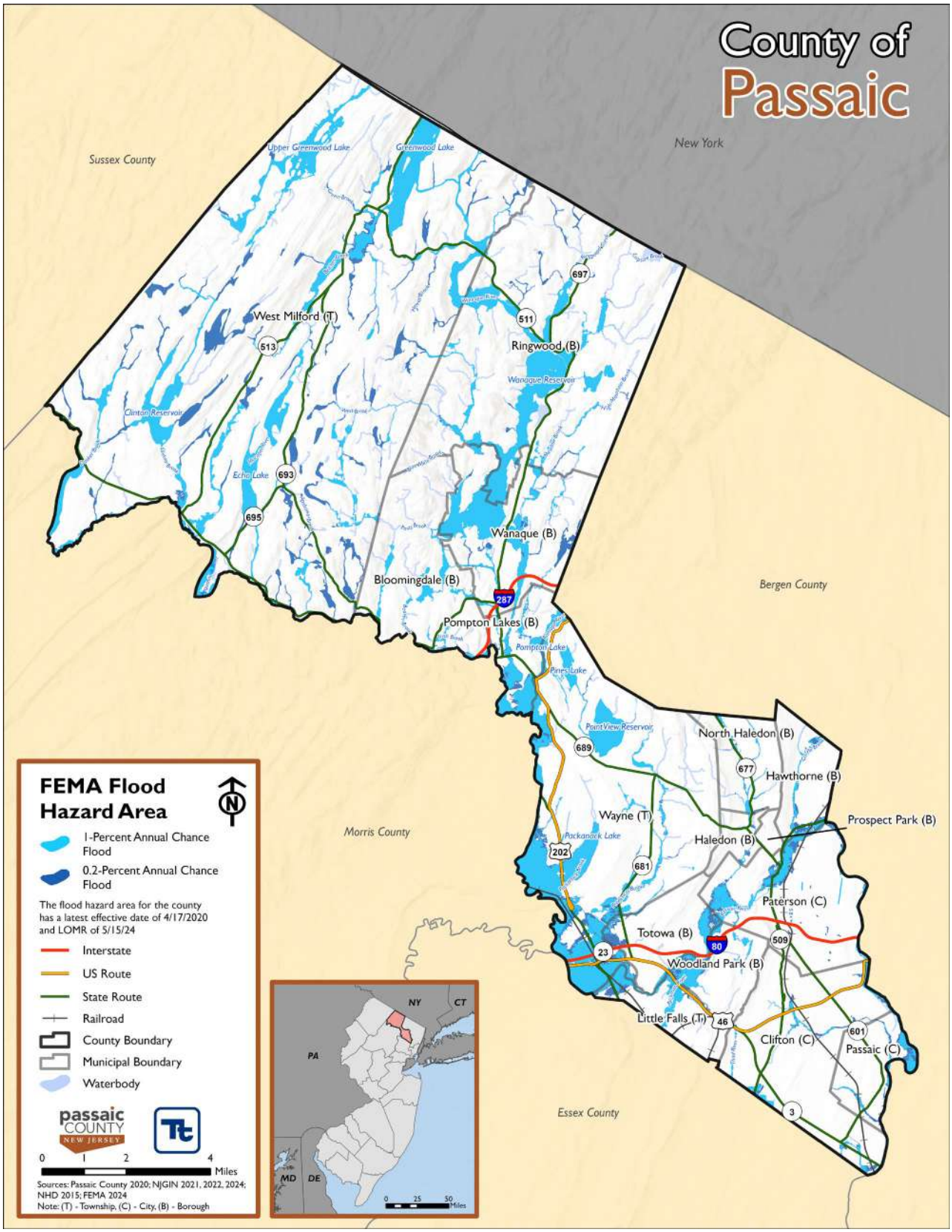
Locations of flood zones in Passaic County, as depicted on the FEMA preliminary Digital Flood Insurance Rate Map (DFIRM), are illustrated in Figure 9-2. The total land area in the floodplain, excluding water bodies, is summarized in Table 9-1.

Table 9-1. Number of Acres in Passaic County Exposed to 1 Percent and 0.2 Percent Annual Chance Flood

Jurisdiction	Total Area Excluding Water Bodies (acres)	Area Excluding Water Bodies in the 1% Annual Chance Flood Hazard Area		Area Excluding Water Bodies in the 0.2% Annual Chance Flood Hazard Area	
		Total Area (acres)	% of Jurisdiction Total	Total Area (acres)	% of Jurisdiction Total
Bloomingdale (B)	5,615.2	179.4	3.2%	209.0	3.7%
Clifton (C)	7,314.8	240.4	3.3%	350.7	4.8%
Haledon (B)	778.6	15.4	2.0%	37.9	4.9%
Hawthorne (B)	2,153.0	147.6	6.9%	245.3	11.4%
Little Falls (T)	1,840.8	327.5	17.8%	417.7	22.7%
North Haledon (B)	2,257.5	95.2	4.2%	122.2	5.4%
Passaic (C)	2,073.4	196.3	9.5%	293.0	14.1%
Paterson (C)	5,564.1	562.2	10.1%	782.9	14.1%
Pompton Lakes (B)	1,831.8	509.5	27.8%	599.3	32.7%
Prospect Park (B)	300.8	3.4	1.1%	7.0	2.3%
Ringwood (B)	15,986.4	452.2	2.8%	620.3	3.9%
Totowa (B)	2,611.0	244.2	9.4%	405.8	15.5%
Wanaque (B)	5,060.5	457.4	9.0%	577.9	11.4%
Wayne (T)	15,232.7	2,684.1	17.6%	3,084.3	20.2%
West Milford (T)	48,071.3	2,007.7	4.2%	3,805.6	7.9%
Woodland Park (B)	1,965.8	322.2	16.4%	383.0	19.5%
Passaic County (Total)	118,657.8	8,444.8	7.1%	11,942.0	10.1%

Source: (NJGIN 2024); (FEMA 2020)

Figure 9-2. FEMA Flood Hazard Areas in Passaic County



Flood Gages

The USGS National Water Information System collects surface water data from more than 850,000 stations across the country. The time-series data describes stream levels, stream flow (discharge), reservoir and lake levels, surface water quality, and rainfall. The data is collected by automatic recorders and manual field measurements at the gage locations. USGS uses stream gages to determine the severity of flood at different points along a body of water. There are numerous gages in Passaic County, in addition to others just outside of the County's boundary, that provide critical flood data for waterways affecting the County.

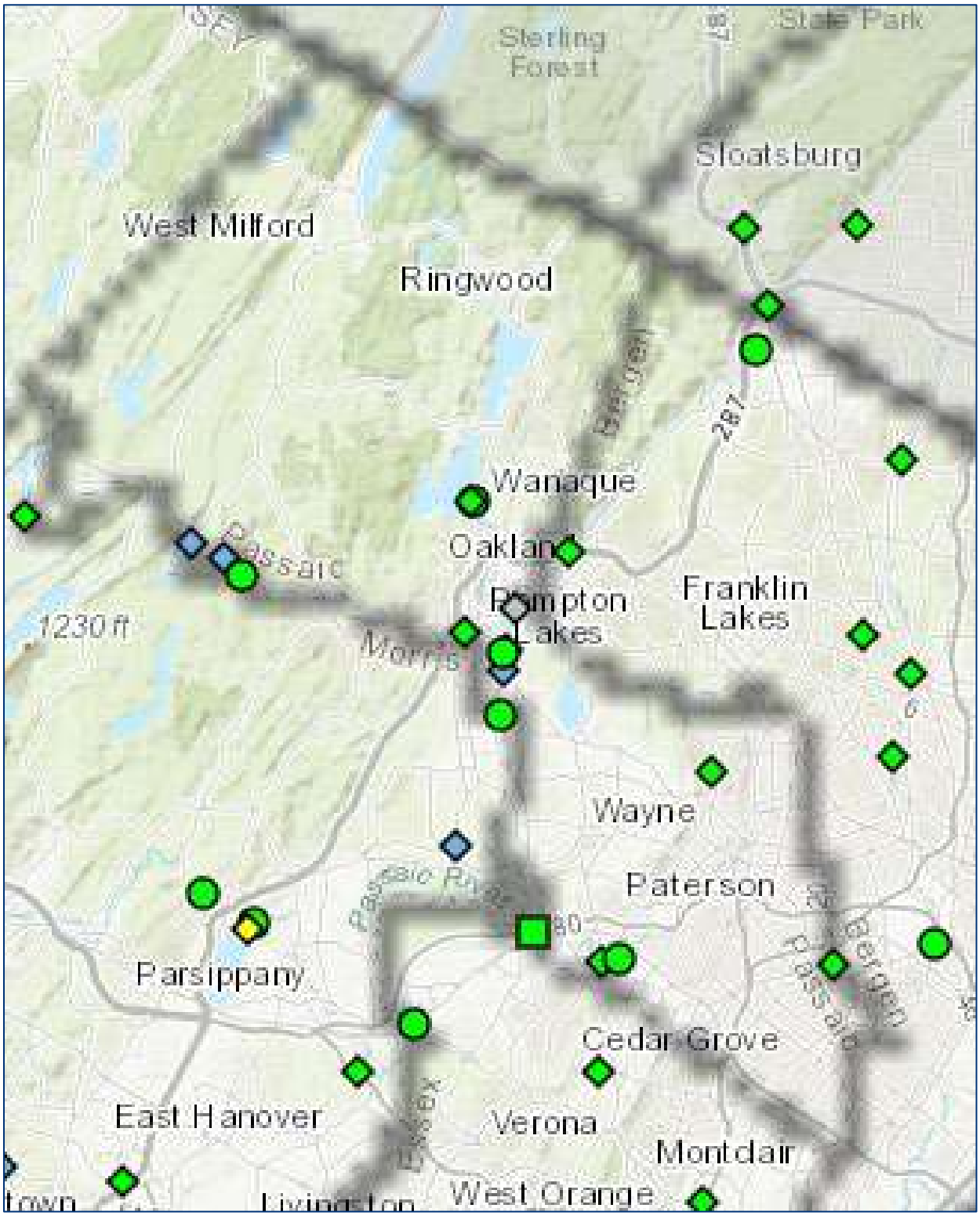
The 22 stream gages in the County are shown in Figure 9-3 and listed in Table 9-2. The USGS website provides details about each of the gages and the gage heights of flooding events. The NWS provides the different flood stages for the gages.

Table 9-2. Gages in Passaic County

Gage Site Number	Site Name	Flood Stage Height (feet)	Record Flood Height (Feet)
01382385	Pequannock River at Green Pond Junction NJ	N/A	N/A
01382500	Pequannock River at Macopin Intake Dam NJ	5.5	9.4
01383000	Greenwood Lake at Awosting NJ	Not Available	Not Available
01383500	Wanaque River at Awosting NJ	Not Available	Not Available
01384500	Ringwood Creek near Wanaque NJ	Not Available	Not Available
01386000	West Brook near Wanaque NJ	Not Available	Not Available
01386990	Wanaque Reservoir at Wanaque NJ	302.0	N/A
01387000	Wanaque River at Wanaque NJ	6.0	10.8
01387940	Ramapo River at Lakeside Ave at Pompton Lakes NJ	Not Available	Not Available
01387998	Ramapo River above dam at Pompton Lakes NJ	11.5	15.6
01388000	Ramapo River at Pompton Lakes NJ	11.5	22.6
01388100	Ramapo River at Dawes Highway at Pompton NJ	Not Available	Not Available
01388500	Pompton River at Pompton Plains NJ	16.0	25.2
01388910	Pompton River at Mountain View NJ	Not Available	Not Available
01389005	Passaic River below Pompton River at Two Bridges NJ	Not Available	Not Available
01389010	Passaic River at I-80 at Singac NJ	7.0	11.5
01389492	Passaic River abv Beatties Dam at Little Falls NJ	11.3	14.1
01389500	Passaic River at Little Falls NJ	7.0	17.5
01389550	Peckman River at Little Falls NJ	Not Available	Not Available
01389765	Molly Ann Brook at North Haledon NJ	6.0	10.9
01389802	Passaic River at Passaic (Great) Falls at Paterson NJ	Not Available	Not Available
01389890	Passaic River at Dundee Dam at Clifton NJ	4.5	8.4

Source: NWS 2023; USGS 2023

Figure 9-3. Stream Gages in Passaic County



Source: NWS 2023

Flash Flooding

Flash flooding, like riverine flooding, occurs throughout the County, primarily along the bodies of water that flow through it. There is no standardized mapping system for flash flooding.

Storm Surge

The area along the Passaic River in the southeastern part of Passaic County is vulnerable to storm surge as far upstream as Dundee Dam in the City of Clifton. The dam is on the Passaic River, 17 miles upstream from the river's outlet at Newark Bay (Passaic County Office of Emergency Management 2020). Only the City of Passaic and City of Clifton along the Passaic River are affected by tidal influence (NJDEP 2018). These municipalities are vulnerable to storm surge.

Inundation from storm surge has devastating impacts on the state's coastal communities. USACE, in cooperation with FEMA, prepared maps of storm surge inundation areas called SLOSH (Sea, Lake, and Overland Surges from Hurricanes) maps. SLOSH maps represent potential flooding from worst-case combinations of hurricane direction, forward speed, and landfall point, and high astronomical tide. The SLOSH maps do not include riverine flooding caused by hurricane surge or inland freshwater flooding.

The mapping was developed for the coastal communities in the State of New Jersey using the computer model to forecast surges that occur from wind and pressure forces of hurricanes. In New Jersey, hurricane category is the predominant factor in worst-case hurricane surges. The resulting inundation areas are grouped into Category 1 and 2 (dangerous), Category 3 (devastating), and Category 4 (catastrophic) classifications. The hurricane category refers to the Saffir/Simpson Hurricane Intensity Scale. Figure 9-4 shows the SLOSH zones for Passaic County.

Stormwater/Urban Flooding

Stormwater/urban flooding is not mapped by the state or FEMA but is most likely to occur in highly developed areas with high percentages of impervious surface that contributes to high rates of runoff. Locations that have undersized stormwater components or stormwater components that are prone to becoming clogged or failing often experience stormwater flooding.

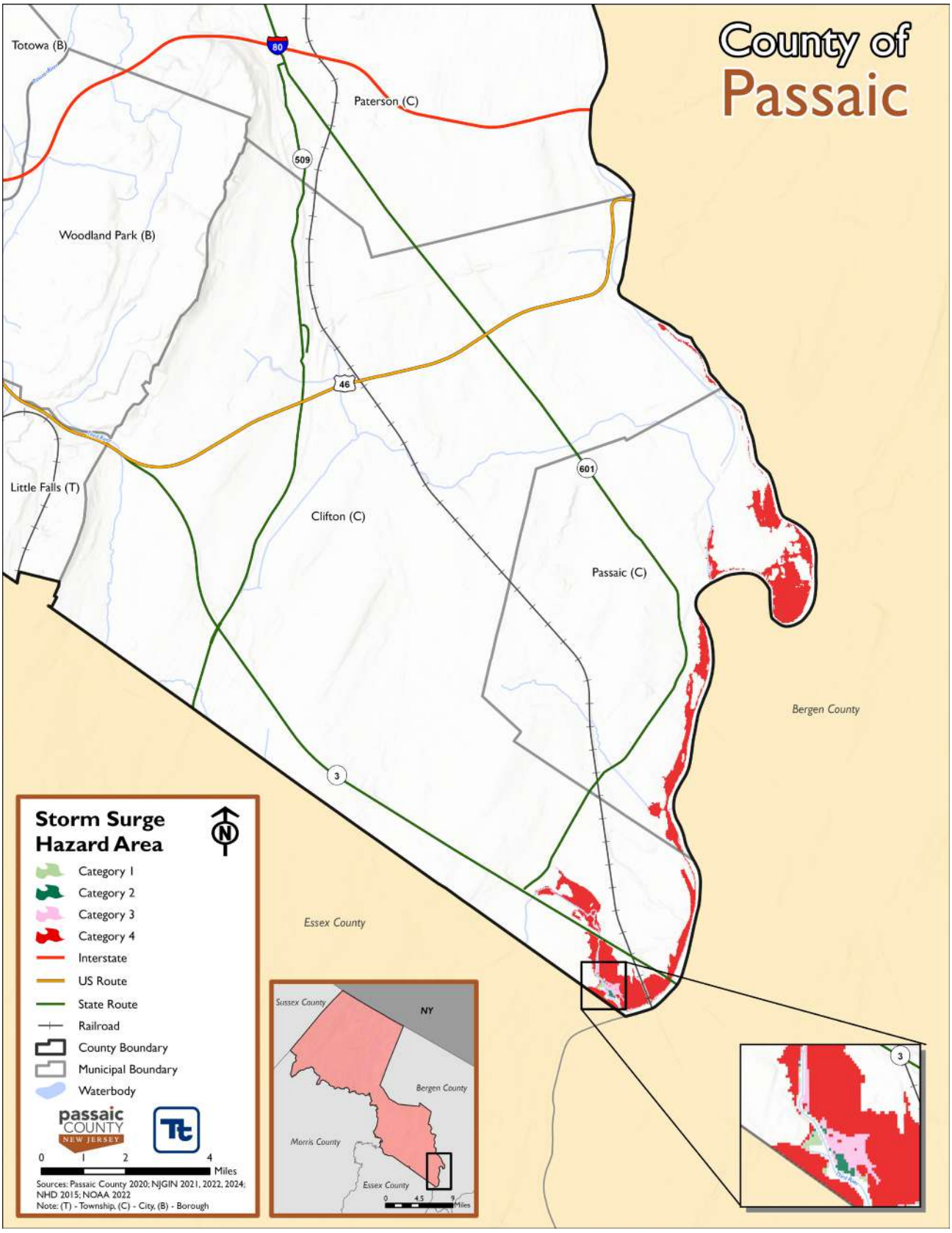
Ice Jam Flooding

Areas of New Jersey that include characteristics conducive to ice jam flooding are the northern counties along the Passaic River and its tributaries—Essex, Hudson, Passaic, and Bergen. According to the USACE Ice Jam Database, Passaic County has not been impacted by any historic ice jam incidents between 1780 and 2023. The Passaic River has experienced ice jams in neighboring Morris County, demonstrating that Passaic County can be impacted by ice jam events (USACE 2023).

Erosion

Erosion in Passaic County is limited to fluvial (river and stream) erosion. Fluvial erosion may occur along all rivers, streams, and creeks that flow throughout the County.

Figure 9-4. Storm Surge Hazard Area



9.1.3 Extent

Riverine and Flash Flooding

The severity of riverine and flash flooding is determined by stream and river basin topography; precipitation and weather patterns; soil moisture conditions; degree of vegetative clearing; and impervious surface. Generally, floods are long-term events that may last for several days.

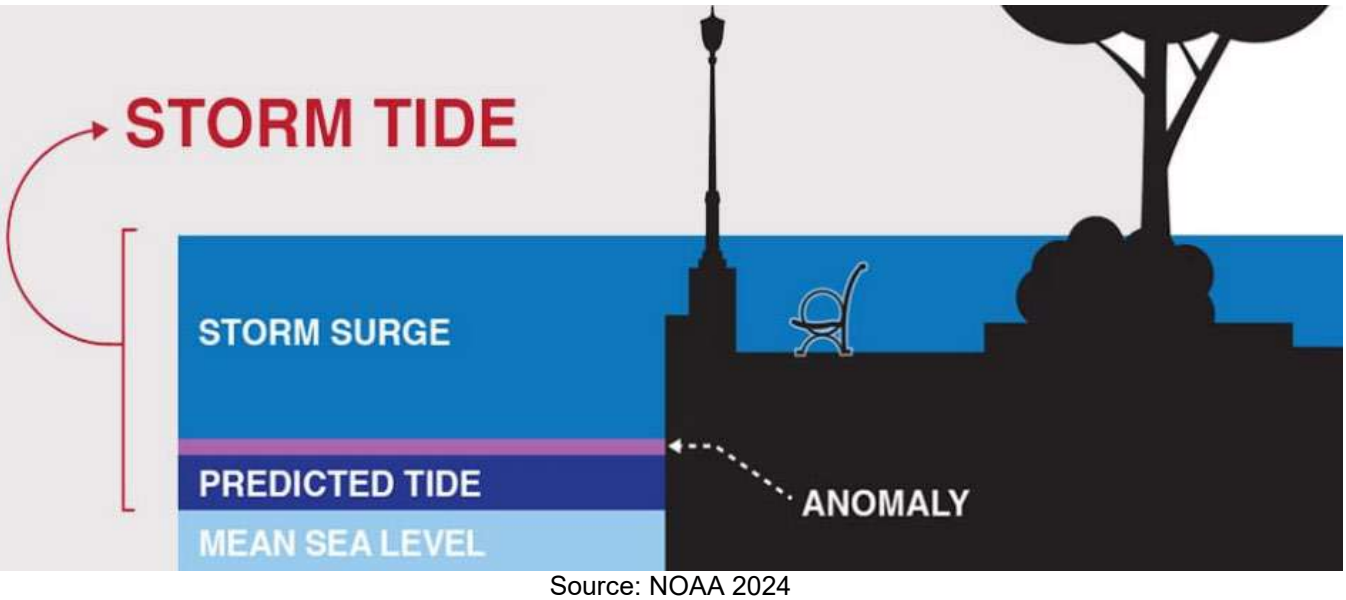
Riverine flooding is assessed based on the probability that a given river discharge (flow) level will be equaled or exceeded each year. Flood studies use historical records to determine the probability of occurrence for the different discharge levels. Once a river reaches flood stage, the flood extent categories used by the NWS are as follows (NSSL n.d.):

- **Minor Flooding** can cause minimal or no property damage, with possibly some public threat or inconvenience.
- **Moderate Flooding** can cause some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary.
- **Major Flooding** can cause extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.

Storm Surge

Storm surge is estimated by subtracting the regular tide level from the observed storm tide. Typical storm surge heights range from several feet to more than 25 feet. The exact height of the storm surge and which coastal areas will be flooded depends on the intensity and speed of the storm that causes it; the direction the storm is moving relative to the shoreline; how rapidly the sea floor slopes along the shore; the shape and elevation of the shoreline; and the astronomical tide. Storm surge is most damaging when it occurs along a shallow sloped shoreline, during high tide, and in a highly populated and developed area. Figure 9-5 illustrates water level differences for storm surge, storm tide, and a normal (predicted) high tide as compared to sea level (NOAA 2024).

Figure 9-5. Storm Tide Diagram



Source: NOAA 2024

Stormwater/Urban Flooding

Currently, there is no measurement used to define severity of stormwater/urban flooding.

Ice Jam Flooding

Ice jam flooding events often occur suddenly and are difficult to predict, allowing for little time to prepare for and warn of an event. The size of the snowpack and the rate of snowmelt controls the extent of an ice jam (Rokaya 2018).

According to USACE, the State of New Jersey ranks 24th in the United States for total number of ice jam events, with 109 incidents documented between 1867 and 2023 (USACE 2023).

Erosion

Erosion is typically expressed as a rate: rate of linear retreat (feet of shoreline recession per year) or volumetric loss (cubic yards of eroded sediment per linear foot of shoreline frontage per year). Erosion rates are cited as positive numbers, with corresponding shoreline change rates as negative numbers. For example, an erosion rate of 2 feet per year is equivalent to a shoreline change rate of “-2 feet per year”. Accretion rates are stated as positive numbers, with corresponding shoreline change rates as positive numbers. For example, an accretion rate of 2 feet per year is equivalent to a shoreline change rate of “2 feet per year”.

Erosion rates are usually computed and cited as long-term, average annual rates. However, erosion rates are not uniform in time or space and can vary substantially, including from one location along the shoreline to another (even when the two locations are only a short distance apart), over time at a single location, or seasonally.

9.1.4 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has been included in 13 major disaster (DR) or emergency (EM) declarations for flood-related events (FEMA 2023).Table 7-4 lists these declarations.

USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Between 2019 and 2023, Passaic County was not included in any USDA flood-related agricultural disaster declarations (USDA 2024).

Previous Events

Known hazard events that impacted Passaic County between August 2019 and December 2023 are listed in Table 7-6. For events prior to 2019, refer to the 2020 Passaic County HMP.

Table 9-3. FEMA Declarations for Flood Events in Passaic County (1954 to 2023)

Event Date	Declaration Date	Declaration Number	Description
March 9, 1962	March 9, 1962	DR-124-NJ	Severe Storm, High Tides & Flooding
June 18, 1968	June 18, 1968	DR-245-NJ	Heavy Rains & Flooding
September 4, 1971	September 4, 1971	DR-310-NJ	Heavy Rains & Flooding
July 23, 1975	July 23, 1975	DR-477-NJ	Heavy Rains, High Winds, Hail & Tornadoes
March 28-April 8, 1984	April 12, 1984	DR-701-NJ	Coastal Storms & Flooding
September 16-18, 1999	September 17, 1999 September 18, 1999	EM-3148-NJ DR-1295-NJ	Hurricane Floyd
August 26 – September 5, 2011	August 27, 2011 August 31, 2011	EM-3332-NJ DR-4021-NJ	Hurricane Irene
October 26-November 8, 2012	October 28, 2012 October 30,2012	EM-3354-NJ DR-4086-NJ	Hurricane Sandy
September 1-3, 2021	September 2, 2021 September 5, 2021	EM-3573-NJ DR-4614-NJ	Remnants of Hurricane Ida

Source: FEMA 2024

Table 9-4. Flood Events in Passaic County (August 2019 to December 2023)

Event Date	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
August 7, 2019	N/A	N/A	Little Falls	Showers and thunderstorms across northeast New Jersey resulted in flash flood. Observers reported 2.76 inches of rain near Little Falls, 3.21 inches of rain near Livingston Township, and 3.05 inches in Cedar Grove.
July 6, 2020	N/A	N/A	Passaic	Showers and thunderstorms resulted in widespread rainfall of 0.5 to 2 inches, with Teterboro Airport reporting 2.89 inches. Much of this rain fell over 1 to 2 hours, resulting in flash flooding.
July 10, 2020	N/A	N/A	Athenia (Clifton)	Tropical Storm Fay resulted in numerous reports of flash flooding. Rainfall totals ranged from 1 to 3 inches across northeast New Jersey, with Caldwell, NJ reporting 2.75 inches, Newark Airport reporting 2.68 inches, and Teterboro Airport reporting 2.62 inches.
July 8, 2021	N/A	N/A	Hawthorne, Pompton Junction (Pompton Lakes)	Flash flooding occurred across portions of the area due to Tropical Storm Elsa. Rainfall amounts ranged from 1.5 to 4 inches, with Teterboro Airport reporting 2.37 inches.
July 12, 2021	N/A	N/A	Skyline Lake (Ringwood)	Storms following a week of wet conditions resulted in isolated flash flooding across Passaic County. Charlotteburg measured 3.96 inches of rain.

Event Date	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
July 29, 2021	N/A	N/A	Allwood (Clifton)	Scattered showers and thunderstorms resulted in flash flooding in Essex, Passaic, and Bergen Counties. A localized area of 1 to 3 inches of rain occurred along the border of Passaic and Essex Counties, with reports of 1.69 inches outside of Little Falls Township.
August 21-22, 2021	N/A	N/A	Passaic Park, Hawthorne, West Milford, Wanaque	Preceding thunderstorms and rainfall from Hurricane Henri resulted in flash flooding. Rainfall totals amounted to 3 to 7 inches in many locations over 24 to 36 hours.
August 27, 2021	N/A	N/A	Passaic	Scattered thunderstorms and wet antecedent conditions associated with Tropical Storm Henri resulted in isolated flash flooding in northeast New Jersey.
September 1-2, 2021	N/A	N/A	Great Notch (Little Falls), Totowa, Haledon, South Paterson, Clifton, Passaic	Extremely heavy rainfall associated with Hurricane Ida overspread northeast New Jersey. Rainfall totals ranged from 5 to 8 inches, much of it in just a few hours. This resulted in widespread flash flooding leading to numerous road closures and water rescues in addition to extensive river flooding. Eight people died as a result of the flash flooding.
October 26, 2021	N/A	N/A	Clifton	Thunderstorms dropped 1 to 3 of rain over a several hour period. Moderate to heavy rain persisted through the morning, with total rainfall amounts of 2 to 4 inches.
May 28, 2022	N/A	N/A	Allwood (Clifton)	Several rounds of rainfall with 0.75 to 1 inch of rain in an hour caused brief localized flash flooding. Total rainfall amounts in Northeast new Jersey were 1.5 to 3 inches.
July 18, 2022	N/A	N/A	Passaic	Thunderstorms produced a widespread 1 to 3 inches of rainfall with localized spots up to 4 inches.
June 25, 2023	N/A	N/A	Totowa	Slow moving thunderstorms with heavy rainfall over Northeast New jersey resulted in 1 to 2 inches of rainfall. Rain fell quickly, resulting in localized flash flooding.
December 18, 2023	N/A	N/A	Prospect Park, Haledon, Great Notch (Little Falls), Totowa	Heavy rainfall occurred over a 12–18-hour period. A widespread 2 to 5 inches of rain fell over the area. This resulted in many areas of flash flooding as well as significant rises in rivers.

Source: FEMA 2024, NOAA NCEI 2024

9.1.5 Probability of Future Occurrences

Probability Based on Previous Occurrences

Information on previous flood occurrences in the County was used to calculate the probability of future occurrence of such events, as summarized in Table 9-5. Based on historical records and input from the Steering Committee, the probability of occurrence for flood events in the County is considered “occasional.”

Table 9-5. Probability of Future Flood Events in Passaic County

Hazard Type	Number of Occurrences Between 1996 and 2023	Percent Chance of Occurring in Any Given Year
Coastal Flood[a]	5	18%
Flash Flood[a]	126	100%
Flood[a]	44	100%
Storm Surge	0	0%
Total	**175**	**100%**

Source: NOAA NCEI 2024

a. *The NCEI database categorizes flood events into types that do not correspond to the flood types outlined in this profile. Coastal flood, flash flood, and flood events likely represent other types of flooding discussed in this profile, such as riverine flooding and stormwater/urban flooding.*

Effect of Climate Change on Future Probability

A warmer atmosphere means storms have the potential to be more intense and occur more often. In New Jersey, extreme storms typically include coastal nor'easters, snowstorms, spring and summer thunderstorms, tropical storms, and on rare occasions hurricanes. Most of these events occur in the warmer months between April and October, with nor'easters occurring between September and April. The State will experience more intense rain events, less snow, and more rainfall. The State could also experience an increase in the number of flood events (NJDEP 2020).

Projections of climate change for New Jersey predict more intense rainfall events and increases in total annual precipitation (see Section 3.4.4). By 2050, annual precipitation in New Jersey could increase by 4 to 11 percent (NJDEP 2020). By the end of this century, heavy precipitation events are projected to occur two to five times more often and with more intensity than in the last century.

9.1.6 Cascading Impacts on Other Hazards

Flooding can elevate the risk of dam failures if water levels exceed a dam's storage capacity or floodwaters damage equipment. Flooding can increase the likelihood of a landslide occurring if the water destabilizes slopes. More intense flood events may also amplify potential debris flows or associated damage from landslides.

Depending on a flood's severity and the substances in its path, floodwaters can be contaminated by pollutants such as sewage, human and animal feces, pesticides, fertilizers, oil, asbestos, and rusting building materials. After flood events, excess moisture and standing water contribute to the growth of mold in buildings. Mold may present a health risk to building occupants, especially those with already compromised immune systems such as infants, children, the elderly and pregnant women. Common public health risks associated with flood events also include unsafe food, contaminated drinking or washing water, more disease-carrying organisms (i.e., mosquitos), carbon monoxide poisoning, and even mental stress and fatigue (CDC 2024).

Floods of any type have the potential to result in water and power utilities failures. Such failures may impact public and private use, as well as cause disruption to critical infrastructure. Oversaturated soils from periods of heavy rain and flooding may cause utility poles to tip over or fall completely, interrupting the power grid for a potentially large area, especially if the transformer is impacted.

9.2 VULNERABILITY AND IMPACT ASSESSMENT

The 1- and 0.2 percent annual chance flood events were examined to evaluate the county's risk from the flood hazard. Additionally, SLOSH Categories 1 through 4 were analyzed to evaluate the county's risk from storm surge. Data and methods used for the assessment are described in Chapter 4.

9.2.1 Life, Health, and Safety

Floodwaters can cause injuries, displace individuals, or necessitate the need for shelter. The degree of impact is influenced by the severity of the event and the adequacy of warning time provided to residents. Vulnerable populations are those living in or near areas that could be inundated by a flood event. People traveling in flooded areas or those whose access to emergency services is compromised are also considered to be vulnerable.

Overall Population

Riverine Flood

Table 9-6 summarizes the population exposed to the 1 percent- and 0.2 percent annual chance flood hazard by jurisdiction. There are an estimated 20,905 residents living in the 1 percent annual chance floodplain—4 percent of the County's total population. There are an estimated 32,037 residents living in the 0.2 percent annual chance floodplain, or 6.2 percent of the County's total population. The City of Paterson has the greatest number of residents living in the 1 percent annual chance flood hazard area with approximately 7,846 residents. The City of Paterson also has the highest number of residents living in the 0.2 percent annual chance flood area—an estimated 12,818 people.

The Hazus riverine model estimates the potential sheltering needs during a 1 percent annual chance flood event will include 18,109 persons displaced, and 2,482 people seeking short-term sheltering. These statistics, by jurisdiction, are presented in Table 9-7. The estimated displaced population and number of persons seeking short-term sheltering differs from the number of persons exposed to the 1 percent annual chance flood because the displaced population numbers take into consideration that not all residents will be significantly impacted enough to be displaced or to require short-term sheltering during a flood event.

The total number of injuries and casualties resulting from flooding is generally limited based on advance weather forecasting, blockades, and warnings. Therefore, injuries and deaths generally are not anticipated if proper warning and precautions are in place. Ongoing mitigation efforts should help to avoid the most likely cause of injury, which results from persons trying to cross flooded roadways or channels during a flood.

Storm Surge

Table 9-8 summarizes the population exposed to the SLOSH Category 4 hazard area by jurisdiction. Only two jurisdictions have residents in this hazard area. The City of Passaic has the highest percentage of its population in this category, with 0.8 percent, or 540 individuals. The City of Clifton follows with 0.1 percent, or 117 individuals. Overall, Passaic County has 657 residents, representing 0.1 percent of the total population, within the SLOSH Category 4 hazard area. There are no residents in the hazard areas SLOSH categories 1 through 3.

Table 9-6. Population Living in the 1 Percent and 0.2 Percent Flood Hazard Areas

Jurisdiction	Total Population	Population in the 1 Percent Annual Chance Flood Hazard Area		Population in the 0.2 Percent Annual Chance Flood Hazard Area	
		Number of People	Percent Total	Number of People	Percent Total
Bloomingdale (B)	7,726	222	2.9%	323	4.2%
Clifton (C)	89,451	117	0.1%	542	0.6%
Haledon (B)	8,945	0	0.0%	144	1.6%
Hawthorne (B)	19,456	156	0.8%	248	1.3%
Little Falls (T)	14,229	3,036	21.3%	3,744	26.3%
North Haledon (B)	8,801	74	0.8%	115	1.3%
Passaic (C)	70,048	599	0.9%	1,943	2.8%
Paterson (C)	157,864	7,846	5.0%	12,818	8.1%
Pompton Lakes (B)	11,052	2,703	24.5%	3,570	32.3%
Prospect Park (B)	6,299	7	0.1%	105	1.7%
Ringwood (B)	11,692	61	0.5%	90	0.8%
Totowa (B)	10,975	1,099	10.0%	1,512	13.8%
Wanaque (B)	11,217	249	2.2%	322	2.9%
Wayne (T)	54,143	3,018	5.6%	3,546	6.5%
West Milford (T)	24,797	284	1.1%	670	2.7%
Woodland Park (B)	13,291	1,434	10.8%	2,345	17.6%
Passaic County (Total)	519,986	20,905	4.0%	32,037	6.2%

Source: NJOIT 2024; FEMA 2020; Microsoft 2019; US Census Bureau 2022

Table 9-7. Displaced or Persons Seeking Short-Term Sheltering, 1 Percent Annual Chance Flood

Jurisdiction	Total Population	1% Annual Chance Flood Impacts on People	
		Displaced Population	Persons Seeking Short-Term Sheltering
Bloomingdale (B)	7,726	443	48
Clifton (C)	89,451	292	107
Haledon (B)	8,945	146	72
Hawthorne (B)	19,456	259	31
Little Falls (T)	14,229	1,787	50
North Haledon (B)	8,801	126	26
Passaic (C)	70,048	1,548	554
Paterson (C)	157,864	4,715	932
Pompton Lakes (B)	11,052	2,499	111
Prospect Park (B)	6,299	29	7
Ringwood (B)	11,692	196	14
Totowa (B)	10,975	1,233	37
Wanaque (B)	11,217	374	108
Wayne (T)	54,143	2,819	228
West Milford (T)	24,797	442	82
Woodland Park (B)	13,291	1,201	75
Passaic County (Total)	519,986	18,109	2,482

Source: Hazus v6.1; (US Census Bureau 2022); FEMA 2024

Table 9-8. Population Living in the SLOSH Category 4 Hazard Area

Jurisdiction	Total Population	Population in the SLOSH Category 4 Hazard Area	
		Number of Persons	% of Jurisdiction Total
Bloomingdale (B)	7,726	0	0.0%
Clifton (C)	89,451	117	0.1%
Haledon (B)	8,945	0	0.0%
Hawthorne (B)	19,456	0	0.0%
Little Falls (T)	14,229	0	0.0%
North Haledon (B)	8,801	0	0.0%
Passaic (C)	70,048	540	0.8%
Paterson (C)	157,864	0	0.0%
Pompton Lakes (B)	11,052	0	0.0%
Prospect Park (B)	6,299	0	0.0%
Ringwood (B)	11,692	0	0.0%
Totowa (B)	10,975	0	0.0%
Wanaque (B)	11,217	0	0.0%
Wayne (T)	54,143	0	0.0%
West Milford (T)	24,797	0	0.0%
Woodland Park (B)	13,291	0	0.0%
Passaic County (Total)	519,986	657	0.1%

Source: U.S Census Bureau 2022; NJOIT, Microsoft 2019, NOAA 2022

Socially Vulnerable Population

Economically disadvantaged populations are more vulnerable because they are likely to evaluate their risk and make decisions to evacuate based on the net economic impact to their family. The population over the age of 65 is more vulnerable because they are more likely to need medical attention which may not be available due to isolation during a flood event, and they may have more difficulty evacuating. Special consideration should be taken when planning for disaster preparation, response, and recovery for these vulnerable groups.

Riverine Flood

Table 9-9 and Table 9-10 presents the estimated socially vulnerable populations living in the 1 and 0.2 percent annual chance flood hazard areas. There are 3,192 persons over the age of 65 years, 1,258 persons under the age of 5 years, 2,341 non-English speakers, 1,700 persons with a disability, and 2,638 living in poverty located in the 1 percent annual chance flood hazard area. There are 4,757 persons over the age of 65 years, 2,013 persons under the age of 5 years, 3,984 non-English speakers, 2,632 persons with a disability, and 4,415 living in poverty located in the 0.2 percent annual chance flood hazard area.

Storm Surge

Table 9-11 presents the estimated socially vulnerable populations in the SLOSH Category 4 hazard area. The City of Passaic has 48 persons over the age of 65, 44 persons under the age of 5 years, 121 non-English speakers, 42 persons with a disability, and 117 persons living in poverty within the SLOSH Category 4 hazard area. The City of Clifton has 20 persons over the age of 65, 6 persons under the age of 5 years, 13 non-English speakers, 13 persons with a disability, and 8 persons living in poverty within the SLOSH Category 4 hazard area. There are no residents in the hazard areas for SLOSH Categories 1 through 3.

Table 9-9. Vulnerable Persons Living in the 1 Percent Annual Chance Flood Hazard

Jurisdiction	Estimated Number of Vulnerable Persons Located in the 1 Percent Annual Chance Flood Hazard Area									
	Persons Over 65	% of Total	Persons Under 5	% of Total	Non-English Speaking Persons	% of Total	Persons with a Disability	% of Total	Persons in Poverty	% of Total
Bloomingdale (B)	32	2.8%	7	2.8%	3	2.9%	16	2.7%	20	2.9%
Clifton (C)	20	0.1%	6	0.1%	13	0.1%	13	0.1%	8	0.1%
Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Hawthorne (B)	32	0.8%	6	0.8%	7	0.8%	14	0.8%	7	0.7%
Little Falls (T)	467	21.3%	100	21.3%	128	21.3%	229	21.3%	98	21.3%
North Haledon (B)	18	0.8%	4	0.8%	1	0.5%	6	0.8%	2	0.7%
Passaic (C)	53	0.8%	49	0.8%	134	0.9%	46	0.8%	130	0.9%
Paterson (C)	901	5.0%	618	5.0%	1,733	5.0%	633	5.0%	1,846	5.0%
Pompton Lakes (B)	433	24.4%	138	24.4%	55	24.1%	195	24.4%	234	24.4%
Prospect Park (B)	0	0.0%	0	0.0%	0	0.0%	1	0.1%	1	0.1%
Ringwood (B)	10	0.5%	2	0.4%	0	0.0%	4	0.4%	1	0.4%
Totowa (B)	213	10.0%	40	9.8%	34	9.9%	130	10.0%	42	10.0%
Wanaque (B)	55	2.2%	10	2.2%	6	2.0%	33	2.2%	15	2.2%
Wayne (T)	605	5.6%	159	5.6%	111	5.5%	242	5.6%	79	5.5%
West Milford (T)	53	1.1%	18	1.1%	3	1.1%	22	1.1%	8	1.1%
Woodland Park (B)	300	10.8%	101	10.8%	113	10.7%	116	10.7%	147	10.7%
Passaic County (Total)	3,192	4.1%	1,258	3.8%	2,341	3.4%	1,700	3.6%	2,638	3.8%

Source: (US Census Bureau 2022); (NJOIT 2024); (FEMA 2020); Microsoft 2019; Means 2024

Table 9-10. Vulnerable Persons Living in the 0.2 Percent Annual Chance Flood Hazard Area

Jurisdiction	Estimated Number of Vulnerable Persons Located in the 0.2 Percent Annual Chance Flood Hazard Area									
	Persons Over 65	% of Total	Persons Under 5	% of Total	Non-English Speaking Persons	% of Total	Persons with a Disability	% of Total	Persons in Poverty	% of Total
Bloomingdale (B)	47	4.1%	10	4.0%	4	3.8%	24	4.1%	29	4.2%
Clifton (C)	95	0.6%	29	0.6%	64	0.6%	62	0.6%	39	0.6%
Haledon (B)	23	1.6%	8	1.4%	15	1.6%	16	1.6%	12	1.6%
Hawthorne (B)	51	1.3%	9	1.2%	11	1.2%	23	1.3%	12	1.3%
Little Falls (T)	576	26.3%	123	26.2%	158	26.3%	282	26.3%	121	26.2%
North Haledon (B)	28	1.3%	6	1.2%	2	1.0%	10	1.3%	4	1.3%
Passaic (C)	174	2.8%	160	2.8%	435	2.8%	152	2.8%	423	2.8%
Paterson (C)	1,473	8.1%	1,010	8.1%	2,832	8.1%	1,035	8.1%	3,015	8.1%
Pompton Lakes (B)	572	32.3%	182	32.2%	73	32.0%	258	32.3%	310	32.3%
Prospect Park (B)	10	1.6%	8	1.5%	11	1.5%	15	1.7%	18	1.7%
Ringwood (B)	15	0.8%	3	0.6%	0	0.0%	7	0.7%	2	0.8%
Totowa (B)	292	13.7%	56	13.8%	47	13.7%	179	13.7%	57	13.6%
Wanaque (B)	72	2.9%	13	2.8%	8	2.7%	42	2.8%	19	2.7%
Wayne (T)	711	6.5%	187	6.5%	131	6.5%	284	6.5%	93	6.5%
West Milford (T)	126	2.7%	44	2.7%	7	2.7%	53	2.7%	20	2.7%
Woodland Park (B)	492	17.6%	165	17.6%	186	17.6%	190	17.6%	241	17.6%
Passaic County (Total)	4,757	6.1%	2,013	6.0%	3,984	5.8%	2,632	5.6%	4,415	6.4%

Source: U.S. Census Bureau 2022; NJOIT; Microsoft 2019; FEMA 2020

Table 9-11. Vulnerable Persons Living in the SLOSH Category 4 Hazard Area

Jurisdiction	Estimated Number of Vulnerable Persons Located in the SLOSH Category 4 Hazard Area									
	Persons Over 65	% of Total	Persons Under 5	% of Total	Non-English Speaking Persons	% of Total	Persons with a Disability	% of Total	Persons in Poverty	% of Total
Bloomingdale (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Clifton (C)	20	0.1%	6	0.1%	13	0.1%	13	0.1%	8	0.1%
Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Hawthorne (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Little Falls (T)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
North Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Passaic (C)	48	0.8%	44	0.8%	121	0.8%	42	0.8%	117	0.8%
Paterson (C)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pompton Lakes (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Prospect Park (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ringwood (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totowa (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Wanaque (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Wayne (T)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
West Milford (T)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Woodland Park (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Passaic County (Total)	68	0.1%	50	0.1%	134	0.2%	55	0.1%	125	0.2%

Source: U.S. Census Bureau 2022; NJOIT; Microsoft 2019; NOAA 2022

9.2.2 General Building Stock

Riverine Flooding

Table 9-12 summarizes buildings in the riverine flood hazard areas by jurisdiction. There are 4,713 buildings in the 1 percent annual chance flood hazard area, with an estimated $5 billion of building and contents replacement cost value (RCV). This represents 4.6 percent of the County's total general building stock inventory. There are 6,984 buildings in the 0.2 percent annual chance flood hazard area, with an estimated $9 billion of building and contents RCF. This represents 6.8 percent of the County's total general building stock inventory.

Table 9-13 list the buildings by general occupancy within the 1 or 0.2 percent annual chance flood hazard areas. For the 1 percent annual chance flood hazard area, the Township of Wayne (783) has the highest number of residential buildings (783) at risk, followed by the Borough of Pompton Lakes (705). The Township of Wayne also has the highest in commercial buildings (340) at risk. The City of Paterson leads in industrial buildings (23) and in government, religion, agricultural, and education buildings (12) at risk of the 1 percent annual chance flood event.

For the 0.2 percent annual chance flood hazard area, the City of Paterson has the highest number of residential buildings (1,075) at risk, followed by the Borough of Pompton Lakes (931). The Township of Wayne has the highest number of commercial buildings (453) at risk. While the City of Paterson leads in industrial buildings (37), and government, religion, agricultural, and education buildings (20) at risk of the 0.2 percent annual chance flood event.

The Hazus flood model estimated potential damage associated with the 1 percent annual chance flood to the buildings in Passaic County, using the custom structure inventory developed for this HMP and the depth grid generated using the effective 2020 DFIRM data. Table 9-14 lists the estimated losses by jurisdiction and occupancy class. The potential damage estimated by Hazus to the general building stock inventory associated with the 1 percent annual chance flood is $639.8 million or 0.7 percent of the total building RCV. The Township of Wayne has the greatest estimated building loss—$183.3 million (1.2 percent of the total RCV).

Storm Surge

Table 9-15 provides an overview of the number and RCV of buildings located in the SLOSH Category 4 hazard area across jurisdictions in the County. The City of Clifton is the only jurisdiction with a building in this hazard area, accounting for less than 0.1 percent of the jurisdictional total, with an RCV of an estimated $2.7 million. For SLOSH Categories 1 through 3, there are no buildings in these hazard areas. Table 9-16 indicates that the City of Clifton has one commercial building in this hazard area. All other jurisdictions have no buildings in the SLOSH Category 4 hazard area. There are no buildings in the hazard areas for SLOSH Categories 1 through 3.

Table 9-12. General Building Stock Located in the 1 Percent and 0.2 Percent Annual Chance Flood Hazard Areas

Jurisdiction	Jurisdiction Total Buildings		1 Percent Annual Chance Flood Event Hazard Area				0.2 Percent Annual Chance Flood Event Hazard Area			
			Number of Buildings		Replacement Cost Value		Number of Buildings		Replacement Cost Value	
	Count	Replacement Cost Value	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	87	3.6%	$40,421,669	3.0%	126	5.2%	$69,245,127	5.1%
Clifton (C)	20,935	$15,833,226,790	43	0.2%	$95,757,538	0.6%	181	0.9%	$442,003,408	2.8%
Haledon (B)	1,898	$1,277,354,659	1	0.1%	$254,639	<0.1%	46	2.4%	$97,697,355	7.6%
Hawthorne (B)	6,079	$3,946,342,797	92	1.5%	$139,744,344	3.5%	167	2.7%	$466,373,959	11.8%
Little Falls (T)	2,915	$3,414,669,325	634	21.7%	$522,048,863	15.3%	800	27.4%	$678,586,454	19.9%
North Haledon (B)	2,952	$2,161,286,853	28	0.9%	$14,033,783	0.6%	45	1.5%	$25,317,681	1.2%
Passaic (C)	5,784	$11,383,166,371	78	1.3%	$523,024,440	4.6%	209	3.6%	$1,033,017,412	9.1%
Paterson (C)	16,686	$18,630,913,440	849	5.1%	$1,092,447,290	5.9%	1,378	8.3%	$1,793,170,877	9.6%
Pompton Lakes (B)	3,271	$1,954,260,257	774	23.7%	$315,930,946	16.2%	1,029	31.5%	$462,996,897	23.7%
Prospect Park (B)	1,016	$492,237,246	1	0.1%	$2,785,797	0.6%	20	2.0%	$9,953,005	2.0%
Ringwood (B)	4,369	$2,697,179,876	31	0.7%	$19,374,004	0.7%	46	1.1%	$28,439,179	1.1%
Totowa (B)	3,765	$5,499,989,017	379	10.1%	$178,767,818	3.3%	541	14.4%	$1,038,319,961	18.9%
Wanaque (B)	3,183	$2,352,891,840	67	2.1%	$36,315,755	1.5%	92	2.9%	$68,477,158	2.9%
Wayne (T)	15,577	$15,872,014,112	1,146	7.4%	$1,314,912,010	8.3%	1,416	9.1%	$2,287,269,486	14.4%
West Milford (T)	9,452	$5,622,763,478	119	1.3%	$53,351,121	0.9%	267	2.8%	$117,546,454	2.1%
Woodland Park (B)	2,965	$3,101,377,870	384	13.0%	$744,184,835	24.0%	621	20.9%	$908,684,120	29.3%
Passaic County (Total)	103,253	$95,597,936,857	4,713	4.6%	$5,093,354,852	5.3%	6,984	6.8%	$9,527,098,533	10.0%

Source: (NJOIT 2024); Microsoft 2019, RS Means 2024; (FEMA 2020)

Table 9-13. Buildings in the 1 Percent and 0.2 Percent Annual Chance Flood Hazard Areas, by General Occupancy Class

Jurisdiction	1 Percent Annual Chance Flood Event Hazard Area				0.2 Percent Annual Chance Flood Event Hazard Area			
	Residential	Commercial	Industrial	Other[a]	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	60	26	0	1	87	38	0	1
Clifton (C)	24	18	1	0	111	61	9	0
Haledon (B)	0	1	0	0	25	19	2	0
Hawthorne (B)	41	49	2	0	65	89	12	1
Little Falls (T)	515	98	18	3	635	143	19	3
North Haledon (B)	22	6	0	0	34	11	0	0
Passaic (C)	41	28	5	4	133	61	9	6
Paterson (C)	658	156	23	12	1,075	246	37	20
Pompton Lakes (B)	705	59	10	0	931	86	10	2
Prospect Park (B)	1	0	0	0	15	5	0	0
Ringwood (B)	21	8	1	1	31	13	1	1
Totowa (B)	317	57	4	1	436	87	16	2
Wanaque (B)	61	6	0	0	79	13	0	0
Wayne (T)	783	340	16	7	920	453	29	14
West Milford (T)	93	24	1	1	219	43	1	4
Woodland Park (B)	277	97	10	0	453	157	10	1
Passaic County (Total)	3,619	973	91	30	5,249	1,525	155	55

Source: Microsoft 2019; (NJOIT 2024); (FEMA 2020)

a. Other = Government, Religion, Agricultural, and Education

Table 9-14. Estimated General Building Stock Potential Loss to the 1 Percent Chance Flood Event

Jurisdiction	Total Replacement Cost Value	1 Percent Annual Chance Flood Event Impact on Buildings				
		Estimated Loss for All Occupancies	Percent of Total	Estimated Loss for Residential Properties	Estimated Loss for Commercial Properties	Estimated Loss for All Other Occupancies[a]
Bloomingdale (B)	$1,358,262,927	$16,340,739	1.2%	$14,905,434	$1,435,305	$0
Clifton (C)	$15,833,226,790	$6,121,990	<0.1%	$139,398	$5,974,693	$7,899
Haledon (B)	$1,277,354,659	$9,735,286	0.8%	$0	$371,629	$9,363,658
Hawthorne (B)	$3,946,342,797	$13,387,694	0.3%	$878,621	$9,769,658	$2,739,415
Little Falls (T)	$3,414,669,325	$53,304,437	1.6%	$29,109,776	$15,996,110	$8,198,551
North Haledon (B)	$2,161,286,853	$1,017,853	<0.1%	$706,884	$310,969	$0
Passaic (C)	$11,383,166,371	$55,144,312	0.5%	$3,888,040	$17,097,857	$34,158,415
Paterson (C)	$18,630,913,440	$157,807,703	0.8%	$17,308,941	$64,852,196	$75,646,567
Pompton Lakes (B)	$1,954,260,257	$43,402,273	2.2%	$33,448,677	$4,620,166	$5,333,429
Prospect Park (B)	$492,237,246	$1,612	<0.1%	$1,612	$0	$0
Ringwood (B)	$2,697,179,876	$6,636,911	0.2%	$5,782,069	$854,842	$0
Totowa (B)	$5,499,989,017	$23,130,039	0.4%	$10,690,458	$8,676,863	$3,762,718
Wanaque (B)	$2,352,891,840	$440,221	<0.1%	$170,344	$269,877	$0
Wayne (T)	$15,872,014,112	$183,331,263	1.2%	$58,740,041	$96,355,501	$28,235,721
West Milford (T)	$5,622,763,478	$18,492,781	0.3%	$15,615,573	$2,370,834	$506,374
Woodland Park (B)	$3,101,377,870	$51,461,817	1.7%	$10,975,638	$36,859,258	$3,626,921
Passaic County (Total)	$95,597,936,857	$639,756,932	0.7%	$202,361,506	$265,815,757	$171,579,668

Source: Hazus v6.1; Microsoft 2019; RS Means 2024; FEMA 2024; (NJOIT 2024)

a. Other = Industrial, Government, Religion, Agricultural, and Education

Table 9-15. Buildings in the SLOSH Category 4 Hazard Area

Jurisdiction	Jurisdiction Total Buildings		Buildings in the SLOSH Category 4 Hazard Area			
			Number of Buildings		Replacement Cost Value	
	Count	Replacement Cost Value	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	0	0.0%	$0	0.0%
Clifton (C)	20,935	$15,833,226,790	1	<0.1%	$2,692,183	<0.1%
Haledon (B)	1,898	$1,277,354,659	0	0.0%	$0	0.0%
Hawthorne (B)	6,079	$3,946,342,797	0	0.0%	$0	0.0%
Little Falls (T)	2,915	$3,414,669,325	0	0.0%	$0	0.0%
North Haledon (B)	2,952	$2,161,286,853	0	0.0%	$0	0.0%
Passaic (C)	5,784	$11,383,166,371	0	0.0%	$0	0.0%
Paterson (C)	16,686	$18,630,913,440	0	0.0%	$0	0.0%
Pompton Lakes (B)	3,271	$1,954,260,257	0	0.0%	$0	0.0%
Prospect Park (B)	1,016	$492,237,246	0	0.0%	$0	0.0%
Ringwood (B)	4,369	$2,697,179,876	0	0.0%	$0	0.0%
Totowa (B)	3,765	$5,499,989,017	0	0.0%	$0	0.0%
Wanaque (B)	3,183	$2,352,891,840	0	0.0%	$0	0.0%
Wayne (T)	15,577	$15,872,014,112	0	0.0%	$0	0.0%
West Milford (T)	9,452	$5,622,763,478	0	0.0%	$0	0.0%
Woodland Park (B)	2,965	$3,101,377,870	0	0.0%	$0	0.0%
Passaic County (Total)	103,253	$95,597,936,857	1	<0.1%	$2,692,183	<0.1%

Source: NJOIT, Microsoft 2019, RS Means 2024, NOAA 2022

Table 9-16. Buildings in the SLOSH Category 4 Hazard Area by General Occupancy Class

Jurisdiction	Buildings in the SLOSH Category 4 Hazard Area by General Occupancy Class			
	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	0	0	0	0
Clifton (C)	0	1	0	0
Haledon (B)	0	0	0	0
Hawthorne (B)	0	0	0	0
Little Falls (T)	0	0	0	0
North Haledon (B)	0	0	0	0
Passaic (C)	0	0	0	0
Paterson (C)	0	0	0	0
Pompton Lakes (B)	0	0	0	0
Prospect Park (B)	0	0	0	0
Ringwood (B)	0	0	0	0
Totowa (B)	0	0	0	0
Wanaque (B)	0	0	0	0
Wayne (T)	0	0	0	0
West Milford (T)	0	0	0	0
Woodland Park (B)	0	0	0	0
Passaic County (Total)	0	1	0	0

Source: NJOIT, Microsoft 2019, NOAA 2022

a. Other = Government, Religion, Agricultural, and Education

NFIP Statistics

Participating in the NFIP is voluntary. Communities that choose to participate agree to adopt and implement local floodplain management regulations that protect lives and reduce risk from future flooding. In return, the federal government makes flood insurance available to property owners throughout the community. To join, a community must complete an application; adopt a resolution of intent to participate and cooperate with FEMA; and adopt and submit a floodplain management ordinance that meets or exceeds the minimum NFIP criteria. The ordinance must adopt any FEMA-approved flood mapping for the community (FEMA 2020, FEMA 2022).

To inform this risk assessment, FEMA provided a list of residential properties with NFIP policies, past claims, and multiple claims (repetitive loss [RL] properties). Properties with multiple claims are defined as repetitive loss (RL) properties or severe repetitive loss (SRL) properties, based on definitions from two FEMA programs as follows:

- The NFIP defines RL properties as structures that meet either of the following qualifiers:
  - Two or more claims of more than $1,000 paid by NFIP within any rolling 10-year period since 1978
  - Two or more claims (building payments only) that, on average, equal or exceed 25 percent of the current value of the property
- FEMA's Flood Mitigation Assistance (FMA) grant program defines RL properties as structures covered by a contract for flood insurance made available under the NFIP that meet both of the following qualifiers:

  - 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 flood event
  - At the time of the second incidence of flood-related damage, the contract for flood insurance contained increased cost of compliance coverage.
- The NFIP defines SRL properties as residential properties covered under an NFIP flood insurance policy that satisfy the third condition below and either of the first two:
  - Four or more separate claim payments for the property (including building and contents) over $5,000 each have occurred, and the cumulative amount of such claims payments exceeded $20,000.
  - At least two separate claims payments for the property (building payments only) have occurred, and the cumulative amount of the building portion of such claims exceeded the current value of the property.
  - For either of the above, at least two of the referenced claims must have occurred within any 10-year- period and must have occurred more than 10 days apart.
- The FMA defines SRL properties as structures covered by a contract for flood insurance that meet one of two qualifiers:
  - Four or separate claims payments (includes building and contents) have been made under flood insurance coverage with the amount of each such claim exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000.
  - At least two separate claim payments (includes only building) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structured.

Table 9-17 summarizes NFIP claims, payments, and repetitive loss statistics for Passaic County. Table 9-18 provides additional information about the RL and SRL properties in Passaic County. Locations of the properties with policies, claims, and RL and SRL flooding were geocoded by FEMA with the understanding that differences (and variations in those differences) are possible between listed coordinates of properties and actual locations of property addresses—i.e., the indicators of some locations are more accurate than others.

Table 9-17. NFIP Claims, Payments, and Repetitive Loss Statistics for Passaic County

Jurisdiction	Total Claims	Total Payments	Number of NFIP RL Properties	Number of FMA RL Properties	Number of NFIP SRL Properties	Number of FMA SRL Properties
Bloomingdale (B)	38	$414,533	13	0	0	0
Clifton (C)	45	$2,964,266	11	0	2	3
Haledon (B)	2	$7,119	1	0	0	0
Hawthorne (B)	140	$4,151,227	14	0	6	8
Little Falls (T)	1,408	$35,368,159	144	4	85	148
North Haledon (B)	0	$0	0	0	0	0
Passaic (C)	38	$13,324,407	7	0	3	3
Paterson (C)	682	$32,173,512	149	0	48	48
Pompton Lakes (B)	1,913	$49,258,456	147	3	110	168
Prospect Park (B)	0	$0	0	0	0	0
Ringwood (B)	3	$30,759	1	0	0	0
Totowa (B)	261	$6,026,201	40	1	9	9
Wanaque (B)	25	$363,762	7	0	1	1
Wayne (T)	4,536	$113,266,831	246	8	227	446
West Milford (T)	62	$1,297,068	10	3	3	3
Woodland Park (B)	385	$8,568,897	94	1	16	16
Passaic County (Total)	9,538	$267,215,197	884	20	510	853

Source: (NJOEM 2024)

Table 9-18. Summary of Repetitive Loss Properties by Jurisdiction

Jurisdiction	Repetitive Loss Properties					Severe Repetitive Loss Properties				
	Single Family	2-4 Family	Business	Other Residential	Other Non-Residential	Single Family	2-4 Family	Business	Other Residential	Other Non-Residential
Bloomingdale (B)	7	4	0	0	1	0	0	0	0	0
Clifton (C)	6	3	1	0	1	1	0	2	0	2
Haledon (B)	0	1	0	0	0	0	0	0	0	0
Hawthorne (B)	1	5	0	0	8	0	2	2	0	9
Little Falls (T)	130	5	5	0	3	195	6	2	0	4
North Haledon (B)	0	0	0	0	0	0	0	0	0	0
Passaic (C)	3	0	1	0	2	0	0	4	0	2
Paterson (C)	73	57	3	1	13	22	40	10	4	10
Pompton Lakes (B)	145	1	1	1	1	258	6	2	0	0
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0
Ringwood (B)	1	0	0	0	0	0	0	0	0	0
Totowa (B)	32	8	1	0	0	14	2	0	0	2
Wanaque (B)	7	0	0	0	0	0	2	0	0	0
Wayne (T)	223	7	4	0	16	583	16	14	0	20
West Milford (T)	12	0	0	0	1	6	0	0	0	0
Woodland Park (B)	57	20	11	0	7	20	8	2	0	2
Passaic County (Total)	697	111	27	2	53	1,099	82	38	4	51

Source: (NJOEM 2024)

9.2.3 Community Lifelines and Other Critical Facilities

Critical services during and after a flood event may not be available if critical facilities are directly damaged or transportation routes to access these critical facilities are impacted. Roads that are blocked or damaged can isolate residents and can prevent access throughout the planning area to many service providers needing to get to vulnerable populations or to make repairs. Utilities such as overhead power, cable, and phone lines could also be vulnerable due to utility poles damaged by standing water or the surge of water from a flood event. Loss of these utilities could create additional isolation issues.

Table 9-19 and Table 9-20 summarize the number of community lifelines exposed to the 1 percent and 0.2 percent flood hazard areas by jurisdiction. Table 9-21 through Table 9-24 list the distribution and risk levels of community lifelines in the four SLOSH category hazard areas.

Most of the 174 community lifelines in the 1 percent annual chance flood hazard area are transportation facilities (101). Similarly, most of the 232 community lifelines located in the 0.2 percent annual chance flood hazard area are transportation facilities (119).

Passaic County has one facility the in SLOSH Category 1 hazard area, representing 0.1 percent of the total. There are two facilities (0.2 percent) in the SLOSH Category 2 hazard area, three facilities (0.2 percent) in the SLOSH Category 3 hazard area, and eight facilities (0.6 percent) in the SLOSH Category 4 hazard area. The transportation lifeline has the highest number of facilities in all SLOSH Hazard categories: Category 1 (1), Category 2 (2), Category 3 (3) and Category 4 (8).

During a disaster event in which short-term functionality is impacted by flooding, facilities of neighboring municipalities may need to increase support response functions. Mitigation planning should consider means to reduce flood impacts on critical facilities and ensure sufficient emergency and school services remain when a significant event occurs.

9.2.4 Economy

Flood impacts on the local and regional economy include general building stock damage and associated tax loss, loss of use of utilities and infrastructure, agricultural losses, business interruption, and impacts on tourism. Renovations of commercial and industrial buildings may be necessary, disrupting associated services. Extensive flood damage to public utilities can cause disruptions to delivery of services. Loss of power and communications may occur, and drinking water and wastewater treatment facilities may be temporarily out of operation.

Debris management may also be a large expense after a flood event. Hazus estimates the amount of debris generated from the 1 percent annual chance event. The model breaks down debris into three categories based on the types of equipment needed to handle the debris: finishes (dry wall, insulation, etc.); structural (wood, brick, etc.); and foundations (concrete slab and block, rebar, etc.). The distinction is made because of the different types of equipment needed to handle the debris. Table 9-25 summarizes the debris estimates for riverine flooding in Passaic County. During a 1 percent annual chance event, an estimated 21,269 tons of debris will be generated in total.

Table 9-19. Number of Facilities in the 1 Percent Annual Chance Flood Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the 1 Percent Annual Chance Flood Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	4	0	1	5	17.9%
Clifton (C)	0	0	0	0	1	0	6	1	0	8	4.8%
Haledon (B)	0	0	0	0	0	0	6	0	0	6	20.0%
Hawthorne (B)	0	0	0	0	0	2	7	8	0	17	21.8%
Little Falls (T)	0	0	0	0	1	0	1	1	1	4	8.5%
North Haledon (B)	0	0	0	0	0	1	1	0	0	2	6.5%
Passaic (C)	0	0	0	0	0	1	6	0	1	8	8.6%
Paterson (C)	0	1	2	1	0	2	17	0	4	27	9.4%
Pompton Lakes (B)	1	0	0	0	0	1	8	3	0	13	36.1%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	4	1	0	5	8.2%
Totowa (B)	0	0	0	0	2	1	3	3	1	10	13.7%
Wanaque (B)	0	0	0	0	0	3	4	4	0	11	22.0%
Wayne (T)	0	0	0	0	2	0	17	6	2	27	15.9%
West Milford (T)	0	0	0	0	0	2	13	0	0	15	13.2%
Woodland Park (B)	0	0	0	1	1	2	4	1	7	16	36.4%
Passaic County (Total)	1	1	2	2	7	15	101	28	17	174	13.1%

Source: (Passaic County Office of Emergency Management 2020); (Passaic County Department of Planning & Economic Development 2024); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (FEMA 2020); Passaic County 2024

Table 9-20. Number of Facilities in the 0.2 Percent Annual Chance Flood Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the 0.2 Percent Annual Chance Flood Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	4	0	1	5	17.9%
Clifton (C)	0	0	0	0	1	0	12	1	0	14	8.3%
Haledon (B)	0	0	0	0	0	0	7	0	0	7	23.3%
Hawthorne (B)	0	0	0	0	0	3	7	10	1	21	26.9%
Little Falls (T)	0	0	0	0	1	2	1	2	1	7	14.9%
North Haledon (B)	0	0	0	0	0	1	1	0	0	2	6.5%
Passaic (C)	0	0	0	0	0	1	10	0	2	13	14.0%
Paterson (C)	0	1	2	1	3	8	19	1	6	41	14.2%
Pompton Lakes (B)	1	0	0	0	0	2	8	3	0	14	38.9%
Prospect Park (B)	0	0	0	0	0	0	1	0	0	1	5.0%
Ringwood (B)	0	0	0	0	0	0	4	5	0	9	14.8%
Totowa (B)	0	1	0	2	3	2	3	5	2	18	24.7%
Wanaque (B)	0	0	0	0	0	3	4	4		11	22.0%
Wayne (T)	0	0	0	0	4	0	20	6	2	32	18.8%
West Milford (T)	0	0	0	0	0	2	14	2	0	18	15.8%
Woodland Park (B)	0	0	0	1	1	4	4	1	8	19	43.2%
Passaic County (Total)	1	2	2	4	13	28	119	40	23	232	17.4%

Source: (Passaic County Office of Emergency Management 2020); (Passaic County Department of Planning & Economic Development 2024); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (FEMA 2020); Passaic County 2024

Table 9-21. Number of Facilities in the SLOSH Category 1 Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the SLOSH Category 1 Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	1	0	0	1	0.6%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wanaque (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wayne (T)	0	0	0	0	0	0	0	0	0	0	0.0%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic County (Total)	0	0	0	0	0	0	1	0	0	1	0.1%

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024; NOAA 2022

Table 9-22. Number of Facilities in the SLOSH Category 2 Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the SLOSH Category 2 Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	1	0	0	1	0.6%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	0	1	0	0	1	1.1%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wanaque (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wayne (T)	0	0	0	0	0	0	0	0	0	0	0.0%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic County (Total)	0	0	0	0	0	0	2	0	0	2	0.2%

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024; NOAA 2022

Table 9-23. Number of Facilities in the SLOSH Category 3 Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the SLOSH Category 3 Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	1	0	0	1	0.6%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	0	2	0	0	2	2.2%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wanaque (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wayne (T)	0	0	0	0	0	0	0	0	0	0	0.0%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic County (Total)	0	0	0	0	0	0	3	0	0	3	0.2%

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024; NOAA 2022

Table 9-24. Number of Facilities in the SLOSH Category 4 Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the SLOSH Category 4 Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	1	0	1	1	0	3	1.8%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	1	4	0	0	5	5.4%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wanaque (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wayne (T)	0	0	0	0	0	0	0	0	0	0	0.0%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic County (Total)	0	0	0	0	1	1	5	1	0	8	0.6%

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024; NOAA 2022

Table 9-25. Estimated Debris Generated from the 1 Percent Annual Chance Flood Event

Jurisdiction	1 Percent Annual Chance Flood Event			
	Total (tons)	Finish (tons)	Structure (tons)	Foundation (tons)
Bloomingdale, Borough of	2,080	727	768	584
Clifton, City of	117	114	2	1
Haledon, Borough of	107	88	11	7
Hawthorne, Borough of	144	144	0	0
Little Falls, Township of	2,120	1,942	106	72
North Haledon, Borough of	111	102	6	4
Passaic, City of	466	426	24	16
Paterson, City of	2,274	1,613	416	245
Pompton Lakes, Borough of	3,084	2,825	157	102
Prospect Park, Borough of	7	7	0	0
Ringwood, Borough of	1,456	374	610	472
Totowa, Borough of	692	669	13	9
Wanaque, Borough of	332	150	104	79
Wayne, Township of	4,553	3,469	640	444
West Milford, Township of	2,802	638	1,174	989
Woodland Park, Borough of	926	750	106	70
Passaic County (Total)	21,269	14,038	4,138	3,093

Source: Hazus v6.1; (NJOIT 2024); FEMA 2024; Microsoft 2019

9.2.5 Natural, Historic and Cultural Resources

Natural

The environmental impacts of a flood can include significant water quality and debris-disposal issues. Floodwaters can back up sanitary sewer systems and inundate wastewater treatment plants, causing raw sewage to contaminate the flooded waterway. The contents of unsecured containers of oil, fertilizers, pesticides, and other chemicals get added to floodwaters. Hazardous materials may be released and distributed widely across the floodplain. After floodwaters subside, contaminated and flood-damaged building materials and contents must be properly disposed of. Contaminated sediment must be removed from buildings, yards, and properties. In addition, severe erosion caused by flooding can negatively impact local ecosystems. The erosion of sediment can deteriorate riverbanks, causing additional flooding into locations that may not otherwise have experienced flooding conditions.

Historic

Historic places, community facilities, and religious institutions are all vulnerable to impacts from flooding. Historic buildings face structural damage during flood events. Restoration of flood-damaged historic buildings that are subject to landmark laws can pose significant challenges. These laws often require adherence to strict preservation standards, which can complicate and prolong the recovery process.

Cultural

Cultural resources, such as community facilities and religious institutions, face significant risks of damage because they are not easily replaceable. These facilities often serve multiple functions, acting as communal spaces for different groups, which makes their loss particularly impactful. Flood events can lead to closures of these vital community spaces.

Parks and recreational areas, although often designed with flooding in mind, are also vulnerable. Flood events can lead to closures of parks, recreation areas, and community spaces, disrupting residents' lives and hindering access to critical community services.

9.3 FUTURE CHANGES THAT MAY AFFECT RISK

9.3.1 Potential or Planned Development

As Passaic County communities grow, flood events may increase in frequency and severity due to land use changes, the construction of more structures, and the expansion of impervious surfaces. Specific areas of recent and new development are indicated in the jurisdictional annexes in Volume II of this plan. The ability of new development to withstand flooding impacts can be enhanced through land use practices and consistent enforcement of codes and regulations for new construction. New development changes the landscape, where buildings, roads, and other infrastructure replace open land and vegetation. This transformation of pervious surfaces (including vegetation) to impervious surfaces increases runoff and the potential for flooding. Proper planning and implementation of green infrastructure can help mitigate these effects by promoting natural water absorption and reducing the risk of flood events.

9.3.2 Projected Changes in Population

If population growth occurs outside the SFHA, risk exposure remains the same. However, if it grows within the SFHA, risk exposure increases. Any changes in the density of population can create issues for local residents during evacuation of a flood event.

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

9.3.3 Climate Change

Most studies project that New Jersey will see an increase in average annual precipitation, primarily in the form of heavy rainfalls, which have the potential to increase the risk of flash flooding and riverine flooding. Increases in precipitation may alter and expand the floodplain boundaries and runoff patterns, resulting in the exposure of populations, buildings, and critical facilities and infrastructure that were previously outside the floodplain. This increase in exposure would result in an increased risk to life and health, an increase in structural losses, a diversion of additional resources to response and recovery efforts, and an increase in business closures affected by future flooding events due to loss of service or access.

9.3.4 Other Identified Conditions

It is anticipated that Passaic County will continue to experience direct and indirect impacts of flooding events annually that may induce secondary hazards such as infrastructure deterioration or failure, utility failures, power outages, water quality and supply concerns, and transportation delays, accidents, and inconveniences.

10. GEOLOGICAL HAZARDS

10.1 HAZARD PROFILE

10.1.1 Hazard Description

For this HMP update, geological hazards include earthquakes, landslides, and subsidence/sinkholes.

Earthquakes

An earthquake is the sudden movement of the earth's surface caused by the release of stress accumulated within or along the edge of the earth's tectonic plates (State of New Jersey 2017). Most earthquakes occur at the boundaries where the tectonic plates meet (faults); fewer than 10 percent of earthquakes occur within plate interiors. As plates continue to move and plate boundaries change over geologic time, weakened boundary regions become part of the interiors of the plates. These zones of weakness within the continents can cause earthquakes in response to stresses that originate at the edges of the plate or in the deeper crust.

The location of an earthquake is commonly described by its focal depth and the geographic position of its epicenter. The focal depth of an earthquake is the depth from the earth's surface to the region where an earthquake's energy originates (the focus or hypocenter). The epicenter of an earthquake is the point on the earth's surface directly above the hypocenter (State of New Jersey 2017). Earthquakes usually occur without warning and their effects can impact areas at great distance from the epicenter.

An earthquake impact is anything associated with an earthquake that may affect normal human activities (FEMA 2001). USGS identifies the following types of impacts, although not all these events affect Passaic County (USGS n.d., NOAA 2023):

- Surface faulting—Displacement that reaches the earth's surface during slip along a fault. Commonly occurs with shallow earthquakes, those with an epicenter less than 12 miles.
- Ground motion (shaking)—The movement of the earth's surface from earthquakes or explosions. Ground motion or shaking is produced by waves that are generated by sudden slip on a fault or sudden pressure at the explosive source and travel through the earth and along its surface.
- Landslide—A movement of surface material down a slope.
- Liquefaction—A process by which water-saturated sediment temporarily loses strength and acts as a fluid, like when you wiggle your toes in the wet sand near the water at the beach. This effect can be caused by earthquake shaking.
- Tectonic Deformation—A change in the original shape of a material due to stress and strain.
- Tsunami—A sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes.
- Seiche—The sloshing of a closed body of water from earthquake shaking.

Landslides

The term “landslide” includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Gravity acting on an over-steepened slope is the primary reason for a landslide. Contributing factors include the following (USGS n.d.):

- Erosion by rivers, glaciers, or ocean waves, which creates over-steepened slopes
- Rock and soil slopes weakened by saturation due to snowmelt or heavy rains
- Earthquakes, which generate energy that makes weak slopes fail
- Excess weight from rain/snow accumulation, rock/ore stockpiling, waste piles, or man-made structures.

In New Jersey, there are four main types of landslides:

- Slumps are coherent masses that move downslope by rotational slip on surfaces that underlie and penetrate the landslide deposit (NJDEP 2009).
- A debris flow, also known as a mudslide, is a form of rapid mass movement in which loose soil, rock, organic matter, air, and water mobilize as slurry that flows downslope. Debris flows are often caused by intense surface water from heavy precipitation or rapid snow melt. This precipitation loosens surface matter, thus triggering the slide.
- Rockfalls are common on roadway cuts and steep cliffs. These landslides are abrupt movements of geological material such as rocks and boulders. Rockfalls happen when these materials become detached.
- Rockslides are detached segments of bedrock sliding on bedrock, joint, or fault surfaces (NPS 2023).

Subsidence/Sinkholes

Land subsidence is the sudden sinking or gradual downward settling of the earth’s surface with little or no horizontal motion, owing to the subsurface movement of earth materials (USGS 2018). Subsidence often occurs through the loss of subsurface support in karst terrain, which may result from a number of natural or human-caused occurrences. Karst is a landscape characterized by dissolution of underlying carbonate rocks (limestone and dolomite) by surface water or groundwater over time. The dissolution process causes surface depressions and the development of sinkholes, sinking streams, enlarged bedrock fractures, caves, and underground streams (NJOEM 2019).

Sinkholes, the type of subsidence most frequently seen in New Jersey, are a common geologic feature in areas with underlying limestone, carbonate rock, salt beds, or other rocks that are soluble in water. They can result from natural or human causes:

- Natural sinkholes result when, over thousands of years, carbonate bedrock is dissolved by acidic rainwater moving in fractures or cracks in the bedrock. This creates larger openings in the rock through which water and overlying soil materials travel. Over time the voids enlarge until the roof over the void is unable to support the land above, at which time it collapses, forming a sinkhole.
- Human-caused sinkholes involve changes to the water balance of an area such as over-withdrawing groundwater, diverting surface water from a large area and concentrating it in a single point; artificially creating ponds of surface water; and drilling new water wells. These actions can accelerate the natural processes of creation of soil voids, which can have a direct impact on sinkhole creation (NJOEM 2019).

Both natural and human-made sinkholes can occur without warning. Slumping or falling fence posts, trees, or foundations, sudden formation of small ponds, wilting vegetation, discolored well water, and/or structural cracks in walls and floors are signs that a sinkhole may be forming. Sinkholes can range from steep-walled holes to bowl or

cone-shaped depressions. When sinkholes occur in developed areas, they can cause severe property damage, disruption of utilities, damage to roadways, injury, and loss of life (NJOEM 2019).

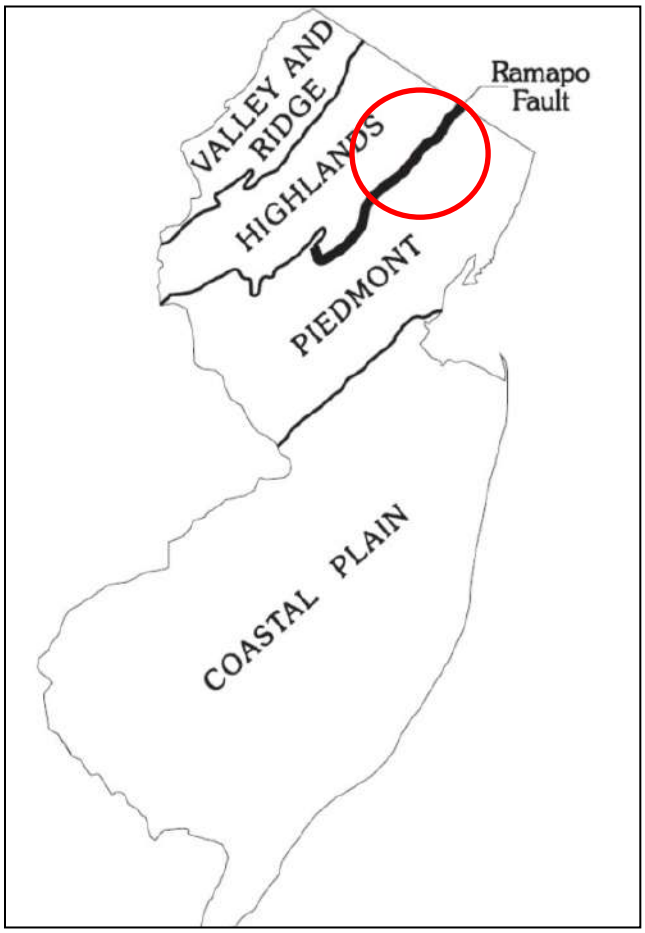
10.1.2 Location

Earthquakes

Faults

Earthquakes in New Jersey are most likely in the northern parts of the state, where significant faults are concentrated; this includes Passaic County (NJDEP 2024). There are many faults in the state. The Ramapo Fault, which separates the Piedmont and Highlands Physiographic Provinces, is best known. Numerous minor earthquakes have been recorded in the Ramapo Fault zone, a 10- to 20-mile-wide area lying adjacent to, and west, of the actual fault (NIDIS n.d.). Figure 10-1 illustrates the relationship of the Ramapo fault line with the physiologic provinces of the state. Passaic County is located in the Highlands and Piedmont Province and near the Ramapo Fault line.

Figure 10-1. Physiographic Provinces of the State of New Jersey and Ramapo Fault Line



Note: The red circle indicates the approximate location of Passaic County.
Source: Dombroski 1998 (Revised in 2005)

Soils Susceptible to Shaking

The National Earthquake Hazard Reduction Program (NEHRP) developed five soil classifications that affect the severity of an earthquake's impacts, based on the velocity at which earthquake-generated waves of energy travel through the soil. The soil classification system ranges from A to E, as shown in Table 10-1. Class A soils are hard rock, which reduces ground motions from an earthquake. Class E soils are soft soils that amplify ground shaking and increase damage and injuries. NEHRP soil information is incorporated into the Hazus earthquake model for the risk assessment of the earthquake hazard.

Table 10-1. NEHRP Soil Classifications

Soil Classification	Description
A	Hard Rock
B	Rock
C	Very dense soil and soft rock
D	Stiff soils
E	Soft soils

Source: FEMA n.d.

Passaic County is predominantly underlain by Class A soils, with bands of Class C soils throughout and areas of Class E soil in the southeastern portion of the county. Figure 10-2 shows the NEHRP soil distribution in the northeast quadrant of New Jersey. Figure 10-3 shows the locations of NEHRP Class D and E soils in Passaic County.

A New Jersey Department of Transportation (NJDOT) report on seismic design for bridges in the state (Anil Agrawal 2012) classifies soils according to the American Association of State Highway and Transportation Officials Guide Specifications for Bridge Seismic Design. Sites are classified into Soil Classes A, B, C, D, E and F, ranging from hard rock to soft soil and special soils (similar to the NEHRP soil classifications); refer to Table 10-2.

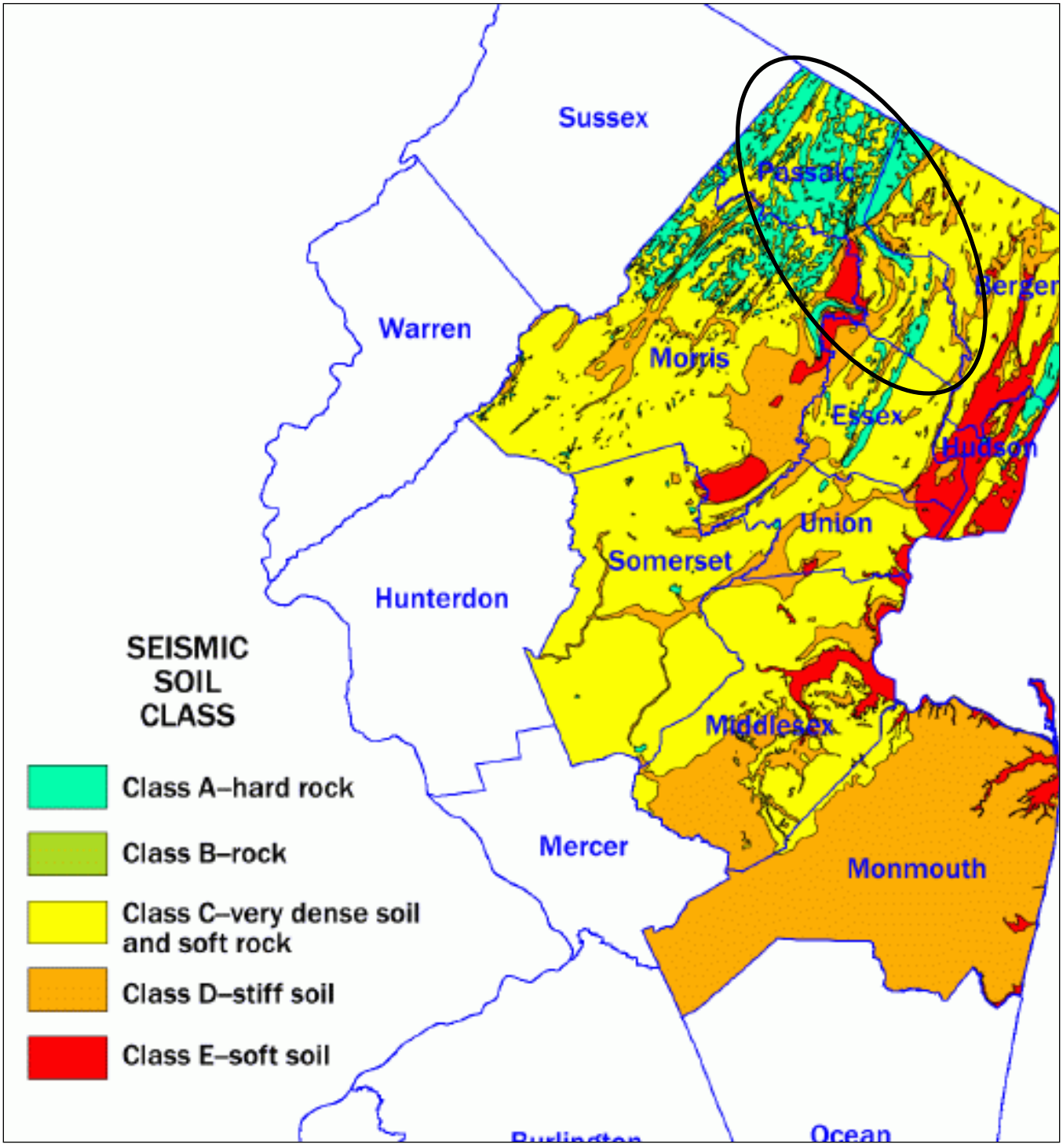
Table 10-2. NJDOT Soil Classifications

Soil Classification	Description
A-B	Rock sites
C	Very dense soil
D	Dense soil
E	Soft soil
F	Special soil requiring site-specific analysis

Source: NJDOT 2012

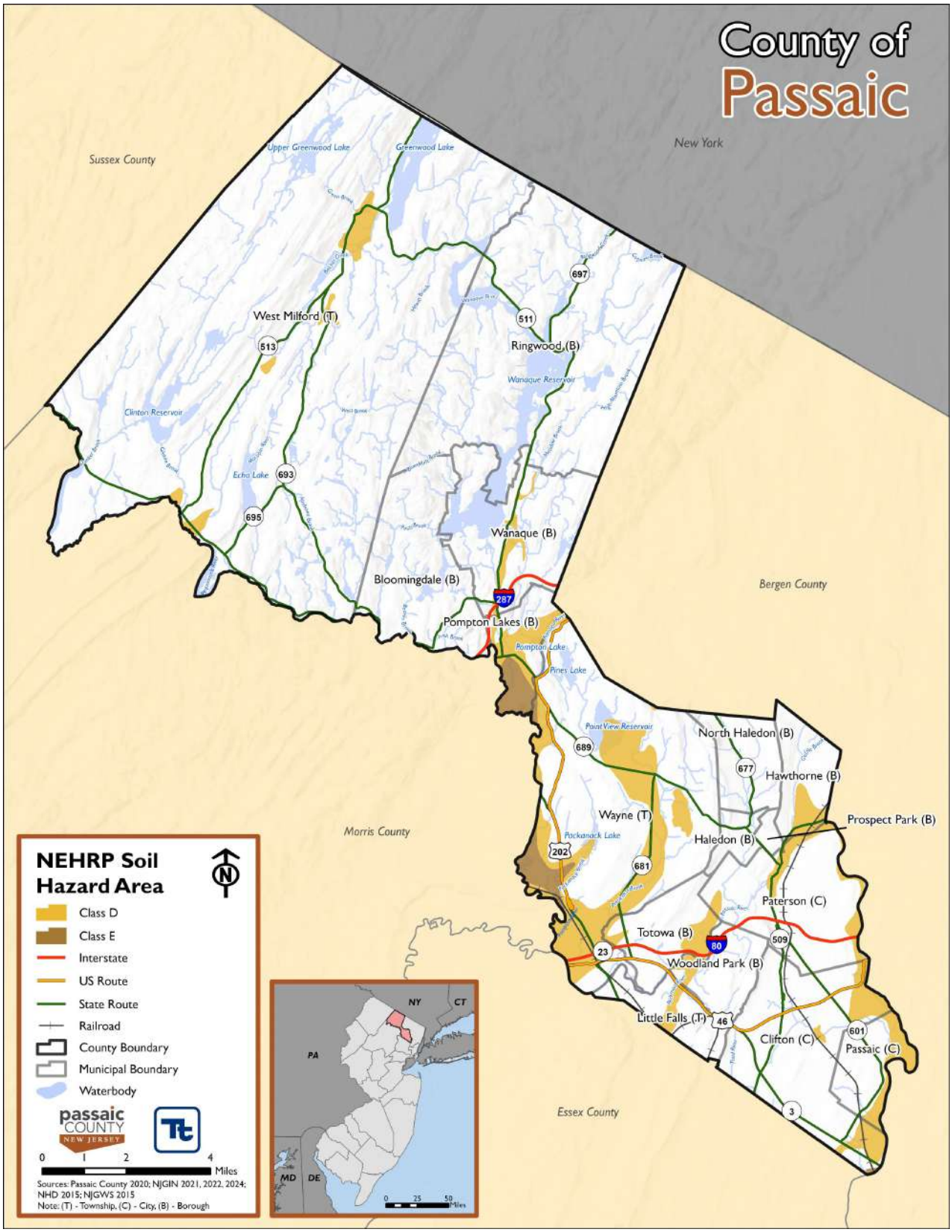
NJDOT also developed a Geotechnical Database Management System that contains soil boring data across the state. The soil boring logs were used to classify soil sites. Through this analysis, NJDOT developed a statewide map of soil site classes in which each ZIP code is assigned a class based on its predominant soil condition. In Passaic County, most ZIP codes are rated as Category C (Anil Agrawal 2012).

Figure 10-2. Seismic Soils in Northeastern New Jersey



Note: The black circle indicates the location of Passaic County.
Source: New Jersey Geological and Water Survey (NJGWS) and New Jersey Department of Environmental Protection (NJDEP) 2011

Figure 10-3. NEHRP Soils in Passaic County



Landslides

Landslides are common in New Jersey, primarily in the northern region of the state. In Passaic County, the areas most susceptible to landslides are near the center and southeastern portions of the County. Landslide risk is commonly assessed based on the susceptibility of an area to landslides (based on soils and slopes) and the past incidence of landslide events in the area. With the exception of the far southeastern area, most of Passaic County has high landslide susceptibility with moderate incidence. The central portion of the County has moderate landslide susceptibility with low incidence. The remainder of the County has a low susceptibility.

The New Jersey Geologic Survey (currently known as the NJGWS) determined landslide susceptibility for nine counties in New Jersey (Bergen, Essex, Hudson, Middlesex, Monmouth, Morris, Passaic, Somerset, and Union) (NJOEM 2024). Areas within these counties are classified into Class A, B, and C landslide susceptible classes, and several subclasses within these main classifications (FEMA 2020):

- Class A, which is strongly cemented rock at varying slope angles, includes AII, AIV and AVI.
- Class B, which is weakly cemented rock and soil at varying slope angles, includes subclasses BIII, BIV, BV, and BVI.
- Class C, which is shale and clayey soil at varying slope angles, includes subclasses CV, CVI, CVII, CIX, and CX.

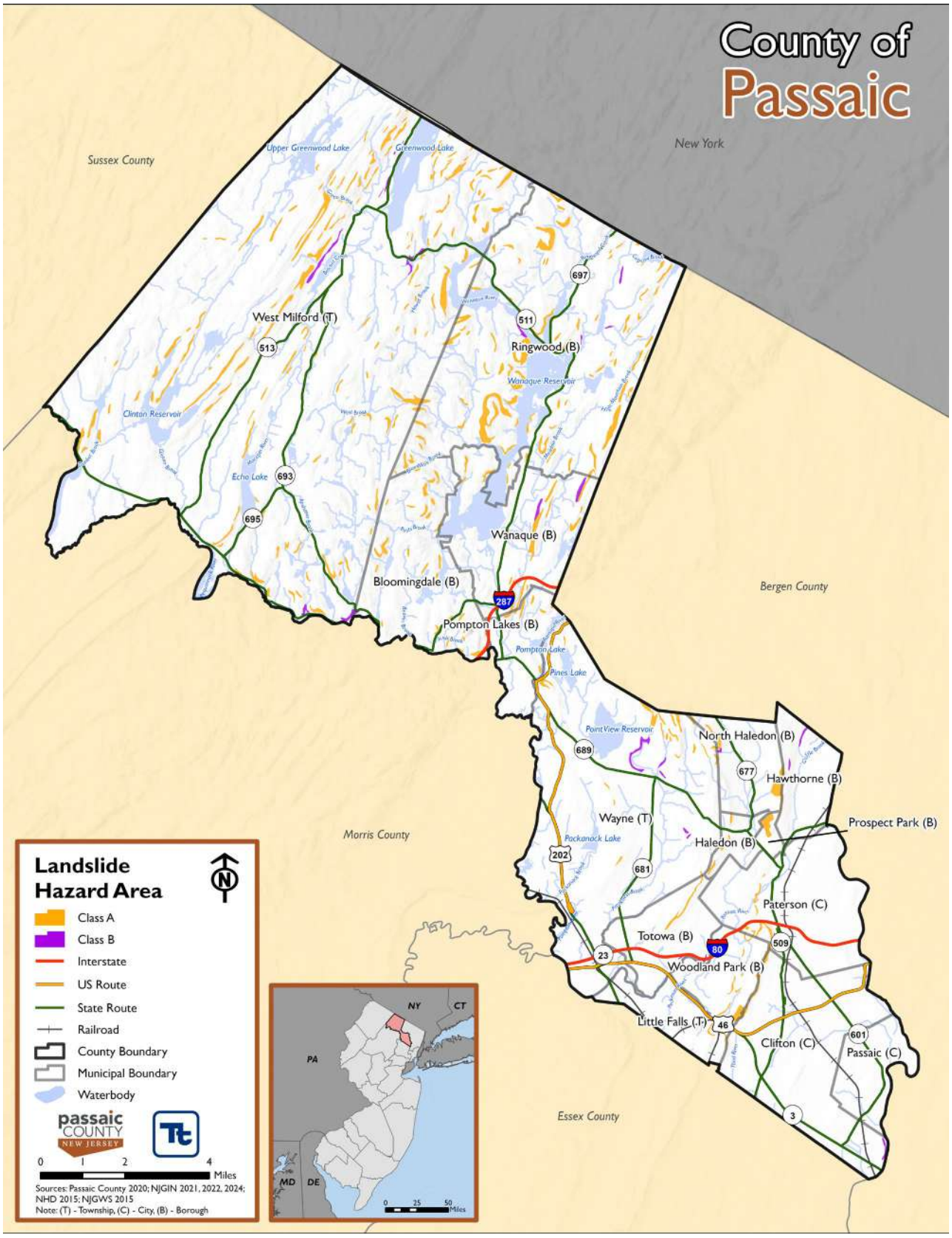
Figure 10-4 shows the landslide susceptibility in Passaic County. There are small areas throughout the County with Class A and Class B landslide susceptibility. Table 10-3 summarizes the area within each class. In total, 3,980 square miles (3.4 percent) of the County is identified as having Class A landslide susceptibility, and 364 square miles (0.3 percent) is identified as having Class B landslide susceptibility.

Table 10-3. Total Land Area Located in the Landslide Class A and B Hazard Areas

Jurisdiction	Total Land Area Excluding Water Bodies (acres)	Land Area (Excluding Water Bodies) in the Landslide Hazard Area			
		Class A Hazard Area (acres)	% of Jurisdiction Total	Class B Hazard Area (acres)	% of Jurisdiction Total
Bloomingdale (B)	5,615.2	209.4	3.7%	5.7	0.1%
Clifton (C)	7,314.8	51.1	0.7%	13.3	0.2%
Haledon (B)	778.6	40.3	5.2%	0.0	0.0%
Hawthorne (B)	2,153.0	14.6	0.7%	26.6	1.2%
Little Falls (T)	1,840.8	17.0	0.9%	0.0	0.0%
North Haledon (B)	2,257.5	110.2	4.9%	5.2	0.2%
Passaic (C)	2,073.4	0.0	0.0%	0.0	0.0%
Paterson (C)	5,564.1	68.3	1.2%	8.0	0.1%
Pompton Lakes (B)	1,831.8	50.3	2.7%	0.0	0.0%
Prospect Park (B)	300.8	58.0	19.3%	0.0	0.0%
Ringwood (B)	15,986.4	1,140.0	7.1%	42.3	0.3%
Totowa (B)	2,611.0	43.1	1.6%	24.9	1.0%
Wanaque (B)	5,060.5	238.6	4.7%	48.0	0.9%
Wayne (T)	15,232.7	188.2	1.2%	70.6	0.5%
West Milford (T)	48,071.3	1,654.7	3.4%	119.6	0.2%
Woodland Park (B)	1,965.8	96.4	4.9%	0.0	0.0%
Passaic County (Total)	118,657.8	3,980.1	3.4%	364.3	0.3%

Source: (NJGIN 2024); (NJGWS 2015)

Figure 10-4. Landslide Susceptibility in Passaic County



Areas of potential landsliding in Passaic County include steep slopes on basalt bedrock and till in the Watchung Mountains, steep slopes on gneiss and till in the Highlands, and a few steep slopes cut into glacial deposits by postglacial river erosion in the Pequannock, Wanaque, Passaic, and Preakness Valleys (NJGS 2004).

Subsidence/Sinkholes

New Jersey is susceptible subsidence and sinkholes, primarily in the northern region of the state. Sinkholes are generally concentrated in the northwestern part of the state. Areas underlain by carbonate rock may contain surface depressions and open drainage passages making the areas unstable and susceptible to subsidence and surface collapse. As a result, the alteration of drainage patterns, placement of impervious coverage, grade changes or increased loads can result in land subsidence and sinkhole formation (AGI 2001). In northern New Jersey, there are more than 225 square miles that are underlain by limestone, dolomite, and marble. In some areas, no sinkholes have appeared, while in others, sinkholes are common.

Figure 10-5 illustrates the locations of carbonate-bearing geologic formations in Passaic County. These formations are areas of potential natural subsidence. These geologic units contain a high enough percentage of carbonate minerals such as calcite and/or dolomite for karst features such as sinkholes to form. Some of these units are more prone to sinkhole development than others due to a greater carbonate content in the rock. Although not every unit listed has documented sinkholes, all are susceptible to dissolution by groundwater with resulting potential for sinkholes. According to this figure, carbonate rock formations can be found in the Township of West Milford, and the Boroughs of Wanaque, Ringwood, and Bloomingdale.

The region's susceptibility to subsidence is also due in part to the number of abandoned mines throughout New Jersey. There are approximately 450 underground mines in the state, all of which are now abandoned. Although these mines have closed, continued development in the northern part of the state has been problematic because of the extensive mining there, which has caused widespread subsidence. Many of the surface openings were improperly filled in, and roads and structures have been built adjacent to or on top of these former mine sites. The mapped locations of some of the abandoned mines are inaccurate.

Figure 10-6 shows the location of the mapped abandoned mines in Passaic County. The data from NJDEP and the figure indicate that Passaic County has at least 45 abandoned mines—mainly iron mines, with one graphite mine—all located in northern and central Passaic County (NJOEM 2019).

10.1.3 Extent

Earthquakes

Event Magnitude

An earthquake's magnitude describes the size at the focal point of an earthquake. Magnitude is most commonly expressed using the moment magnitude (Mw) scale. This scale is based on the total moment release of the earthquake (the product of the distance a fault moved, and the force required to move it) (USGS 2012).

Intensity, Shaking, and Peak Ground Acceleration

An earthquake has only one magnitude and one epicenter, but it produces a range of ground shaking at sites throughout the region, depending on the distance from the earthquake, the rock and soil conditions at sites, and variations in the propagation of seismic waves from the earthquake due to complexities in the structure of the earth's crust.

Figure 10-5. Carbonate Rock Regions of Passaic County

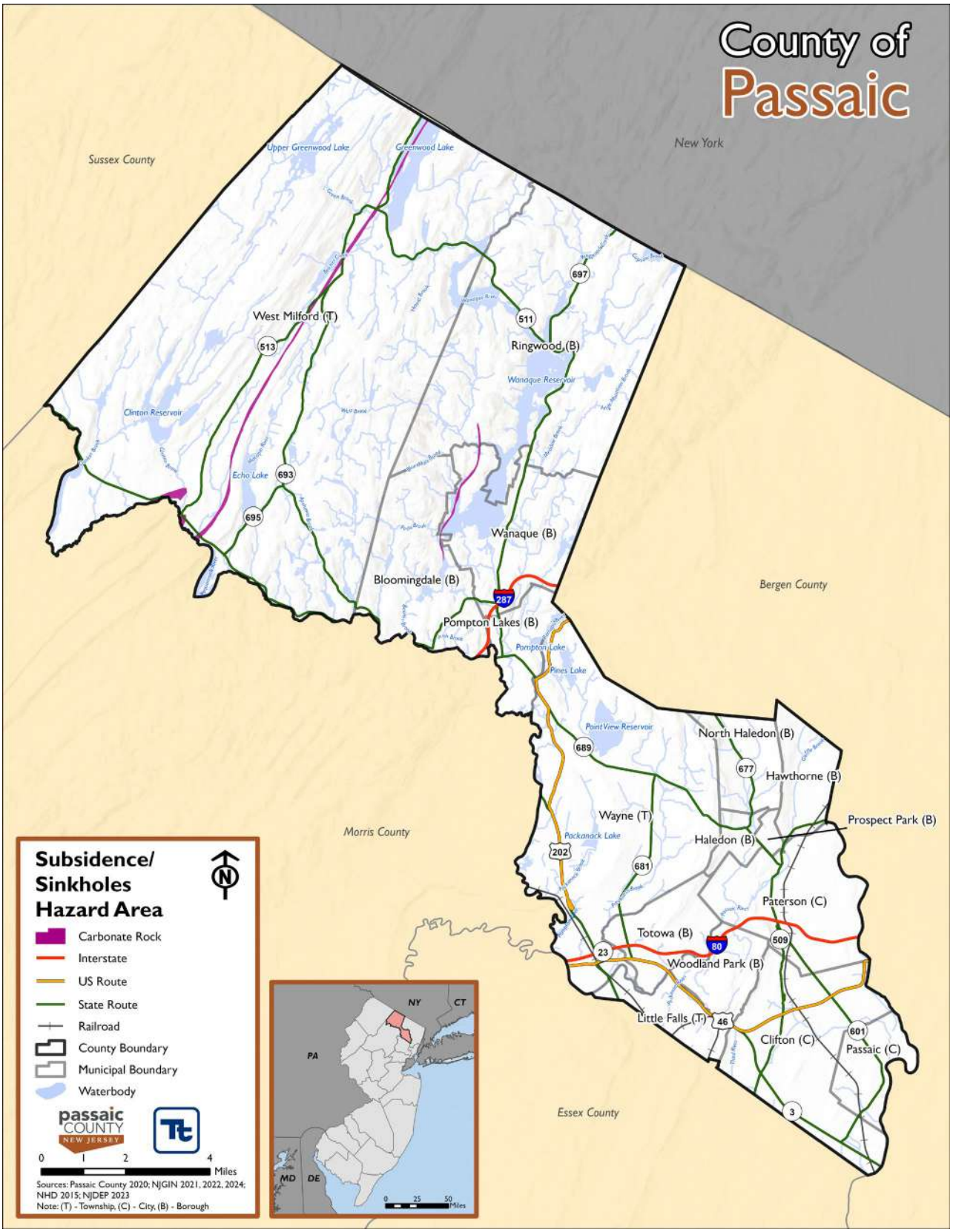
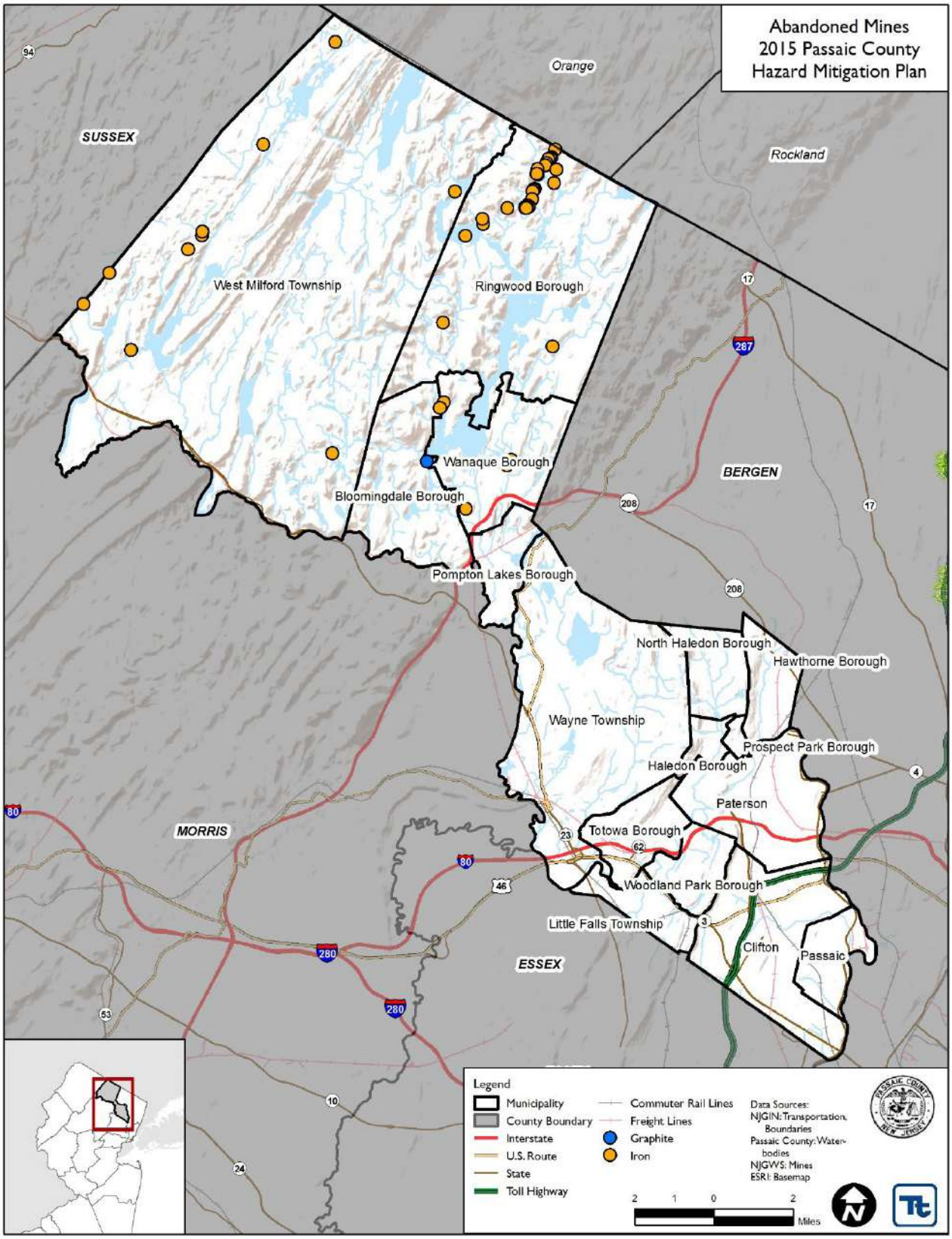


Figure 10-6. Abandoned Mines in Passaic County



The most used intensity scale is the modified Mercalli intensity scale (MMI). Ratings of the scale, as well as the perceived shaking and damage potential for structures, are shown in Table 10-4. The modified Mercalli intensity scale is generally represented visually using maps that show the expected ground shaking at any given location produced by an earthquake with a specified magnitude and epicenter.

Table 10-4. Modified Mercalli Intensity Scale

Mercalli Intensity	Description
I	Felt by very few people; barely noticeable.
II	Felt by few people, especially on upper floors.
III	Noticeable indoors, especially on upper floors, but may not be recognized as an earthquake.
IV	Felt by many indoors, few outdoors. May feel like passing truck.
V	Felt by almost everyone, some people awakened. Small objects move; trees and poles may shake.
VI	Felt by everyone; people have trouble standing. Heavy furniture can move; plaster can fall off walls. Chimneys may be slightly damaged.
VII	People have difficulty standing. Drivers feel their cars shaking. Some furniture breaks. Loose bricks fall from buildings. Damage is slight to moderate in well-built buildings; considerable in poorly built buildings.
VIII	Well-built buildings suffer slight damage. Poorly built structures suffer severe damage. Some walls collapse.
IX	Considerable damage to specially built structures; buildings shift off their foundations. The ground cracks. Landslides may occur.
X	Most buildings and their foundations are destroyed. Some bridges are destroyed. Dams are seriously damaged. Large landslides occur. Water is thrown on the banks of canals, rivers, and lakes. The ground cracks in large areas.
XI	Most buildings collapse. Some bridges are destroyed. Large cracks appear in the ground. Underground pipelines are destroyed.
XII	Almost everything is destroyed. Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move.

Source: USGS 2021

The ground experiences acceleration as it shakes during an earthquake. The peak ground acceleration (PGA) is the largest acceleration that occurs during an earthquake. PGA is a measure of how hard the earth shakes in a given geographic area. It is expressed as a percentage of the acceleration due to gravity (%g). Horizontal and vertical PGA varies with soil or rock type (UNDRR n.d.). Table 10-5 displays the MMI scale and its relationship to the area's PGA. Damage levels experienced in an earthquake vary with the intensity of ground shaking and with the seismic capacity of structures, as noted in Table 10-6.

Table 10-5. Modified Mercalli Intensity and PGA Equivalents

Modified Mercalli Intensity	Peak Ground Acceleration (%g)	Perceived Shaking	Potential Damage
I	<.17	Not Felt	None
II	.17 – 1.4	Weak	None
III	.17 – 1.4	Weak	None
IV	1.4 – 3.9	Light	None
V	3.9 – 9.2	Moderate	Very Light
VI	9.2 – 18	Strong	Light
VII	18 – 34	Very Strong	Moderate
VIII	34 – 65	Severe	Moderate to Heavy

Source: USGS 2021

Table 10-6. Damage Levels Experienced in Earthquakes

Ground Motion	Explanation of Damages
1-2%g	Motions are widely felt by people; hanging plants and lamps swing strongly, but damage levels, if any, are usually very low.
Below 10%g	Usually causes only slight damage, except in unusually vulnerable facilities.
10 - 20%g	May cause minor-to-moderate damage in well-designed buildings and more damage in poorly designed buildings. Only unusually poor buildings would be subject to potential collapse.
20 - 50%g	May cause significant damage in some modern buildings and very high levels of damage (including collapse) in poorly designed buildings.
≥50%g	May causes higher levels of damage in many buildings, even those designed to resist seismic forces.

Source: NJOEM 2011
Note: %g = peak ground acceleration as a percent of the acceleration due to gravity

Earthquake hazard assessment involves estimating the annual probability that certain ground accelerations will be exceeded and then summing the annual probabilities over a time period of interest. National maps of earthquake shaking hazards provide information for creating and updating seismic design requirements for building codes, insurance rate structures, earthquake loss studies, retrofit priorities, and land use planning. After thorough review of the studies, professional organizations of engineers update the seismic-risk maps and seismic design requirements contained in building codes. The USGS updated the National Seismic Hazard Maps in 2023 to produce a standard of practice for public policy and other engineering applications (FERC 2020).

A probabilistic assessment was conducted for the 500- and 2,500-year mean return period (MRP) earthquake events in Hazus to analyze the earthquake hazard for Passaic County. The Hazus analysis evaluates the statistical likelihood that a specific event will occur and what consequences will occur. A 500-year MRP is an earthquake with 0.2 percent chance that mapped PGAs will be exceeded in any given year. A 2,500-year MRP is an earthquake with 0.04 percent chance that mapped PGAs will be exceeded in any given year. Figure 10-7 and Figure 10-8 illustrate the geographic distribution of PGA for the 500- and 2,500-year MRP events.

Liquefaction

Liquefaction occurs in saturated soils. When it occurs, the strength of the soil decreases and the ability of a soil deposit to support foundations for buildings and bridges is reduced. Liquefaction has been responsible for tremendous amounts of damage in historical earthquakes around the world. Shaking behavior and liquefaction susceptibility of soils are determined by their grain size, thickness, compaction, and degree of saturation. These properties, in turn, are determined by the geologic origin of the soils and their topographic position. Figure 10-9 shows the liquefaction susceptibility class for natural soils in Passaic County. The categories are as follows:

- Category 1 – Very Low
- Category 2 – Low
- Category 3 – Moderate
- Category 4 – High

The majority of Passaic County has low to no liquefaction susceptibility (NJDEP 2021). In some areas, these natural soils are overlaid with fill, particularly those in Category 4. Typically, fill has a low liquefaction susceptibility. Uncompacted sand and silt fills may liquefy. The behavior or fill during seismic shaking should be addressed on a site-specific basis.

Figure 10-7. Peak Ground Acceleration 500-Year MRP for Passaic County

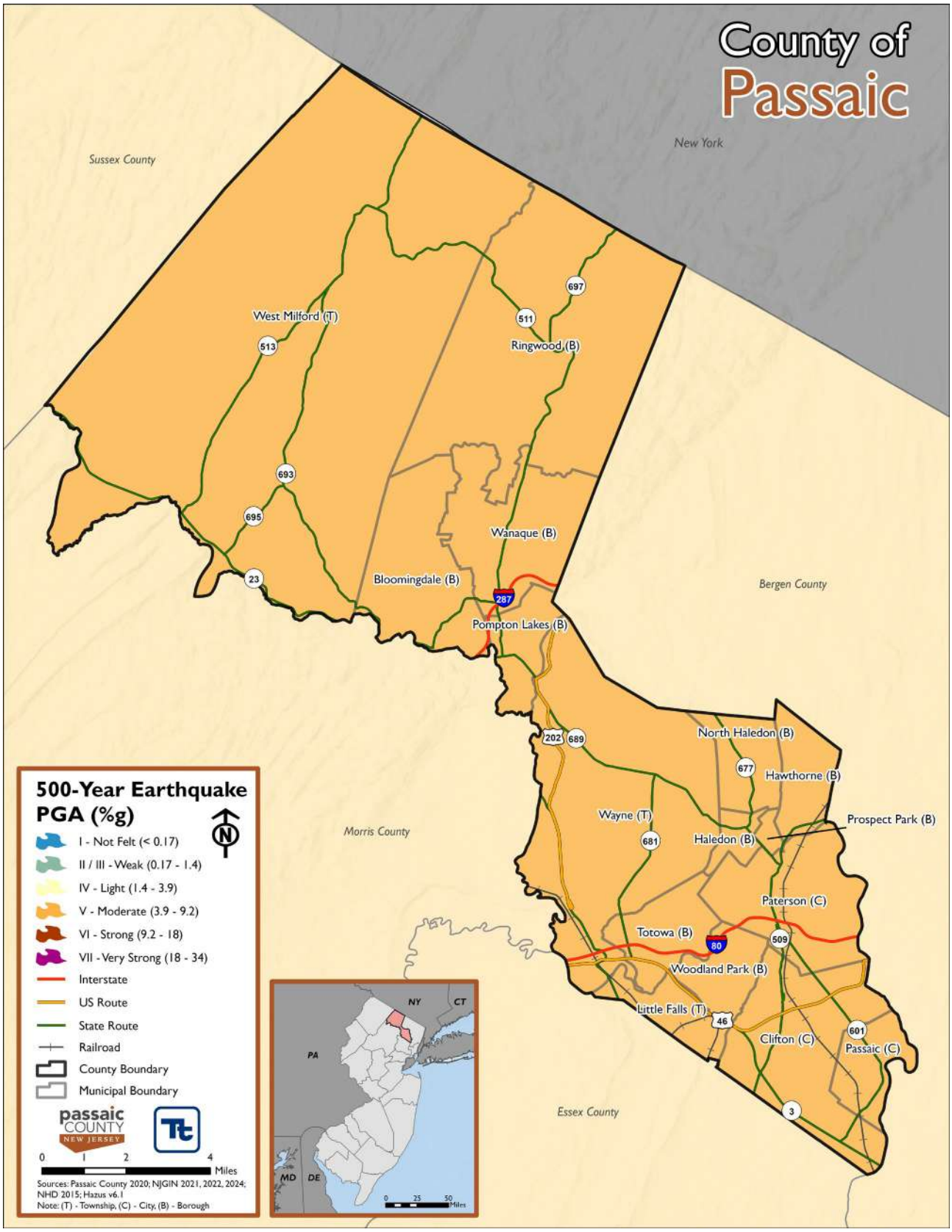


Figure 10-8. Peak Ground Acceleration 2,500-Year MRP for Passaic County

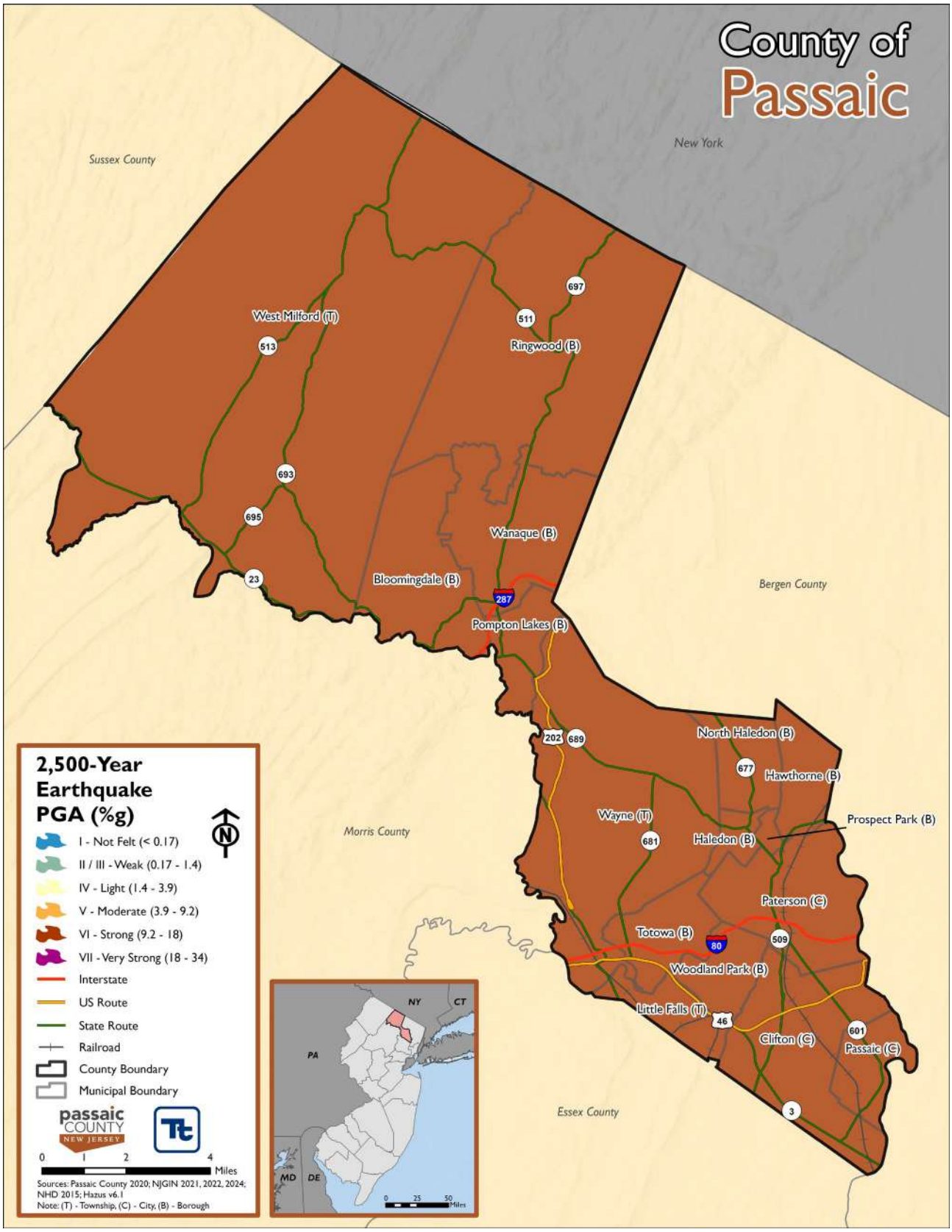
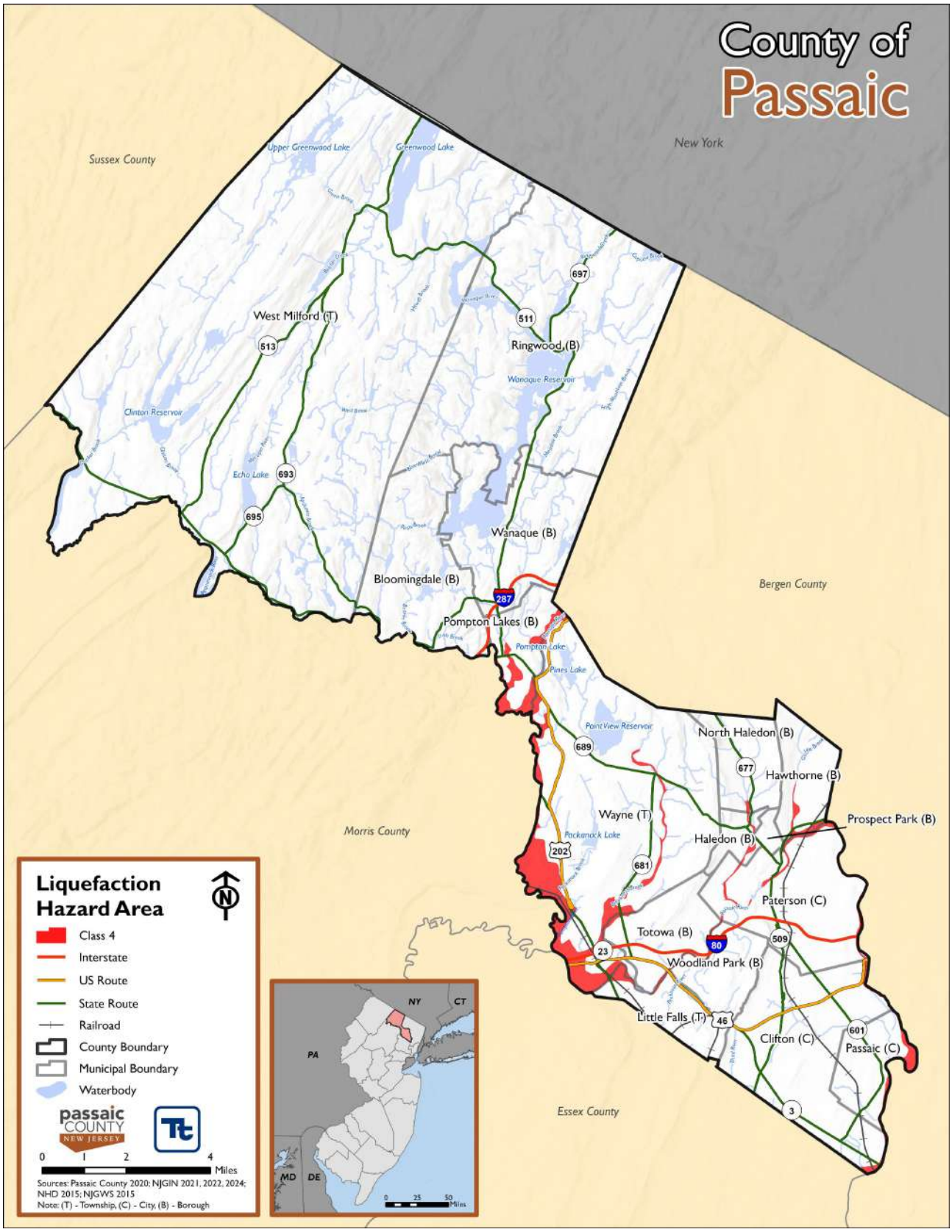


Figure 10-9. Liquefaction Susceptibility Class in Passaic County



Landslide

To determine the extent of a landslide hazard, the affected areas need to be identified and the probability of the landslide occurring within some time period needs to be assessed. Natural variables that contribute to the overall extent of potential landslide activity in an area include soil properties, topographic position and slope, and historical incidence. The landslide hazard is often represented by landslide incidence and/or susceptibility, as defined below (NJGWS 2013):

- Landslide incidence is the number of landslides that have occurred in a given geographic area. High incidence means greater than 15 percent of a given area has been involved in landsliding; medium incidence means that 1.5 to 15 percent of an area has been involved; and low incidence means that less than 1.5 percent of an area has been involved.
- Landslide susceptibility is the probable degree of response of geologic formations to natural or artificial cutting, to loading of slopes, or to unusually high precipitation. It can be assumed that unusually high precipitation or changes in existing conditions can initiate landslide movement. Landslide susceptibility depends on slope angle and the geologic material underlying the slope. High, medium, and low susceptibility are delimited by the same percentages used for classifying the incidence of landsliding.

Subsidence/Sinkhole

Subsidence in the U.S. has directly affected more than 17,000 square miles in 45 states, and associated annual costs are estimated to be $125 million. Global positioning systems (GPS) are used to monitor subsidence on a regional scale. Benchmarks are commonly spaced approximately 4 miles apart (USGS 2013).

Another method to monitor subsidence is Interferometric Synthetic Aperture Radar (InSAR). InSAR is a remote sensing technique that uses radar signals to interpolate land surface elevation changes. It is a cost-effective solution for measuring land surface deformation for a region while offering a high degree of spatial detail and resolution (USGS 2013).

10.1.4 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has not been included in any major disaster (DR) or emergency (EM) declarations for geological hazard-related events (FEMA 2023).

USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Between 2019 and 2023, Passaic County was not included in any USDA geological hazard-related agricultural disaster declarations (USDA 2024).

Previous Events

For this plan update, three geological hazard events were identified that impacted Passaic County between August 2019 and December 2023, as listed in Table 10-7. For events prior to 2019, refer to the 2020 Passaic County HMP.

Table 10-7. Geological Hazard Events in Passaic County (2019 to 2023)

Event Date	Event Type	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
September 9, 2020	Earthquake	N/A	N/A	1.8 miles southwest of Marlboro, NJ	3.1 magnitude earthquake resulted in shaking felt across the County
August 30, 2022	Earthquake	N/A	N/A	Outside Rockaway, NJ	1.7 magnitude earthquake resulted in shaking felt across the County
August 30, 2022	Earthquake	N/A	N/A	Outside Rockaway, NJ	2.3 magnitude earthquake resulted in shaking felt across the County

Source: USGS 2023; FEMA 2023

Note: The searched events included earthquakes, landslides, debris flow, sinkholes. Only those with known events were reflected in the table.

10.1.5 Probability of Future Occurrences

Probability Based on Previous Occurrences

New Jersey and Passaic County have not experienced a major geological hazard event. However, there have been a number of earthquakes of relatively low intensity. The majority of earthquakes in New Jersey have occurred along faults in the central and eastern Highlands, with the Ramapo fault being the most seismically active fault in the region (Volkert 2015). Small earthquakes may occur several times a year and generally do not cause significant damage.

The probability of future occurrences was calculated for geological hazards, as shown in Table 10-8. Based on historical records and input from the Planning Partnership, the probability of occurrence for earthquake in the County is considered “occasional.”

Table 10-8. Probability of Future Geological Hazards

Hazard Type	Number of Occurrences Between 1954 and 2024	Percent Chance of Occurring in Any Given Year
Earthquakes	3	4.2 %
Landslides	3	4.2.%
Rockslides	2	2.8 %
Debris Flow	3	4.2 %
Subsidence/Sinkholes	1	1.4 %
Total	**12**	**17 %**

Source: (NOAA-NCEI 2024) (NJDEP 2024) (USGS 2024)

Note: Not all events that have occurred in Passaic County are included due to limited documentation and the fact that not all sources have been identified or researched.

Effect of Climate Change on Future Probability

Earthquakes

The potential impacts of global climate change on earthquake probability are unknown. Some science suggests that melting glaciers could induce tectonic activity. As ice melts and water runs off, tremendous amounts of weight are shifted on the earth's crust. As newly freed crust returns to its original, pre-glacier shape, it could cause seismic plates to slip (NJOEM 2019). The lack of glaciers in New Jersey and the surrounding area makes it unlikely that glacier retreat will increase the occurrence of earthquake in Passaic County.

Secondary impacts of earthquakes could be magnified by future climate change. Soils saturated by repetitive storms could experience liquefaction during seismic activity because of the increased saturation. Dams storing increased volumes of water from changes in the hydrograph could fail during seismic events (NJOEM 2019).

Landslides

Increase in global temperature could affect the snowpack and its ability to hold and store water, resulting in an increase in the occurrence and duration of droughts. This in turn could increase the probability of wildfire, leading to the reduction in vegetation growth that helps to support steep slopes. Climate change may impact storm patterns, increasing the probability of more frequent, intense storms that could loosen unprotected soils. All these factors would increase the probability for landslide occurrences.

Subsidence/Sinkholes

One of the triggers for subsidence and sinkholes is an abundance of moisture that can permeate the bedrock. Climatologists expect an increase in annual precipitation amounts. This increase will coincide with an increased risk in subsidence and sinkholes in vulnerable areas.

10.1.6 Cascading Impacts on Other Hazards

Geological hazards such as earthquakes or landslides can elevate the risk of a dam failure. Seismic activity can cause slumping or settling of earth-filled dams, especially if the fill is not properly compacted. If the slumping occurs when the dam is full, then overtopping of the dam is possible, with rapid erosion leading to dam failure. Dam failure is also possible if strong ground motions heavily damage concrete dams. Earthquake-induced landslides into reservoirs have also caused dam failures.

10.2 VULNERABILITY AND IMPACT ASSESSMENT

To estimate the County's risk to the geologic hazard, the following hazard datasets were analyzed:

- NEHRP D&E Soils – sourced from NJGWS (2015)
- Liquefaction Class 4 - sourced from NJGWS (2015)
- Landslide Classes A and B – sourced from NJGWS (2015)
- Carbonate Rock – sourced from NJDEP (2023)

These datasets were overlaid on the updated asset inventory maps (population, building stock, critical facilities, and new development). Assets with their centroid located in the hazard area were totaled to estimate the totals and values at risk from the impacts of a geologic event.

The risk assessment for earthquake also included a Level 2 probabilistic assessment in Hazus for the 500- and 2,500-year MRP events to estimate injuries and structure damage. The probabilistic method uses information from historic earthquakes and inferred faults, locations and magnitudes, and computes the probable ground shaking levels that may be experienced during a recurrence period.

10.2.1 Life, Health, and Safety

Overall Population

Earthquakes

The entire County may experience the impacts of an earthquake. However, the degree of impact on people is dependent on many factors including the age and type of construction people live in, the soil type that homes are located on, and the intensity of the earthquake. Overall, risk to public safety and loss of life from an earthquake in the County is minimal for low magnitude events. However, there is a higher risk to public safety for those inside buildings due to structural damage or people walking below building ornamentations and chimneys that may be shaken loose and fall because of an earthquake.

NEHRP Soil Classes D and E amplify ground shaking to damaging levels and thus increase risk to the population. As shown in Table 10-9, 64,743 persons live within the NEHRP Soil Class D and E hazard areas. The Township of Wayne has the greatest population in the hazard area with 11,914 people.

Table 10-9. Estimated Population Living in the NEHRP Soils Class D and E Hazard Areas

Jurisdiction	Total Population (2022 ACS 5-Year Estimate)	Population in the NEHRP Soils (D&E) Hazard Area	
		Number of Persons	% of Jurisdiction Total
Bloomingdale (B)	7,726	0	0.0%
Clifton (C)	89,451	9,915	11.1%
Haledon (B)	8,945	0	0.0%
Hawthorne (B)	19,456	3,461	17.8%
Little Falls (T)	14,229	1,267	8.9%
North Haledon (B)	8,801	0	0.0%
Passaic (C)	70,048	10,946	15.6%
Paterson (C)	157,864	10,612	6.7%
Pompton Lakes (B)	11,052	9,594	86.8%
Prospect Park (B)	6,299	42	0.7%
Ringwood (B)	11,692	0	0.0%
Totowa (B)	10,975	2,584	23.5%
Wanaque (B)	11,217	1,916	17.1%
Wayne (T)	54,143	11,914	22.0%
West Milford (T)	24,797	1,151	4.6%
Woodland Park (B)	13,291	1,341	10.1%
Passaic County (Total)	519,986	64,743	12.5%

Source: (US Census Bureau 2022); (NJGWS 2015); (NJOIT 2024); Microsoft 2019

Table 10-10 shows that 7,313 persons live in the Liquefaction Class 4 hazard area. The Township of Wayne has the greatest population in the hazard area with 2,409 people.

Table 10-10. Population in the Liquefaction Class 4 Hazard Area

Jurisdiction	Total Population (2022 ACS 5-Year Estimate)	Population in the Liquefaction Class 4 Hazard Area	
		Number of Persons	% of Jurisdiction Total
Bloomingdale (B)	7,726	0	0.0%
Clifton (C)	89,451	0	0.0%
Haledon (B)	8,945	411	4.6%
Hawthorne (B)	19,456	19	0.1%
Little Falls (T)	14,229	1,568	11.0%
North Haledon (B)	8,801	0	0.0%
Passaic (C)	70,048	920	1.3%
Paterson (C)	157,864	381	0.2%
Pompton Lakes (B)	11,052	1,487	13.5%
Prospect Park (B)	6,299	0	0.0%
Ringwood (B)	11,692	0	0.0%
Totowa (B)	10,975	62	0.6%
Wanaque (B)	11,217	0	0.0%
Wayne (T)	54,143	2,409	4.4%
West Milford (T)	24,797	0	0.0%
Woodland Park (B)	13,291	56	0.4%
Passaic County (Total)	519,986	7,313	1.4%

Source: (US Census Bureau 2022); (NJGWS 2015); (NJOIT 2024); Microsoft 2019

Hazus estimated the number of people who might be injured or killed by an earthquake, categorizing casualties into severity levels based on the extent of injuries. The analysis provided casualty estimates for three times of day—2:00 AM, 2:00 PM, and 5:00 PM—to reflect peak occupancy in different community sectors. The 2:00 AM estimate considers maximum residential occupancy, the 2:00 PM estimate accounts for peak occupancy in educational, commercial, and industrial sectors, and the 5:00 PM estimate represents peak commute time. This approach helps to understand the varying impact of an earthquake depending on the time of day and the corresponding occupancy levels in different sectors. The Hazus analysis was conducted for the 500- and 2,500-year MRP events; results for each are shown in Table 10-11.

Residents may be displaced or require temporary to long-term sheltering due to an earthquake. The number of people requiring shelter is generally less than the number displaced, as some displaced persons use hotels or stay with family or friends after a disaster event. Hazus estimated no people with sheltering needs for Passaic County for an earthquake event with a 500-year MRP. For the 2,500-year MRP, 120 persons would require sheltering as shown in Table 10-12.

Table 10-11. Estimated Casualties from 500-Year and 2,500-Year MRP Earthquake Events

Time of Day Event Occurs	500-Year MRP Earthquake Event			2,500-Year MRP Earthquake Event		
	Non-Hospitalized Injuries	Hospitalizations	Fatalities	Non-Hospitalized Injuries	Hospitalizations	Fatalities
2:00 a.m.	2	0	0	37	2	0
2:00 p.m.	8	1	0	96	17	3
5:00 p.m.	2	0	0	28	3	0

Source: Hazus v6.1

Table 10-12. Person Seeking Sheltering, 500-Year and 2,500-Year MRP Earthquake Event

Jurisdiction	500-Year MRP Earthquake Event		2,500-Year MRP Earthquake Event	
	Displaced Households	Persons Seeking Short-Term Sheltering	Displaced Households	Persons Seeking Short-Term Sheltering
Bloomingdale (B)	0	0	0	0
Clifton (C)	0	0	17	9
Haledon (B)	0	0	0	0
Hawthorne (B)	0	0	3	1
Little Falls (T)	0	0	1	0
North Haledon (B)	0	0	0	0
Passaic (C)	0	0	16	13
Paterson (C)	0	0	31	24
Pompton Lakes (B)	0	0	0	0
Prospect Park (B)	0	0	0	0
Ringwood (B)	0	0	0	0
Totowa (B)	0	0	0	0
Wanaque (B)	0	0	1	0
Wayne (T)	0	0	3	1
West Milford (T)	0	0	0	0
Woodland Park (B)	0	0	0	0
Passaic County (Total)	0	0	72	48

Source: Hazus v6.1; (US Census Bureau 2022)
Note: Population rounded down; All results 0 for 500-year MRP event.

Landslides and Subsidence/Sinkholes

Generally, a landslide or subsidence event is an isolated incidence, impacting the populations within the immediate area. In addition to causing damage to residential buildings and displacing residents, landslides and subsidence events can block or damage major roadways and inhibit travel for emergency responders or populations trying to evacuate the area.

Table 10-13 summarizes the population living in the landslide class A and class B hazard areas. Overall, there are 842 people residing in the landslide class A hazard area and 466 in the landslide class B hazard area. The Borough of Woodland Park (232) and the Borough of Ringwood (161) have the greatest number of residents living in the landslide class A hazard area. The Borough of Wanaque (147) and the Township of Wayne (115) have the greatest number of residents living in the landslide class B hazard area.

Table 10-13. Estimated Population in the Landslide Class A and Class B Hazard Areas

Jurisdiction	Total Population (2022 ACS 5-Year Estimate)	Population in the Class A Hazard Area		Population in the Class B Hazard Area	
		Number of Persons	% of Jurisdiction Total	Number of Persons	% of Jurisdiction Total
Bloomingdale (B)	7,726	7	0.1%	11	0.1%
Clifton (C)	89,451	14	<0.1%	0	0.0%
Haledon (B)	8,945	5	0.1%	0	0.0%
Hawthorne (B)	19,456	7	<0.1%	103	0.5%
Little Falls (T)	14,229	0	0.0%	0	0.0%
North Haledon (B)	8,801	146	1.7%	0	0.0%
Passaic (C)	70,048	0	0.0%	0	0.0%
Paterson (C)	157,864	23	<0.1%	0	0.0%
Pompton Lakes (B)	11,052	30	0.3%	0	0.0%
Prospect Park (B)	6,299	7	0.1%	0	0.0%
Ringwood (B)	11,692	161	1.4%	5	<0.1%
Totowa (B)	10,975	121	1.1%	6	0.1%
Wanaque (B)	11,217	0	0.0%	147	1.3%
Wayne (T)	54,143	77	0.1%	115	0.2%
West Milford (T)	24,797	12	<0.1%	79	0.3%
Woodland Park (B)	13,291	232	1.7%	0	0.0%
Passaic County (Total)	519,986	842	0.2%	466	0.1%

Source: (US Census Bureau 2022); (NJOIT 2024); Microsoft 2019; (NJGWS 2015)

Table 10-14 summarizes the population living in areas with carbonate bedrock. Overall, 646 people are living on carbonate bedrock. There are two jurisdictions that contain residents living on carbonate bedrock: the Town of West Milford (618) and the Borough of Wanaque (28).

Socially Vulnerable Population

Research indicates that while some populations may not face higher hazard exposure, they can experience more severe impacts and longer recovery times if affected. This is due to factors like decreased mobility, limited financial resources to respond to hazards, and the quality and location of their housing. For instance, the elderly and those living in poverty are at greater risk during geological events due to potential limited access to mobilization or medical resources.

Table 10-14. Estimated Population in the Sinkhole Hazard Areas

Jurisdiction	Total Population (2022 ACS 5-Year Estimate)	Population in the Carbonate (Sinkholes/Karst) Hazard Area	
		Number of Persons	% of Jurisdiction Total
Bloomingdale (B)	7,726	0	0.0%
Clifton (C)	89,451	0	0.0%
Haledon (B)	8,945	0	0.0%
Hawthorne (B)	19,456	0	0.0%
Little Falls (T)	14,229	0	0.0%
North Haledon (B)	8,801	0	0.0%
Passaic (C)	70,048	0	0.0%
Paterson (C)	157,864	0	0.0%
Pompton Lakes (B)	11,052	0	0.0%
Prospect Park (B)	6,299	0	0.0%
Ringwood (B)	11,692	0	0.0%
Totowa (B)	10,975	0	0.0%
Wanaque (B)	11,217	28	0.2%
Wayne (T)	54,143	0	0.0%
West Milford (T)	24,797	618	2.5%
Woodland Park (B)	13,291	0	0.0%
Passaic County (Total)	519,986	646	0.1%

Source: (US Census Bureau 2022); (NJOIT 2024); Microsoft 2019; NJDEP 2023

Earthquake

Table 10-15 presents the estimated socially vulnerable populations located within the NEHRP Soils Class D and E hazard areas. There are 10,206 persons over the age of 65 years, 3,920 persons under the age of 5 years, 7,080 non-English speakers, 5,690 persons with a disability, and 7,348 living in poverty located in these areas. Table 10-16 presents the estimated socially vulnerable populations located within the Liquefaction Class 4 hazard area. There are 1,180 persons over the age of 65 years, 391 persons under the age of 5 years, 522 non-English speakers, 579 persons with a disability, and 573 living in poverty located in this hazard area.

Landslide and Subsidence/Sinkholes

Table 10-17 presents the estimated socially vulnerable populations living in the landslide class A and class B hazard areas. There are 160 persons over the age of 65 years, 40 persons under the age of 5 years, 33 non-English speakers, 68 persons with a disability, and 47 living in poverty located in the landslide class A hazard area. There are 93 persons over the age of 65 years, 20 persons under the age of 5 years, 11 non-English speakers, 43 persons with a disability, and 20 living in poverty located in the landslide class B hazard area.

Table 10-18 presents the estimated socially vulnerable populations located in landscapes with carbonate bedrock. There are 122 persons over the age of 65 years, 41 persons under the age of 5 years, 6 non-English speakers, 52 persons with a disability, and 19 living in poverty located in landscapes with carbonate bedrock throughout Passaic County.

Table 10-15. Estimated Vulnerable Persons Located in the NEHRP D & E Soils Hazard Area

Jurisdiction	Estimated Number of Vulnerable Persons Located in the NEHRP D & E Soils Hazard Area									
	Persons Over 65	% of Total	Persons Under 5	% of Total	Non-English Speaking Persons	% of Total	Persons with a Disability	% of Total	Persons in Poverty	% of Total
Bloomingdale (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Clifton (C)	1,738	11.1%	541	11.1%	1,177	11.1%	1,141	11.1%	714	11.1%
Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Hawthorne (B)	719	17.8%	133	17.8%	160	17.7%	325	17.8%	169	17.8%
Little Falls (T)	195	8.9%	41	8.7%	53	8.8%	95	8.9%	41	8.9%
North Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Passaic (C)	981	15.6%	903	15.6%	2,454	15.6%	857	15.6%	2,385	15.6%
Paterson (C)	1,219	6.7%	836	6.7%	2,345	6.7%	857	6.7%	2,496	6.7%
Pompton Lakes (B)	1,537	86.8%	490	86.7%	197	86.4%	693	86.7%	833	86.8%
Prospect Park (B)	4	0.6%	3	0.6%	4	0.6%	6	0.7%	7	0.6%
Ringwood (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totowa (B)	500	23.5%	95	23.3%	80	23.3%	306	23.5%	98	23.3%
Wanaque (B)	427	17.1%	79	17.0%	50	16.9%	253	17.0%	118	17.0%
Wayne (T)	2,389	22.0%	630	22.0%	442	22.0%	956	22.0%	314	22.0%
West Milford (T)	216	4.6%	75	4.6%	12	4.6%	92	4.6%	35	4.6%
Woodland Park (B)	281	10.1%	94	10.0%	106	10.0%	109	10.1%	138	10.1%
Passaic County (Total)	10,206	13.0%	3,920	11.7%	7,080	10.3%	5,690	12.2%	7,348	10.7%

Source: (US Census Bureau 2022); (NJOIT 2024); (NJGWS 2015); Microsoft 2019

Table 10-16. Estimated Vulnerable Persons Located in the Liquefaction Class 4 Hazard Area

Jurisdiction	Estimated Number of Vulnerable Persons Located in the Liquefaction Class 4 Hazard Area									
	Persons Over 65	% of Total	Persons Under 5	% of Total	Non-English Speaking Persons	% of Total	Persons with a Disability	% of Total	Persons in Poverty	% of Total
Bloomingdale (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Clifton (C)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Haledon (B)	67	4.6%	25	4.5%	42	4.5%	47	4.6%	35	4.6%
Hawthorne (B)	3	0.1%	0	0.0%	0	0.0%	1	0.1%	0	0.0%
Little Falls (T)	241	11.0%	51	10.9%	66	11.0%	118	11.0%	50	10.8%
North Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Passaic (C)	82	1.3%	76	1.3%	206	1.3%	72	1.3%	200	1.3%
Paterson (C)	43	0.2%	30	0.2%	84	0.2%	30	0.2%	89	0.2%
Pompton Lakes (B)	238	13.4%	76	13.5%	30	13.2%	107	13.4%	129	13.4%
Prospect Park (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ringwood (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totowa (B)	12	0.6%	2	0.5%	1	0.3%	7	0.5%	2	0.5%
Wanaque (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Wayne (T)	483	4.4%	127	4.4%	89	4.4%	193	4.4%	63	4.4%
West Milford (T)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Woodland Park (B)	11	0.4%	4	0.4%	4	0.4%	4	0.4%	5	0.4%
Passaic County (Total)	1,180	1.5%	391	1.2%	522	0.8%	579	1.2%	573	0.8%

Source: (US Census Bureau 2022); (NJOIT 2024); (NJGWS 2015); Microsoft 2019

Table 10-17. Estimated Vulnerable Persons Located in the Landslide Hazard Areas

Jurisdiction	Estimated Number of Vulnerable Persons Located in the Class A Hazard Area					Estimated Number of Vulnerable Persons Located in the Class B Hazard Area				
	Persons Over 65	Persons Under 5	Non-English Speaking Persons	Persons with a Disability	Persons in Poverty	Persons Over 65	Persons Under 5	Non-English Speaking Persons	Persons with a Disability	Persons in Poverty
Bloomingdale (B)	1	0	0	0	0	1	0	0	0	1
Clifton (C)	2	0	1	1	1	0	0	0	0	0
Haledon (B)	0	0	0	0	0	0	0	0	0	0
Hawthorne (B)	1	0	0	0	0	21	3	4	9	5
Little Falls (T)	0	0	0	0	0	0	0	0	0	0
North Haledon (B)	35	8	3	13	5	0	0	0	0	0
Passaic (C)	0	0	0	0	0	0	0	0	0	0
Paterson (C)	2	1	5	1	5	0	0	0	0	0
Pompton Lakes (B)	4	1	0	2	2	0	0	0	0	0
Prospect Park (B)	0	0	0	1	1	0	0	0	0	0
Ringwood (B)	27	6	1	12	3	1	0	0	0	0
Totowa (B)	23	4	3	14	4	1	0	0	0	0
Wanaque (B)	0	0	0	0	0	32	6	3	19	9
Wayne (T)	15	4	2	6	2	23	6	4	9	3
West Milford (T)	2	0	0	0	0	14	5	0	6	2
Woodland Park (B)	48	16	18	18	24	0	0	0	0	0
Passaic County (Total)	160	40	33	68	47	93	20	11	43	20

Source: (US Census Bureau 2022); (NJOIT 2024); (NJGWS 2015); Microsoft 2019

Table 10-18. Estimated Vulnerable Persons Located in the Sinkholes Hazard Area

Jurisdiction	Number of Vulnerable Persons Living in the Carbonate (Sinkholes/Karst) Hazard Area				
	Persons Over 65	Persons Under 5	Non-English Speaking Persons	Persons with a Disability	Persons in Poverty
Bloomingdale (B)	0	0	0	0	0
Clifton (C)	0	0	0	0	0
Haledon (B)	0	0	0	0	0
Hawthorne (B)	0	0	0	0	0
Little Falls (T)	0	0	0	0	0
North Haledon (B)	0	0	0	0	0
Passaic (C)	0	0	0	0	0
Paterson (C)	0	0	0	0	0
Pompton Lakes (B)	0	0	0	0	0
Prospect Park (B)	0	0	0	0	0
Ringwood (B)	0	0	0	0	0
Totowa (B)	0	0	0	0	0
Wanaque (B)	6	1	0	3	1
Wayne (T)	0	0	0	0	0
West Milford (T)	116	40	6	49	18
Woodland Park (B)	0	0	0	0	0
Passaic County (Total)	122	41	6	52	19

Source: (US Census Bureau 2022); (NJOIT 2024); (NJGWS 2015); Microsoft 2019

10.2.2 General Building Stock

Earthquake

When earthquakes occur, the effects of ground shaking can extend over large areas. Older structures are particularly vulnerable due to less stringent building codes at the time of their construction and potential maintenance issues. The severity of the impacts also depends on occupancy and timing of the earthquake.

Location on Susceptible Soils

Table 10-19 summarizes the number of buildings built on the NEHRP D and E Soils hazard area and the total replacement cost of these buildings by jurisdiction. There are 15,022 buildings with a replacement cost value (RCV) of approximately $18.9 billion built on lands in the NEHRP D and E soils hazard area. The Township of Wayne has the greatest number of buildings built in the NEHRP D and E Soils hazard area; 3,894 buildings (25 percent of its total building stock) with an estimated replacement cost of $5.9 billion.

Table 10-20 summarizes the number of buildings built on the Liquefaction Class 4 hazard area and the total replacement cost of these buildings by jurisdiction. There are 2,133 buildings with an RCV of approximately $3.6 billion built on lands in the Liquefaction Class 4 hazard area. The Township of Wayne has the greatest number of buildings built in the Liquefaction Class 4 hazard area; 1,007 buildings (6.5-percent of its total building stock) with an estimated replacement cost of $1.6 billion.

Table 10-19. Number and Value of Buildings in the NEHRP D & E Soils Hazard Area

Jurisdiction	Jurisdiction Total Buildings		Buildings in the NEHRP D&E Soils Hazard Area			
			Number of Buildings		RCV	
	Count	RCV	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	0	0.0%	$0	0.0%
Clifton (C)	20,935	$15,833,226,790	2,459	11.7%	$2,490,585,729	15.7%
Haledon (B)	1,898	$1,277,354,659	0	0.0%	$0	0.0%
Hawthorne (B)	6,079	$3,946,342,797	1,142	18.8%	$952,274,341	24.1%
Little Falls (T)	2,915	$3,414,669,325	256	8.8%	$279,853,151	8.2%
North Haledon (B)	2,952	$2,161,286,853	0	0.0%	$0	0.0%
Passaic (C)	5,784	$11,383,166,371	952	16.5%	$3,226,794,645	28.3%
Paterson (C)	16,686	$18,630,913,440	1,183	7.1%	$2,381,965,768	12.8%
Pompton Lakes (B)	3,271	$1,954,260,257	2,811	85.9%	$1,447,486,690	74.1%
Prospect Park (B)	1,016	$492,237,246	6	0.6%	$8,718,987	1.8%
Ringwood (B)	4,369	$2,697,179,876	0	0.0%	$0	0.0%
Totowa (B)	3,765	$5,499,989,017	892	23.7%	$919,471,133	16.7%
Wanaque (B)	3,183	$2,352,891,840	598	18.8%	$479,884,648	20.4%
Wayne (T)	15,577	$15,872,014,112	3,894	25.0%	$5,946,715,728	37.5%
West Milford (T)	9,452	$5,622,763,478	470	5.0%	$289,102,833	5.1%
Woodland Park (B)	2,965	$3,101,377,870	359	12.1%	$450,161,439	14.5%
Passaic County (Total)	103,253	$95,597,936,857	15,022	14.5%	$18,873,015,092	19.7%

Source: Microsoft 2019; RS Means 2024; (NJGWS 2015); (NJOIT 2024)

Table 10-20. Number and Value of Buildings in the Liquefaction Class 4 Hazard Area

Jurisdiction	Jurisdiction Total Buildings		Buildings in the Liquefaction Class 4 Hazard Area			
			Number of Buildings		RCV	
	Count	RCV	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	0	0.0%	$0	0.0%
Clifton (C)	20,935	$15,833,226,790	10	<0.1%	$59,781,539	0.4%
Haledon (B)	1,898	$1,277,354,659	102	5.4%	$158,818,221	12.4%
Hawthorne (B)	6,079	$3,946,342,797	27	0.4%	$82,486,477	2.1%
Little Falls (T)	2,915	$3,414,669,325	308	10.6%	$148,136,012	4.3%
North Haledon (B)	2,952	$2,161,286,853	0	0.0%	$0	0.0%
Passaic (C)	5,784	$11,383,166,371	104	1.8%	$647,531,797	5.7%
Paterson (C)	16,686	$18,630,913,440	106	0.6%	$480,925,996	2.6%
Pompton Lakes (B)	3,271	$1,954,260,257	423	12.9%	$172,121,365	8.8%
Prospect Park (B)	1,016	$492,237,246	0	0.0%	$0	0.0%
Ringwood (B)	4,369	$2,697,179,876	0	0.0%	$0	0.0%
Totowa (B)	3,765	$5,499,989,017	31	0.8%	$215,562,469	3.9%
Wanaque (B)	3,183	$2,352,891,840	0	0.0%	$0	0.0%
Wayne (T)	15,577	$15,872,014,112	1,007	6.5%	$1,619,335,277	10.2%
West Milford (T)	9,452	$5,622,763,478	0	0.0%	$0	0.0%
Woodland Park (B)	2,965	$3,101,377,870	15	0.5%	$7,540,312	0.2%
Passaic County (Total)	103,253	$95,597,936,857	2,133	2.1%	$3,592,239,464	3.8%

Source: Microsoft 2019; RS Means 2024; (NJGWS 2015); (NJOIT 2024)

Table 10-21 displays the buildings located within the NEHRP D and E hazard area by general occupancy. The residential occupancy is the most exposed to this hazard area with 12,235 total buildings. The Township of Wayne holds the highest number of resident buildings (3,091) in the hazard area.

Table 10-21. Buildings in the NEHRP D & E Soils Hazard Area by General Occupancy

	Buildings in the NEHRP D&E Soils Hazard Area by General Occupancy Class			
Jurisdiction	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	0	0	0	0
Clifton (C)	2,028	397	25	9
Haledon (B)	0	0	0	0
Hawthorne (B)	905	212	19	6
Little Falls (T)	215	41	0	0
North Haledon (B)	0	0	0	0
Passaic (C)	749	164	16	23
Paterson (C)	890	222	50	21
Pompton Lakes (B)	2,502	282	10	17
Prospect Park (B)	6	0	0	0
Ringwood (B)	0	0	0	0
Totowa (B)	745	135	9	3
Wanaque (B)	469	108	11	10
Wayne (T)	3,091	729	45	29
West Milford (T)	376	87	0	7
Woodland Park (B)	259	94	5	1
Passaic County (Total)	12,235	2,471	190	126

Source: Microsoft 2019; (NJOIT 2024); (NJGWS 2015)

a. Other = Government, Religion, Agricultural, and Education

Table 10-22 lists buildings in the Liquefaction Class 4 hazard area by general occupancy. The exposure analysis estimates that the residential occupancy is the most exposed to this hazard with a total of 1,479 residential buildings. The Township of Wayne has the highest number of residential buildings (625) in this hazard area.

Level of Damage by Occupancy Class

Table 10-23 summarizes the expected damage to various building types during the 500- and 2,500-year MRP events. For residential buildings, the majority are expected to sustain no damage, with 99.4 percent undamaged in the 500-year period and 92.0 percent in the 2,500-year MRP. Minor damage is expected in a small percentage, increasing from 0.6 percent in the 500-year MRP to 6.9 percent in the 2,500-year MRP. Moderate to severe damage and destruction are rare across all building types, with slightly higher percentages in the 2,500-year period. Commercial, industrial, and other buildings show similar trends, with most buildings remaining undamaged, and minor damage percentages increasing 0.3 percent in the 500-year MRP to 4.2 percent in the 2,500-year MRP. Severe damage and destruction remain minimal across all categories. Another key factor in degree of vulnerability is age of facilities and infrastructure, which correlates with building standards in place at times of construction.

Table 10-22. Buildings in the Liquefaction Class 4 Hazard Area by General Occupancy

Jurisdiction	Buildings in the Liquefaction Class 4 Hazard Area by General Occupancy Class			
	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	0	0	0	0
Clifton (C)	0	7	3	0
Haledon (B)	71	29	2	0
Hawthorne (B)	5	18	3	1
Little Falls (T)	266	33	9	0
North Haledon (B)	0	0	0	0
Passaic (C)	63	32	6	3
Paterson (C)	32	62	12	0
Pompton Lakes (B)	388	26	7	2
Prospect Park (B)	0	0	0	0
Ringwood (B)	0	0	0	0
Totowa (B)	18	11	2	0
Wanaque (B)	0	0	0	0
Wayne (T)	625	355	23	4
West Milford (T)	0	0	0	0
Woodland Park (B)	11	4	0	0
Passaic County (Total)	1,479	577	67	10

Source: Microsoft 2019; (NJOIT 2024); (NJGWS 2015)

a. Other = Government, Religion, Agricultural, and Education

Table 10-23. Damage Severity by Occupancy Class

Total Number of Buildings in Occupancy	Severity of Expected Damage	500-Year MRP		2,500-Year MRP	
		Building Count	% Buildings in Occupancy Class	Building Count	% Buildings in Occupancy Class
Residential Exposure (Single and Multi-Family Dwellings)					
88,431	NONE	87,910	99.4%	81,360	92.0%
	MINOR	488	0.6%	6,075	6.9%
	MODERATE	32	<0.1%	946	1.1%
	SEVERE	0	0.0%	50	0.1%
	DESTRUCTION	0	0.0%	0	0.0%
Commercial Buildings					
13,055	NONE	13,009	99.6%	12,313	94.3%
	MINOR	40	0.3%	543	4.2%
	MODERATE	6	<0.1%	186	1.4%
	SEVERE	0	<0.1%	10	0.1%
	DESTRUCTION	0	<0.1%	2	<0.1%

Total Number of Buildings in Occupancy	Severity of Expected Damage	500-Year MRP		2,500-Year MRP	
		Building Count	% Buildings in Occupancy Class	Building Count	% Buildings in Occupancy Class
Industrial Buildings					
738	NONE	729	98.8%	670	90.8%
	MINOR	7	0.9%	45	6.1%
	MODERATE	2	0.3%	20	2.7%
	SEVERE	0	<0.1%	3	0.4%
	DESTRUCTION	0	<0.1%	0	0.1%
Other Buildings[a]					
1,029	NONE	1,014	98.6%	917	89.1%
	MINOR	12	1.1%	81	7.9%
	MODERATE	3	0.3%	25	2.5%
	SEVERE	0	<0.1%	4	0.4%
	DESTRUCTION	0	0.0%	1	0.1%

Source: Hazus v6.1; Microsoft 2019; (NJOIT 2024)

a. Other = Government, Religion, Agricultural, and Education

Estimated Losses

Table 10-24 and Table 10-25 provide an overview of the estimated losses in various jurisdictions within Passaic County during earthquakes with a 500-year and 2,500-year MRP. For the 500-year MRP event, the total estimated losses to residential, commercial, and other buildings is about $23 million, which is less than 0.1 percent of the total Couty RCV. For the 2,500-year MRP event, the total estimated loss is about $591 million, or 0.6 percent of the total Couty RCV. This includes significant losses across residential, commercial, and other buildings, with the City of Paterson experiencing the highest total loss of approximately $128 million.

Table 10-24. Estimated Losses Due to 500-Year MRP Earthquake Events

Jurisdiction	Total Replacement Cost Value (RCV)	Estimated Loss				
		Residential	Commercial	Other[a]	Total	
					Damage	% of RCV
Bloomingdale (B)	$1,358,262,927	$116,312	$23,885	$26,953	$167,149	<0.1%
Clifton (C)	$15,833,226,790	$2,223,980	$1,613,412	$1,252,332	$5,089,723	<0.1%
Haledon (B)	$1,277,354,659	$84,000	$28,590	$77,793	$190,383	<0.1%
Hawthorne (B)	$3,946,342,797	$665,432	$249,941	$295,491	$1,210,863	<0.1%
Little Falls (T)	$3,414,669,325	$368,308	$218,758	$253,203	$840,269	<0.1%
North Haledon (B)	$2,161,286,853	$315,617	$41,850	$37,491	$394,958	<0.1%
Passaic (C)	$11,383,166,371	$1,639,041	$722,667	$764,330	$3,126,038	<0.1%
Paterson (C)	$18,630,913,440	$1,566,767	$1,667,655	$2,054,100	$5,288,521	<0.1%
Pompton Lakes (B)	$1,954,260,257	$162,738	$34,884	$63,161	$260,783	<0.1%
Prospect Park (B)	$492,237,246	$80,715	$25,473	$34,560	$140,749	<0.1%
Ringwood (B)	$2,697,179,876	$225,555	$35,708	$45,201	$306,464	<0.1%

Jurisdiction	Total Replacement Cost Value (RCV)	Estimated Loss				
		Residential	Commercial	Other[a]	Total	
					Damage	% of RCV
Totowa (B)	$5,499,989,017	$353,152	$504,071	$315,929	$1,173,152	<0.1%
Wanaque (B)	$2,352,891,840	$315,794	$77,273	$266,495	$659,562	<0.1%
Wayne (T)	$15,872,014,112	$1,488,288	$1,071,757	$1,038,830	$3,598,875	<0.1%
West Milford (T)	$5,622,763,478	$497,904	$103,379	$119,378	$720,662	<0.1%
Woodland Park (B)	$3,101,377,870	$181,025	$76,371	$52,366	$309,762	<0.1%
Passaic County (Total)	$95,597,936,857	$10,284,626	$6,495,673	$6,697,613	$23,477,912	<0.1%

Source: Hazus v6.1; RS Means 2024; Microsoft 2019; (NJOIT 2024)

a. Other = Government, Religion, Agricultural, and Education

Table 10-25. Estimated Damage Costs Due to 2,500-Year MRP Earthquake Events

Jurisdiction	Total Replacement Cost Value (RCV)	Estimated Damage to Structure and Contents				
		Residential	Commercial	Other[a]	Total	
					Damage	% of RCV
Bloomingdale (B)	$1,358,262,927	$4,097,324	$1,064,840	$611,451	$5,773,614	0.4%
Clifton (C)	$15,833,226,790	$52,474,112	$38,403,141	$24,312,879	$115,190,132	0.7%
Haledon (B)	$1,277,354,659	$3,010,650	$1,417,293	$2,044,237	$6,472,180	0.5%
Hawthorne (B)	$3,946,342,797	$16,046,836	$6,598,261	$5,732,896	$28,377,993	0.7%
Little Falls (T)	$3,414,669,325	$8,861,114	$5,984,437	$5,306,507	$20,152,058	0.6%
North Haledon (B)	$2,161,286,853	$9,314,630	$1,689,932	$996,212	$12,000,773	0.6%
Passaic (C)	$11,383,166,371	$41,253,746	$22,077,829	$13,785,713	$77,117,288	0.7%
Paterson (C)	$18,630,913,440	$39,312,011	$42,448,658	$46,985,149	$128,745,818	0.7%
Pompton Lakes (B)	$1,954,260,257	$5,637,695	$1,781,074	$1,384,762	$8,803,531	0.5%
Prospect Park (B)	$492,237,246	$2,243,624	$652,706	$559,477	$3,455,807	0.7%
Ringwood (B)	$2,697,179,876	$7,712,829	$1,757,170	$1,534,834	$11,004,834	0.4%
Totowa (B)	$5,499,989,017	$9,092,316	$13,822,811	$8,541,204	$31,456,332	0.6%
Wanaque (B)	$2,352,891,840	$8,387,882	$2,293,365	$4,089,407	$14,770,654	0.6%
Wayne (T)	$15,872,014,112	$42,502,603	$27,494,799	$21,629,736	$91,627,137	0.6%
West Milford (T)	$5,622,763,478	$15,367,167	$4,142,362	$3,613,160	$23,122,689	0.4%
Woodland Park (B)	$3,101,377,870	$7,095,045	$4,298,553	$1,850,944	$13,244,543	0.4%
Passaic County (Total)	$95,597,936,857	$272,409,583	$175,927,231	$142,978,569	$591,315,383	0.6%

Source: Hazus v6.1; RS Means 2024; Microsoft 2019; (NJOIT 2024)

a. Other = Government, Religion, Agricultural, and Education

Landslide and Subsidence/Sinkholes

The built environment is vulnerable if built on soils/geology susceptible to landslides or sinkholes such as steep slopes or carbonate bedrock. Geological hazard areas may destabilize the foundation of structures resulting in monetary losses to businesses and residents.

Table 10-26 summarizes the number of buildings built on the Class A and Class B landslide hazard areas and the total replacement cost of these buildings by jurisdiction. There are 250 buildings, with an RCV of approximately $468 million, built on lands in the landslide Class A hazard area. There are 137 buildings, with an RCV of approximately $80 million, built in the landslide class B hazard area. The Borough of Ringwood has the greatest number of buildings in the landslide Class A hazard area—57 buildings (1.3 percent of its total building stock), with an estimated replacement cost of $28 million. The Borough of Wanaque has the greatest number of buildings in the landslide Class B hazard area—37 buildings (1.2 percent of its total building stock), with an estimated replacement cost of $18 million.

Table 10-27 lists the buildings in the landslide class A and Class B hazard area by general occupancy. The residential occupancy is the most exposed to landslide hazards, with 221 residential buildings in the landslide Class A hazard area, and 126 residential buildings in the landslide Class B hazard area. The Borough of Ringwood has the highest number of residential buildings (55) in the Class A hazard area, and the Borough of Wanaque has the highest number of residential buildings (36) in the Class B hazard area.

Table 10-28 summarizes the number of buildings built on carbonate bedrock and the total replacement cost of these buildings by jurisdiction. There are 245 buildings, with an RCV of approximately $126 million, built on lands with carbonate bedrock. The Township of Milford has the greatest number of buildings on carbonate bedrock—237 buildings (2.5 percent of its total building stock) with an estimated replacement cost of $122 million.

Table 10-29 lists the buildings located within the carbonate bedrock hazard area by general occupancy. The residential occupancy is the most exposed to the subsidence hazard area with 209 total buildings. The Township of West Milford holds the highest number of resident buildings (202) in the carbonate rock hazard area.

10.2.3 Community Lifelines and Other Critical Facilities

Earthquakes, landslides, and sinkholes can severely disrupt essential services such as power, water, transportation, and emergency response systems. When community lifelines and other critical facilities go offline, the community's ability to function and recover is significantly hindered. The following analysis explores the anticipated effects on various facilities and the extent of damage expected under different scenarios.

Earthquake

Table 10-30 shows the number of critical facilities located on NEHRP D and E soils. There are 254 facilities located in this hazard area, with the highest number among the safety and security lifeline (70). The Township of Wayne has the highest number of critical facilities (62) located in the NEHRP D and E soils hazard area.

Table 10-31 outlines the number of critical facilities in the Liquefaction Class 4 Hazard Area. The City of Paterson has the highest number of facilities in hazard areas (16), followed by the Township of Wayne (14). Overall, Passaic County has 69 facilities in the Liquefaction Class 4 hazard area, accounting for 5.2 percent of the jurisdictional total.

Table 10-26. Number and Value of Buildings in Landslide Hazard Area

Jurisdiction	Jurisdiction Total Buildings		Landslide Class A Hazard Area				Landslide Class B Hazard Area			
			Number of Buildings		RCV		Number of Buildings		RCV	
	Count	RCV	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	2	0.1%	$958,334	0.1%	3	0.1%	$1,078,377	0.1%
Clifton (C)	20,935	$15,833,226,790	3	<0.1%	$1,193,974	<0.1%	0	0.0%	$0	0.0%
Haledon (B)	1,898	$1,277,354,659	3	0.2%	$5,294,231	0.4%	0	0.0%	$0	0.0%
Hawthorne (B)	6,079	$3,946,342,797	2	<0.1%	$5,918,109	0.1%	27	0.4%	$15,103,481	0.4%
Little Falls (T)	2,915	$3,414,669,325	0	0.0%	$0	0.0%	0	0.0%	$0	0.0%
North Haledon (B)	2,952	$2,161,286,853	44	1.5%	$125,994,212	5.8%	0	0.0%	$0	0.0%
Passaic (C)	5,784	$11,383,166,371	0	0.0%	$0	0.0%	0	0.0%	$0	0.0%
Paterson (C)	16,686	$18,630,913,440	9	0.1%	$22,071,458	0.1%	0	0.0%	$0	0.0%
Pompton Lakes (B)	3,271	$1,954,260,257	8	0.2%	$4,017,888	0.2%	0	0.0%	$0	0.0%
Prospect Park (B)	1,016	$492,237,246	2	0.2%	$2,748,385	0.6%	0	0.0%	$0	0.0%
Ringwood (B)	4,369	$2,697,179,876	57	1.3%	$27,503,724	1.0%	2	<0.1%	$717,358	<0.1%
Totowa (B)	3,765	$5,499,989,017	38	1.0%	$34,325,140	0.6%	3	0.1%	$1,612,573	<0.1%
Wanaque (B)	3,183	$2,352,891,840	1	<0.1%	$147,715	<0.1%	37	1.2%	$18,246,241	0.8%
Wayne (T)	15,577	$15,872,014,112	20	0.1%	$14,925,704	0.1%	31	0.2%	$21,971,186	0.1%
West Milford (T)	9,452	$5,622,763,478	5	0.1%	$3,012,499	0.1%	34	0.4%	$20,789,964	0.4%
Woodland Park (B)	2,965	$3,101,377,870	56	1.9%	$219,864,650	7.1%	0	0.0%	$0	0.0%
Passaic County (Total)	103,253	$95,597,936,857	250	0.2%	$467,976,022	0.5%	137	0.1%	$79,519,181	0.1%

Source: Microsoft 2019; RS Means 2024; (NJGWS 2015); (NJOIT 2024)

Table 10-27. Buildings in the Landslide Hazard Area by General Occupancy Class

Jurisdiction	Landslide Class A Hazard Area				Landslide Class B Hazard Area			
	Residential	Commercial	Industrial	Other[a]	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	2	0	0	0	3	0	0	0
Clifton (C)	3	0	0	0	0	0	0	0
Haledon (B)	1	1	1	0	0	0	0	0
Hawthorne (B)	2	0	0	0	27	0	0	0
Little Falls (T)	0	0	0	0	0	0	0	0
North Haledon (B)	43	1	0	0	0	0	0	0
Passaic (C)	0	0	0	0	0	0	0	0
Paterson (C)	2	7	0	0	0	0	0	0
Pompton Lakes (B)	8	0	0	0	0	0	0	0
Prospect Park (B)	1	1	0	0	0	0	0	0
Ringwood (B)	55	2	0	0	2	0	0	0
Totowa (B)	35	2	1	0	2	1	0	0
Wanaque (B)	0	1	0	0	36	1	0	0
Wayne (T)	20	0	0	0	30	1	0	0
West Milford (T)	4	1	0	0	26	5	1	2
Woodland Park (B)	45	11	0	0	0	0	0	0
Passaic County (Total)	221	27	2	0	126	8	1	2

Source: (NJGWS 2015); (NJOIT 2024); Microsoft 2019

a. Other = Government, Religion, Agricultural, and Education

Table 10-28. Number and Value of Buildings in the Carbonate Rock Hazard Area

Jurisdiction	Jurisdiction Total Buildings		Buildings in the Carbonate Rock Hazard Area			
			Number of Buildings		RCV	
	County	RCV	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	0	0.0%	$0	0.0%
Clifton (C)	20,935	$15,833,226,790	0	0.0%	$0	0.0%
Haledon (B)	1,898	$1,277,354,659	0	0.0%	$0	0.0%
Hawthorne (B)	6,079	$3,946,342,797	0	0.0%	$0	0.0%
Little Falls (T)	2,915	$3,414,669,325	0	0.0%	$0	0.0%
North Haledon (B)	2,952	$2,161,286,853	0	0.0%	$0	0.0%
Passaic (C)	5,784	$11,383,166,371	0	0.0%	$0	0.0%

Jurisdiction	Jurisdiction Total Buildings		Buildings in the Carbonate Rock Hazard Area			
			Number of Buildings		RCV	
	County	RCV	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Paterson (C)	16,686	$18,630,913,440	0	0.0%	$0	0.0%
Pompton Lakes (B)	3,271	$1,954,260,257	0	0.0%	$0	0.0%
Prospect Park (B)	1,016	$492,237,246	0	0.0%	$0	0.0%
Ringwood (B)	4,369	$2,697,179,876	0	0.0%	$0	0.0%
Totowa (B)	3,765	$5,499,989,017	0	0.0%	$0	0.0%
Wanaque (B)	3,183	$2,352,891,840	8	0.3%	$3,992,663	0.2%
Wayne (T)	15,577	$15,872,014,112	0	0.0%	$0	0.0%
West Milford (T)	9,452	$5,622,763,478	237	2.5%	$122,352,578	2.2%
Woodland Park (B)	2,965	$3,101,377,870	0	0.0%	$0	0.0%
Passaic County (Total)	103,253	$95,597,936,857	245	0.2%	$126,345,240	0.1%

Source: Microsoft 2019; RS Means 2024; NJDEP 2023; (NJOIT 2024)

Table 10-29. Buildings in Carbonate Rock Hazard Aea by General Occupancy Class

Jurisdiction	Sinkholes (Carbonate Karst) Hazard Area			
	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	0	0	0	0
Clifton (C)	0	0	0	0
Haledon (B)	0	0	0	0
Hawthorne (B)	0	0	0	0
Little Falls (T)	0	0	0	0
North Haledon (B)	0	0	0	0
Passaic (C)	0	0	0	0
Paterson (C)	0	0	0	0
Pompton Lakes (B)	0	0	0	0
Prospect Park (B)	0	0	0	0
Ringwood (B)	0	0	0	0
Totowa (B)	0	0	0	0
Wanaque (B)	7	1	0	0
Wayne (T)	0	0	0	0
West Milford (T)	202	35	0	0
Woodland Park (B)	0	0	0	0
Passaic County (Total)	209	36	0	0

Source: Microsoft 2019; NJDEP 2023; (NJOIT 2024)

a. Other = Government, Religion, Agricultural, and Education

Table 10-30. Number of Facilities in the NEHRP D & E Soils Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the NEHRP D & E Soils Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	9	3	6	0	9	27	16.1%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	3	5	4	12	5	29	37.2%
Little Falls (T)	0	0	0	0	0	0	2	3	0	5	10.6%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	4	7	0	8	19	20.4%
Paterson (C)	0	2	1	2	6	14	7	1	6	39	13.5%
Pompton Lakes (B)	1	0	0	0	1	12	6	4	4	28	77.8%
Prospect Park (B)	0	0	0	0	0	0	1	0	0	1	5.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	2	0	2	1	2	3	10	13.7%
Wanaque (B)	0	0	0	0	3	8	0	5	1	17	34.0%
Wayne (T)	0	0	0	2	6	18	14	8	14	62	36.5%
West Milford (T)	0	0	0	1	0	1	1	4	1	8	7.0%
Woodland Park (B)	0	0	0	1	0	3	2	0	3	9	20.5%
Passaic County (Total)	1	2	1	8	28	70	51	39	54	254	19.1%

Source: (Passaic County Office of Emergency Management 2020); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (NJGWS 2015); (Passaic County Department of Planning & Economic Development 2024); Passaic County 2024

Table 10-31. Number of Facilities in the Liquefaction Class 4 Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the Liquefaction Class 4 Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	0	1	0	1	0.6%
Haledon (B)	0	0	0	0	0	0	7	0	0	7	23.3%
Hawthorne (B)	0	0	0	0	0	1	4	3	0	8	10.3%
Little Falls (T)	0	0	0	0	0	0	0	0	1	1	2.1%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	0	6	0	1	7	7.5%
Paterson (C)	0	0	0	0	0	0	15	0	1	16	5.6%
Pompton Lakes (B)	1	0	0	0	1	0	4	3	0	9	25.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	1	1	2	0	1	5	6.8%
Wanaque (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wayne (T)	0	0	0	0	3	0	9	1	1	14	8.2%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	1	0	0	1	2.3%
Passaic County (Total)	1	0	0	0	5	2	48	8	5	69	5.2%

Source: (Passaic County Office of Emergency Management 2020); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (NJGWS 2015); (Passaic County Department of Planning & Economic Development 2024); Passaic County 2024

Hazus assigned the average probability of each damage state category to the critical facilities in the County for the 500- and 2,500-year MRP events. In addition, Hazus estimates the time to restore critical facilities to fully functional use. Results are presented as a probability of being functional at specified time increments (days after the event). For example, Hazus might estimate that a facility has 5 percent chance of being fully functional on Day 3, and a 95 percent chance of being fully functional on Day 90. For percent probability of sustaining damage, the minimum and maximum damage estimated value for that facility type is presented.

Table 10-32 provides an analysis of the average percent probability of sustaining damage and the average percent functionality of various lifeline systems following a 500-year MRP earthquake. For most lifelines, the probability of sustaining no damage is very high, ranging from 96.4 percent to 99.8 percent. Slight damage is expected in a small percentage of cases, and moderate, extensive, and complete damage are rare. For instance, the transportation and communication systems have about 99 percent chance of sustaining no damage and less than a 0.1 percent chance of extensive or complete damage.

Table 10-32. Average Percent Probability of Sustaining Damage, 500-Year MRP

	Average Percent Probability of Sustaining Damage 500-Year MRP					Average Percent Functionality			
	None	Slight	Moderate	Extensive	Complete	Day 1	Day 7	Day 30	Day 90
Communications	99.1%	0.8%	0.1%	<0.1%	0.0%	99.9%	99.9%	99.9%	99.9%
Energy	97.6%	1.4%	0.8%	0.1%	0.0%	98.5%	99.8%	99.9%	99.9%
Food, Hydration, Shelter	96.4%	2.7%	0.8%	0.1%	0.0%	96.4%	99.0%	99.8%	99.9%
Hazardous Materials	96.9%	2.3%	0.7%	0.1%	0.0%	96.9%	99.1%	99.8%	99.9%
Health and Medical	98.9%	0.9%	0.2%	<0.1%	0.0%	98.8%	99.7%	99.9%	99.9%
Safety and Security	97.4%	2.0%	0.6%	0.1%	0.0%	97.3%	99.3%	99.9%	99.9%
Transportation	99.8%	0.2%	<0.1%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
Water Systems	98.3%	1.0%	0.6%	0.1%	0.0%	99.1%	99.9%	99.9%	99.9%

Source: Hazus v6.1; Passaic County 2024; (Passaic County Office of Emergency Management 2020); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (Passaic County Department of Planning & Economic Development 2024)

In terms of functionality, most lifelines are expected to recover quickly. By Day 1, functionality ranges from 96.4 percent to 100 percent, and by Day 7, it improves to between 99 percent and 100 percent. By Day 30 and Day 90, nearly all lifelines are expected to be fully functional, with percentages close to or at 100 percent.

Table 10-33 provides an analysis of the average percent probability of sustaining damage and the average percent functionality of various lifeline systems during a 2,500-year MRP earthquake. For most lifelines, the probability of sustaining no damage is high, though lower than in a 500-year event, ranging from 82.4 percent to 91.1 percent. Slight to moderate damage is more likely, with slight damage probabilities ranging from 6.3 percent to 13.9 percent and moderate damage probabilities from 2.2 percent to 7.0 percent. Extensive and complete damage remains rare but is slightly more probable than in the 500-year MRP event.

In terms of functionality, most lifelines are expected to recover significantly within the first week. By Day 1, functionality ranges from 77.5 percent to 91.0 percent, improving to between 91.3 percent and 97.3 percent by Day 7. By Day 30 and Day 90, nearly all lifelines are expected to be fully functional, with percentages close to or at 100 percent.

Table 10-33. Average Percent Probability of Sustaining Damage 2,500-Year MRP

	Average Percent Probability of Sustaining Damage 2,500-Year MRP					Average Percent Functionality			
	None	Slight	Moderate	Extensive	Complete	Day 1	Day 7	Day 30	Day 90
Communications	84.1%	10.2%	4.7%	0.8%	0.1%	84.1%	94.3%	99.0%	99.8%
Energy	79.9%	12.6%	6.2%	1.2%	0.1%	79.8%	92.4%	98.6%	99.8%
Food, Hydration, Shelter	77.6%	13.9%	7.0%	1.4%	0.1%	77.5%	91.3%	98.4%	99.8%
Hazardous Materials	80.4%	12.3%	6.0%	1.1%	0.1%	80.4%	92.6%	98.7%	99.8%
Health and Medical	91.1%	6.3%	2.2%	0.3%	0.0%	91.0%	97.3%	99.5%	99.9%
Safety and Security	82.4%	11.2%	5.3%	1.0%	0.1%	82.4%	93.4%	98.9%	99.5%
Transportation	83.1%	10.8%	5.0%	0.9%	0.1%	83.1%	93.8%	98.9%	99.8%
Water Systems	84.5%	9.6%	4.9%	1.0%	0.1%	85.1%	95.1%	99.0%	99.8%

Source: Hazus v6.1; Passaic County 2024; (Passaic County Office of Emergency Management 2020); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (Passaic County Department of Planning & Economic Development 2024)

Landslide and Subsidence/Sinkholes

Table 10-34 and Table 10-35 show that there are two critical facilities each in the landslide Class A and Class B hazard areas. No critical facilities are located in the carbonate rock hazard area.

A significant amount of infrastructure can be exposed to mass movements of geological material (USGS 2023):

- *Roads*—Landslides and sinkholes can block egress and ingress on roads, causing isolation for neighborhoods, traffic problems, and delays for public and private transportation. This can result in economic losses for businesses. Portions of Interstate I-80, US Route US-206, and State Routes, including NJ-15, NJ-94, NJ-183, and NJ-23 run the mine subsidence hazard area.
- *Bridges*—Landslides can significantly impact road bridges. Mass movements can knock out bridge abutments or significantly weaken the soil supporting them, making them hazardous for use.
- *Power Lines*—A landslide could trigger failure of the soil underneath towers that support power lines, causing them to collapse and ripping down the lines. Sinkholes can swallow utility lines and cause impacts on underground pipes. Power and communication failures due to landslides and sinkholes can create problems for vulnerable populations and businesses.
- *Rail Lines*—Landslides can block travel along rail lines, which are more difficult to detour than roads and highways. Many residents rely on public transport to get to work around the County and into New York City, and a landslide event could prevent travel to and from work.

Table 10-34. Number of Facilities in the Landslide Class A Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the Landslide Class A Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	1	0	0	0	0	0	1	5.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wanaque (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wayne (T)	0	0	0	0	0	0	0	0	0	0	0.0%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	0	1	0	1	2.3%
Passaic County (Total)	0	0	0	1	0	0	0	1	0	2	0.2%

Source: (Passaic County Office of Emergency Management 2020); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (NJGWS 2015); (Passaic County Department of Planning & Economic Development 2024); Passaic County 2024

Table 10-35. Number of Facilities in the Landslide Class B Hazard Area, by Lifeline Category

Jurisdiction	Number of Facilities in the Landslide Class B Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	1	0	0	1	0.6%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Totowa (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Wanaque (B)	0	0	0	0	0	0	0	1	0	1	2.0%
Wayne (T)	0	0	0	0	0	0	0	0	0	0	0.0%
West Milford (T)	0	0	0	0	0	0	0	0	0	0	0.0%
Woodland Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Passaic County (Total)	0	0	0	0	0	0	1	1	0	2	0.2%

Source: (Passaic County Office of Emergency Management 2020); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (NJGWS 2015); (Passaic County Department of Planning & Economic Development 2024); Passaic County 2024

10.2.4 Economy

Geological hazards can cause direct and indirect impacts on the economy. Direct costs include the actual damage sustained by buildings, property, and infrastructure due to ground failure, which also threatens transportation corridors, fuel and energy conduits, and communication lines (USGS 2020). Indirect costs, such as clean-up costs, business interruption, damage to inventory, relocation costs, wage loss, and rental loss due to the repair/replacement of buildings loss of tax revenues, reduced property values, and loss of productivity may also occur, but are difficult to measure. Secondary effects, such as blocking access to roads, can isolate residents and businesses and delay commercial, public, and private transportation.

Table 10-36 outlines the estimated debris generated in Passaic County for the 500- and 2,500-year MRP events. For the 500-year MRP event, the total debris includes 2,989 tons of brick/wood and 449 tons of concrete/steel. In the 2,500-year MRP event, these amounts significantly increase to 27,476 tons of brick/wood and 9,718 tons of concrete/steel.

Table 10-36. 500-Year and 2,500-Year MRP Earthquake Event Debris

Jurisdiction	Debris Generated (tons)			
	500-Year MRP		2,500-Year MRP	
	Brick/Wood	Concrete/Steel	Brick/Wood	Concrete/Steel
Bloomingdale (B)	19	2	228	47
Clifton (C)	568	99	4,934	2,184
Haledon (B)	34	4	332	78
Hawthorne (B)	148	24	1,307	488
Little Falls (T)	116	18	1,059	397
North Haledon (B)	25	2	365	74
Passaic (C)	509	72	4,164	1,344
Paterson (C)	577	90	5,629	2,342
Pompton Lakes (B)	38	4	396	83
Prospect Park (B)	27	4	220	67
Ringwood (B)	30	3	417	72
Totowa (B)	65	12	663	413
Wanaque (B)	142	22	1,043	300
Wayne (T)	603	85	5,457	1,583
West Milford (T)	60	5	875	164
Woodland Park (B)	29	3	388	82
Passaic County (Total)	2,989	449	27,476	9,718

Source: Hazus v6.1, Microsoft 2019; (NJOIT 2024)

10.2.5 Natural, Historic and Cultural Resources

Natural

Earthquakes can cause damage to the surface of the earth in various forms depending on the magnitude and distribution of the event. Surface faulting is one of the major seismic components to earthquakes that can create

wide ruptures in the ground. Ruptures can have a direct impact on the natural environment because they can disconnect habitats for miles, isolating animal species and tearing apart plant roots (USGS n.d.).

Soil liquefaction can impact soil pores and retention of water resources. The greater the seismic activity and liquefaction properties of the soil, the more likely drainage of groundwater can occur, which depletes groundwater resources. In areas where there is higher pressure of groundwater retention, the pores can build up more pressure and make soil behave more like a fluid rather than a solid, increasing risk of localized flooding and deposition or accumulation of silt (USGS n.d.).

Landslide-susceptible steep slopes within the Highlands Region play an important ecological, recreational, scenic, and functional role. They provide specialized habitats for rare plant and animal species. Disturbance of areas containing steep slopes can trigger erosion and sedimentation, resulting in the loss of topsoil. The silting of wetlands, lakes, ponds, and streams damages and degrades wetland and aquatic habitats that are found throughout the region and receive the state's highest water quality protections. Steep slope disturbance can also result in the loss of habitat quality, degradation of surface water quality, silting of wetlands, and alteration of drainage patterns (NJ Highlands Council 2012).

Historic

The primary concern for historic resources in the event of an earthquake is the potential damage from ground shaking and soil liquefaction. Passaic County's historic landmarks and older buildings, many of which may not be built to modern seismic standards, are particularly vulnerable to earthquake damage.

Landslide impacts on historic resources within the County are highest in areas near hillsides that are characterized by unstable soil and erosion. Historic landmarks in these areas are highly susceptible to landslide occurrences.

Cultural

The primary concern for cultural resources in the event of an earthquake is the potential damage from ground shaking and soil liquefaction. The county's cultural landmarks and older buildings, many of which may not be built to modern seismic standards, are particularly vulnerable to earthquake damage.

Landslide impacts on cultural resources within the County are highest in areas near hillsides that are characterized by unstable soil and erosion. Cultural landmarks in these areas are highly susceptible to landslide occurrences.

10.3 FUTURE CHANGES THAT MAY AFFECT RISK

10.3.1 Potential or Planned Development

Areas targeted for future growth and development have been identified across the County. Development built in areas with softer NEHRP soil classes, liquefaction, and landslide-susceptible areas may experience shifting or cracking in the foundation during geological hazard events. However, current building codes require seismic provisions that should render new construction less vulnerable to seismic impacts than older, existing construction that may have been built to lower construction standards.

Any areas of growth could be impacted by geological hazards if located within the identified hazard areas or downslope of one of these areas. In general, development of slopes is not recommended due to the increased risk of erosion, stormwater runoff and flooding potential, and many municipalities already have local ordinances

regulating development in steep or sloped areas. The additional runoff results in sedimentation of downslope surface waters, which damages habitat and has the potential to damage property. The Highlands Council has template ordinances available to define Steep Slope Protection Areas and protect from their disturbance. In addition, there are recommendations for site design for permitted disturbances to minimize impacts.

Recently, sinkholes have been correlated to land use practices, especially from groundwater pumping and from construction and development practices. Sinkholes may form when the land surface is changed, such as when industrial and runoff-storage ponds are created. The weight of new material can trigger an underground collapse of supporting material, causing a sinkhole. Additionally, the overburden sediments that cover buried cavities in the aquifer systems are balanced by groundwater fluid pressure. Groundwater helps keep the surface soil in place. Pumping groundwater for urban water supply and irrigation can produce new sinkholes. If pumping results in a lowering of groundwater levels, then underground structural failure, sinkholes may occur as well (USGS 2018). Geological make-up should be considered for future development; certain soils, such as limestone, are more prone to sinkholes.

10.3.2 Projected Changes in Population

An increase in population density can impact the number of persons exposed to geological hazard areas. Changes in density can create issues for local residents during evacuation of a landslide or ground failure event and affect commuters who travel into and out of the County for work, particularly during a geologic event (such as a sinkhole) that breaches major transportation corridors, which are also major commuter roads.

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

10.3.3 Climate Change

The County is expected to experience an increase in average annual temperatures and precipitation due to climate change. Severe storms and heavy rainfall events may elevate the likelihood of landslides in steep sloped areas, as precipitation may exceed the soil's absorption capacity. These changes depend on the development of steep slopes and other climate trends, such as seasonal precipitation and drought, which affect vegetation growth.

Higher temperatures and potentially more intense, less frequent summer rainfall may alter water resource availability and increase the frequency of droughts. Drought periods can intensify sinkhole activity in some karst areas, potentially increasing the number of sinkholes. Changes to the water balance, including over-withdrawal of groundwater, diverting surface water, creating artificial ponds, and drilling new wells, can accelerate bedrock degradation and sinkhole formation.

The impacts of climate change on earthquakes are not well understood, making it difficult to determine changes in the County's vulnerability. However, climate change may magnify secondary impacts of earthquakes. Consequently, the County's assets located on saturated soils and at the base of steep slopes are at higher risk of landslides and mudslides due to seismic activity.

11. SEVERE WEATHER

11.1 HAZARD PROFILE

11.1.1 Hazard Description

For this HMP update and as deemed appropriated by the Passaic County Planning Partnership, the severe weather hazard includes thunderstorms and lightning, high winds, hailstorms, tornadoes, and hurricanes.

Thunderstorms and Lightning

A thunderstorm is a local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder (NWS 2021). A thunderstorm forms from a combination of moisture, rapidly rising warm air, and a force capable of lifting air, such as a warm and cold front, a sea breeze, or a mountain. Typical thunderstorms are 15 miles in diameter and last an average of 30 minutes.

Although thunderstorms generally affect a small area, they have the potential to become dangerous due to their ability to generate tornadoes, hailstorms, strong winds, and flash flooding. The National Weather Service (NWS) considers a thunderstorm severe if it produces wind gusts of at least 58 miles per hour (mph), hail of at least one-inch diameter, or tornadoes. An estimated 100,000 thunderstorms occur each year in the United States, with approximately 10 percent of them classified as severe (NWS 2016).

Lightning is a flash of electrical energy produced by a thunderstorm. The resulting clap of thunder is the result of a shock wave created by the rapid heating and cooling of the air in the lightning channel. Lightning can damage homes and injure people. In the United States, an average of 300 people are injured and 80 people are killed by lightning each year. Lightning can occur anywhere there is a thunderstorm and can travel cloud-to-air, cloud-to-cloud, intra-cloud, and cloud-to-ground (NOAA 2014).

High Winds

Wind is movement of air caused by uneven heating of the earth's surface. Wind occurs at all scales, from local breezes lasting a few minutes to global winds resulting from solar heating of the earth. High winds are often associated with other severe weather events such as thunderstorms, tornadoes, hurricanes, and tropical storms (NWS 2012). This hazard profile focuses on the following three types of high wind events (NOAA 2023):

- **Straight-line wind** is a term used to define any wind that is not associated with rotation and is used mainly to differentiate from tornadic winds.
- A **microburst** is a small, concentrated downburst that produces an outward burst of strong winds at or near the surface. Microbursts are typically less than 2.5 miles across and last 5 to 10 minutes. Maximum windspeeds sometimes exceed 100 mph. There are two kinds of microbursts: wet and dry. A wet microburst is accompanied by heavy precipitation at the surface. Dry microbursts, common in places like the high plains and the intermountain west, occur with little or no precipitation reaching the ground.
- A **derecho** is a widespread, long-lived windstorm that is associated with a band of rapidly moving showers or thunderstorms. A derecho is defined as an event with a wind damage swath extending more than 240 miles that includes wind gusts of at least 58 mph or greater along most of its length. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters.

Hailstorms

Hail forms inside a thunderstorm where there are strong updrafts of warm air and downdrafts of cold water. If a water droplet is picked up by the updrafts, it can be carried well above the freezing level and become frozen. The frozen droplet falls into warmer air toward the bottom of the thunderstorm but might be carried by another updraft back into the cold air to re-freeze. With each trip above and below the freezing level, the frozen droplet adds another layer of ice. The droplet with many layers of ice falls to the ground as hail (NSSL 2021).

Tornadoes

A tornado is a violently rotating column of air that extends from a thunderstorm to the ground with an average forward speed of 30 mph. Tornadoes typically develop from either a severe thunderstorm or hurricane as cool air rapidly overrides a layer of warm air. Tornadoes can occur at any time of the year, with peak seasons at different times for different states (NWS 2010).

Hurricanes

A hurricane is a tropical cyclone that reaches wind speed of at least 74 mph. A tropical cyclone is a rotating, organized system of clouds and thunderstorms that originates over tropical or sub-tropical waters and has a closed low-level circulation. Tropical depressions, tropical storms, and hurricanes are all considered tropical cyclones. These storms are accompanied by heavy rain and strong winds. Almost all tropical storms and hurricanes in the Atlantic Basin form between June and November, officially referred to as hurricane season. August and September are peak months for hurricane development in the North Atlantic Basin (NHC 2020).

Tropical cyclones strengthen when water evaporated from the ocean is released as the saturated air rises, resulting in condensation of water vapor. At any height in the atmosphere, the center of a tropical cyclone will be warmer than its surroundings, which is called a “warm core” storm system (NOAA 2023).

11.1.2 Location

All of Passaic County is exposed to all of the types of severe weather addressed in this HMP.

11.1.3 Extent

Thunderstorms and Lightning

As depicted in Figure 11-1, the NWS has five categories for thunderstorm risk: marginal, slight, enhanced, moderate, and high. The probabilistic forecast expresses the best estimate of a severe weather event occurring within 25 miles of a point (NWS 2019). The NWS issues the following statements, watches, and warnings for thunderstorms (NWS 2023):

- **Special Weather Statement**—Issued for strong storms that are below severe levels but may have impacts. It is usually reserved for the threat of wind gust of 40 to 57 mph or hail between a half and one inch in diameter.
- **Severe Thunderstorm Watch**—Issued when severe thunderstorms are possible in or near watch areas.
- **Severe Thunderstorm Warning**—Issued when a severe storm is imminent or occurring that is either detected by weather radar or reported by storm spotters. A severe thunderstorm is one that produces winds 58 mph or stronger or hail that is at least one inch in diameter. A warning means to take shelter.

Figure 11-1. Thunderstorm Risk



Source: NWS 2019

Cloud-to-ground and intra-cloud lightning flashes are detected and mapped in real-time by two networks: National Lightning Detection Network (NLDN) and the Earth Networks Total Lightning Network. These systems work by detecting radio atmospheric signals emitted by fast electric currents in lightning channels (NOAA n.d.).

Hailstorms

The severity of hail is measured by duration, hail size, and geographic extent. Hail can exhibit a variety of sizes, often estimated by comparing the hail to a known object (Table 11-37). Most hailstorms are made up of a mix of different sizes, and only the very largest hail stones pose serious risk to people caught in the open (State of New Jersey 2017).

Table 11-37. Hail Size

Description	Diameter (in inches)	Description	Diameter (in inches)
Pea	0.25	**Golf ball**	1.75
Marble or Mothball	0.50	**Tennis ball**	2.5
Penny or Dime	0.75	**Baseball**	2.75
Nickel	0.88	**Tea cup**	3.00
Quarter	1.00	**Softball**	4.00
Ping Pong Ball	1.25	**Grapefruit**	4.50

Source: (NOAA 2023)

High Winds

Table 11-38 provides the descriptions of wind events and their associated sustained speed used by the NWS. Another scale used to classify wind conditions is the Beaufort wind scale, which is provided in Appendix H (Supplementary Data).

Table 11-38. NWS Wind Descriptions

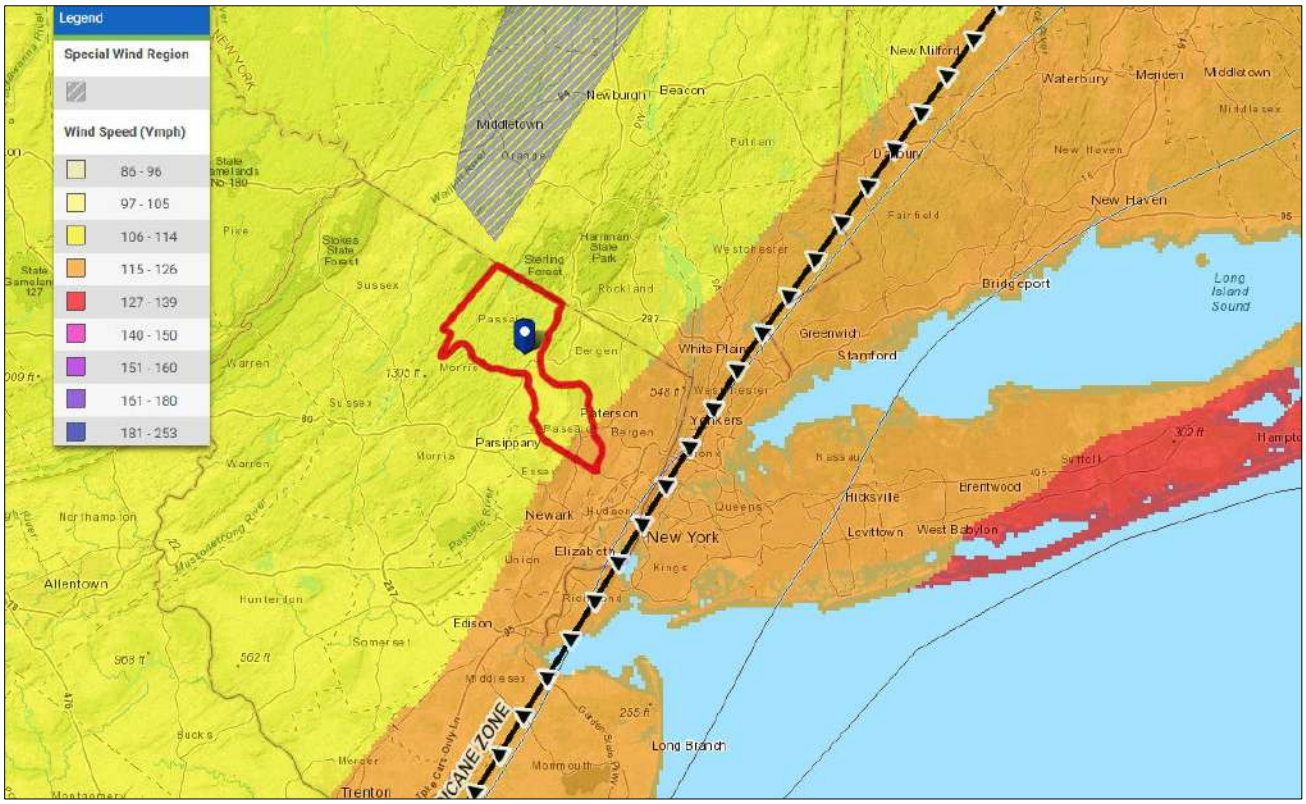
Descriptive Term	Sustained Wind Speed (mph)
Strong, dangerous, or damaging	≥40
Very Windy	30 to 40
Windy	20 to 30
Breezy, brisk, or blustery	15 to 25
None	5 to 15 or 10 to 20
Light or light and variable wind	0 to 5

Source: NWS n.d.

The American Society of Civil Engineers (ASCE) identifies wind speeds to use in building design (ASCE 2024):

- For Risk Category II structures, which include most residential buildings, the ASCE standard calls for a design that can withstand the 3-second gust wind speed that has a 7 percent chance of occurring in a 50-year period. In Passaic County, that speed is 114 mph. Figure 11-2 shows the mapping of ASCE Risk Category II wind speeds in the County and surrounding areas.
- For Risk Category IV structures, defined as buildings that are critical for emergencies and defense (such as shelters and other critical facilities), the ASCE design standard is the 3-second gust wind speed that has a 1.6 percent chance of occurring in a 50-year period. In Passaic County this is 126 mph.

Figure 11-2. ASCE Design Winds for Risk Category II Structures



Source: (ASCE 2024)

The NWS issues the following high wind alerts when wind speeds can pose a hazard or are life threatening (NWS 2012):

- **Wind Advisories** are issues when sustained winds of 30 to 39 mph are forecast for one hour or longer, or wind gusts of 46 to 57 mph for any duration.
- **High Wind Watches** are issued when there is the possibility that High Wind Warning Criteria may be met at longer ranges (24 to 48 hours out).
- **High Wind Warnings** are issued when sustained wind speeds of 40 mph or greater lasting for one hour or longer or for winds of 58 mph or greater for any duration or widespread damage are possible.

Tornadoes

The magnitude of a tornado is categorized using the Enhanced Fujita (EF) Tornado Intensity Scale. This scale determines tornado ratings by comparing wind speed and actual damage. Figure 11-3 describes the relationship between EF ratings, wind speed, and expected tornado damage.

Figure 11-3. EF Scale Rating Descriptions

EF Rating	Wind Speeds	Expected Damage	
EF-0	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.	
EF-1	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.	
EF-2	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.	
EF-3	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.	
EF-4	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.	
EF-5	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.	

Source: NWS n.d.

Tornado alerts are issued by the local NWS office. A tornado watch is released when tornadoes are possible in an area. A tornado warning means a tornado has been sighted or indicated by weather radar. The current average lead time for tornado warnings is 13 minutes. Occasionally, tornadoes develop so rapidly, that little, if any, advance warning is possible (NOAA 2011).

Hurricanes

Numerical Scale

Hurricane magnitude is measured using the Saffir-Simpson Hurricane Scale. The Saffir-Simpson Hurricane Wind Scale rates storms from Categories 1 to 5 (from least to most severe) based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous and require preventative measures (NOAA 2023). Table 11-39 presents this scale, which is used to estimate the potential property damage and flooding expected when a hurricane makes landfall.

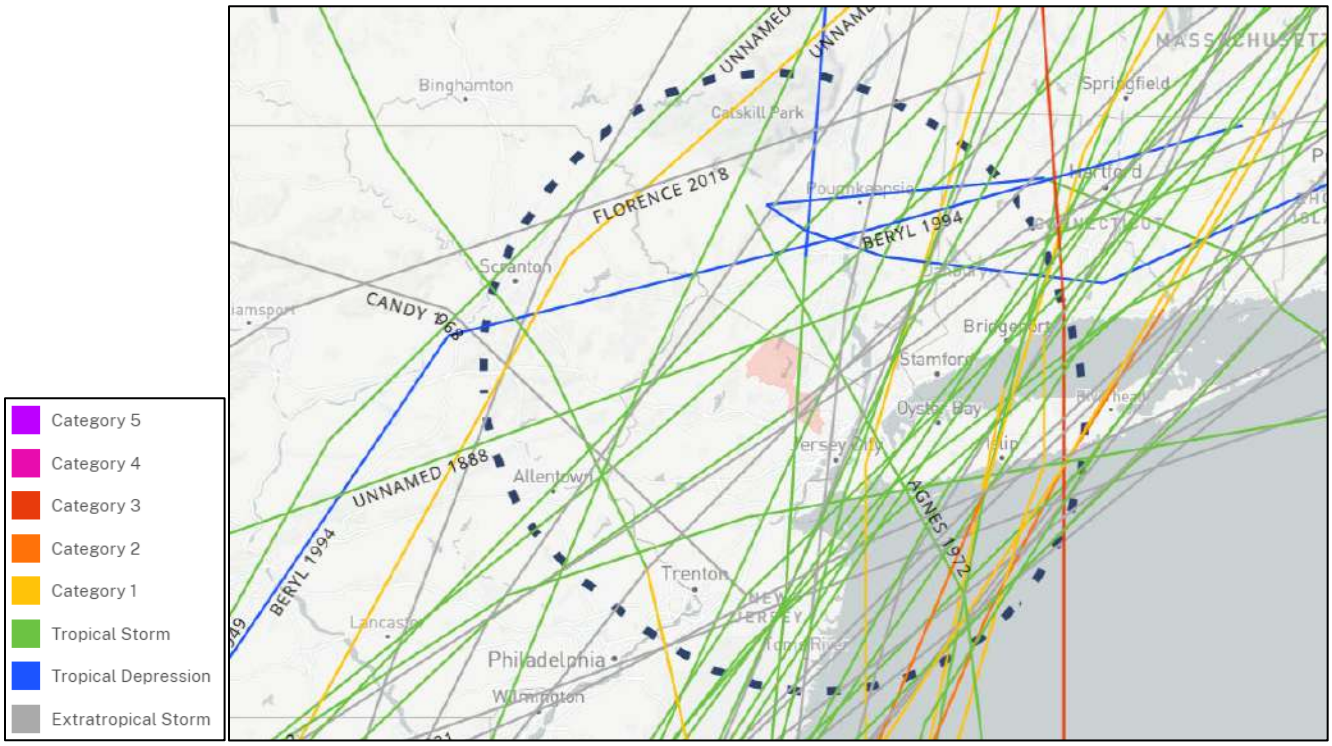
Table 11-39. The Saffir-Simpson Hurricane Scale

Category	Wind Speed (mph)	Expected Damage
1	74 to 95	Very dangerous winds will produce some damage: Homes with well-constructed frames could have damage to roof, shingles, vinyl siding, and gutters. Large tree branches will snap and shallow-rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96 to 110	Extremely dangerous winds will cause extensive damage: Homes with well-constructed frames could sustain major roof and siding damage. Many shallow-rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111 to 129	Devastating damage will occur: Homes with well-built frames may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130 to 156	Catastrophic damage will occur: Homes with well-built frames can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	>157	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: NOAA 2023

Figure 11-4 shows the categories of tropical cyclone tracks for events that tracked within 60 nautical miles of Passaic County (an approximate distance from the center of rotation where significant impacts could be felt) between 1861 and 2023.

Figure 11-4. Historical Tropical Storm and Hurricane Tracks 1861 to 2023



Source: NOAA 2023
Note: Passaic County is shaded in red.

Hurricane Alerts

NWS issues hurricane and tropical storm watches and warnings. These watches and warnings are issued or will remain in effect after a tropical cyclone becomes post-tropical, when such a storm poses a significant threat to life and property. The NWS allows the National Hurricane Center (NHC) to issue advisories during the post-tropical stage. The following are the definitions of the watches and warnings (NOAA 2023):

- A **Hurricane Warning** is issued when sustained winds of 74 mph or higher are expected somewhere within the specified area in association with a tropical, subtropical, or post-tropical cyclone. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the warning is issued 36 hours in advance of the anticipated onset of tropical storm-force winds. The warning can remain in effect when dangerously high water or combination of dangerously high water and waves continue, even though winds may be less than hurricane force.
- A **Hurricane Watch** is issued when sustained winds of 74 mph or higher are possible within the specified area in association with a tropical, subtropical, or post-tropical cyclone. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours prior to the anticipated onset of tropical storm-force winds.
- A **Tropical Storm Warning** is issued when sustained winds of 39 to 73 mph are expected somewhere within the specified area within 36 hours in association with a tropical, subtropical, or post-tropical storm.
- A **Tropical Storm Watch** is issued when sustained winds of 39 to 73 mph are possible within the specified area within 48 hours in association with a tropical, sub-tropical, or post-tropical storm.

Mean Return Period for Hurricane Winds

Hurricane mean return periods (MRPs) are the frequency at which a certain intensity of hurricane can be expected within a given distance of a given location. For example, an MRP of 20 years for a major hurricane means that on average during the previous 100 years, a Category 3 or greater hurricane passed within 58 miles of a specific location approximately 5 times. According to the NHC, the return period of hurricanes for Passaic County was not calculated. However, the return period for surrounding counties is 18 to 19 years for a hurricane (greater than 64 mph winds) and 74 to 76 years for a major hurricane (greater than 110 mph winds) (NHC 2020).

Figure 11-5 and Figure 11-6 show the estimated maximum three-second gust wind speeds that can be anticipated in the study area associated with the 100- and 500-year MRP hurricane wind events. These peak wind speed projections were generated using Hazus. The estimated hurricane track used for the 100- and 500-year event is also shown. For the 100-year MRP event, the maximum three-second gust wind speeds for Passaic County range from tropical storm to Category 1 hurricane speeds. For the 500-year MRP event, the maximum three-second gust wind speeds for Passaic County range from Category 1 to Category 2 hurricane speeds.

11.1.4 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has been included in 16 major disaster (DR) or emergency (EM) declarations for severe weather-related events (FEMA 2023). Table 7-4 lists these declarations.

Table 11-40. FEMA Declarations for Hazard Events in Passaic County (1954 to 2023)

Event Date	Declaration Date	Declaration Number	Description
August 20, 1955	August 20, 1955	DR-41-NJ	Hurricane & Floods
September 16-18, 1999	September 17, 1999	EM-3148-NJ	Hurricane Floyd
September 16-18, 1999	September 18, 1999	DR-1295-NJ	Hurricane Floyd
April 1-3, 2005	April 19, 2005	DR-1588-NJ	Severe Storms and Flooding
August 29-October 1, 2005	September 19, 2005	EM-3257-NJ	Hurricane Katrina Evacuation
April 14-20, 2007	April 26, 2007	DR-1694-NJ	Severe Storms, Inland and Coastal Flooding
March 12-April 15, 2010	April 2, 2010	DR-1897-NJ	Severe Storms and Flooding
August 26-September 5, 2011	August 27, 2011	EM-3332-NJ	Hurricane Irene
August 27-September 5, 2011	August 31, 2011	DR-4021-NJ	Hurricane Irene
September 28-October 6, 2011	October 14, 2011	DR-4039-NJ	Remnants of Tropical Storm Lee
October 29-30, 2011	November 30, 2011	DR-4048-NJ	Severe Storm
October 26-November 8, 2012	October 28, 2012	EM-3354-NJ	Hurricane Sandy
October 26-November 8, 2012	October 30, 2012	DR-4086-NJ	Hurricane Sandy
September 1-3, 2021	September 2, 2021	EM-3573-NJ	Hurricane Ida
September 1-3, 2021	September 5, 2021	DR-4614-NJ	Hurricane Ida

Source: FEMA 2024

Figure 11-5. Wind Speeds for the 100-Year MRP Event

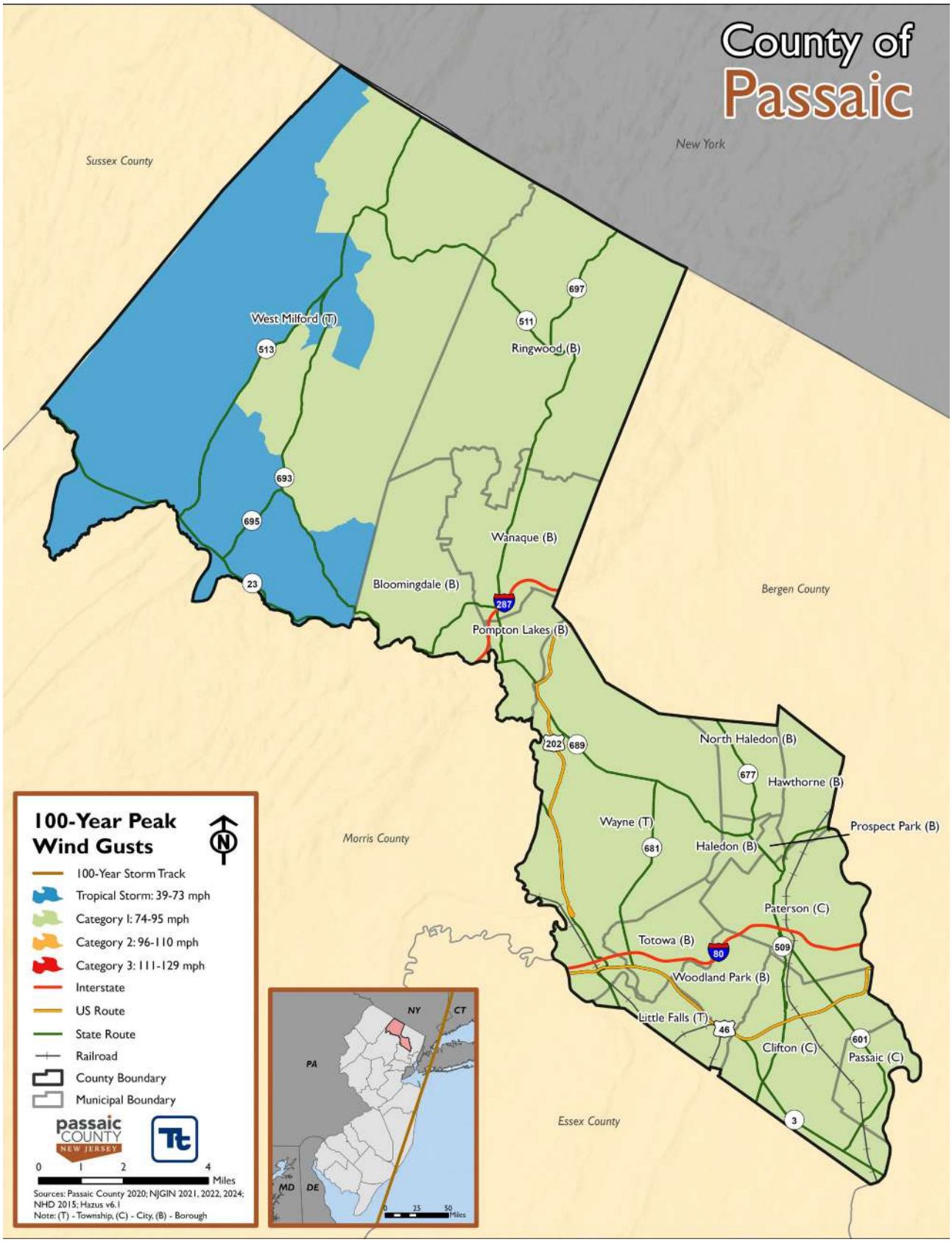
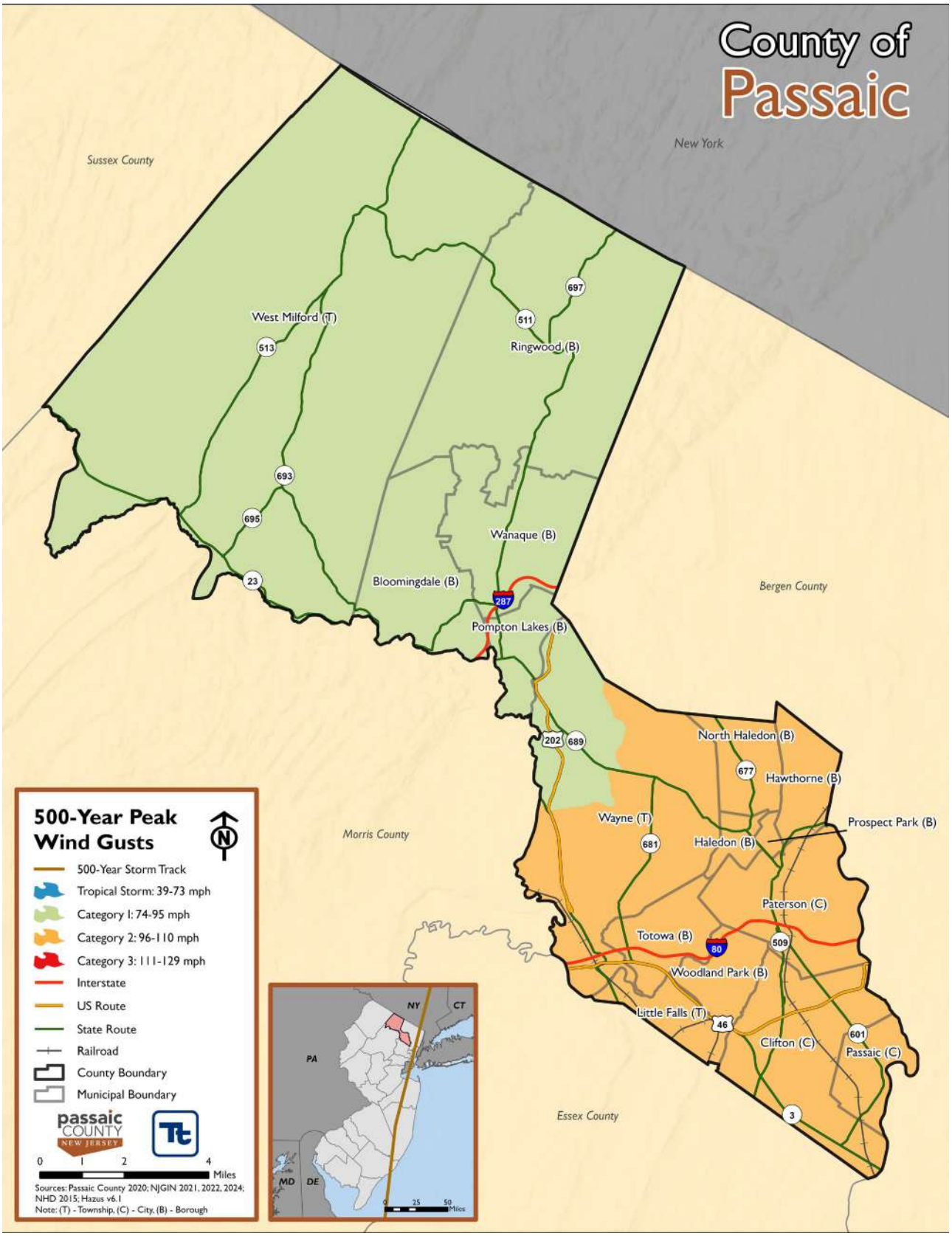


Figure 11-6. Wind Speeds for the 500-Year MRP Event



USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Between 2019 and 2023, Passaic County was included two USDA severe weather-related agricultural disaster declarations (USDA 2024). These declarations are summarized in Table 7-5.

Table 11-41. USDA Declarations for Severe Weather Events in Passaic County (2019 to 2023)

Event Date	USDA Declaration Number	Description
August 3, 2020	S4892	High Winds and Heavy Rain from Hurricane Isaias
August 21, 2021	S5092	Excessive Rain

Source: USDA 2024

Previous Events

Known severe weather events that impacted Passaic County between August 2019 and December 2023 are listed in Table 11-42. For events prior to 2019, refer to the 2019 Passaic County HMP.

Table 11-42. Severe Storms Events in Passaic County (August 2019 to December 2023)

Event Date	Event Type	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
November 1, 2019	Strong Wind	N/A	N/A	Western Passaic County	Strong winds occurred behind low pressure and strong cold front. In the town of West Bloomingdale, a 54 mph wind gust was recorded
April 13, 2020	High Wind	N/A	N/A	Eastern Passaic County	A tree down due to high winds brought down wires on Central Avenue in the Town of Hawthorne. Approximately $50,000 in property damage was reported in Passaic County.
April 21, 2020	Hail	N/A	N/A	Clifton	Strong to severe thunderstorms in northeastern New Jersey brought penny-sized hail.
August 4, 2020	Tropical Storm	N/A	N/A	County-wide	Category 1 Hurricane Isaias weakened to a tropical storm by the time it reached the New York region. The highest sustained wind speeds across northeastern New Jersey ranged from 35 to 50 mph. Gusts were between 60 and 70 mph, and rainfall was between 0.5 and 4 inches.
August 25, 2020	Thunderstorm Wind	N/A	N/A	Upper Greenwood Lake	Severe thunderstorms across northern New Jersey downed multiple trees in the Upper Greenwood Lake area near Lake Shore Drive and Riverside Road. $3,000 in property damage was reported in Passaic County.

Event Date	Event Type	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
August 27, 2020	Thunderstorm Wind	N/A	N/A	Haledon	Severe thunderstorm across northern New Jersey downed trees and wires on E 22nd Street. $3,000 in property damage was reported in Passaic County.
December 25, 2020	High Wind	N/A	N/A	Eastern Passaic County	High winds caused a partial roof collapse on Lafayette Avenue in Hawthorne.
July 6, 2021	Thunderstorm Wind	N/A	N/A	Packanack Lake, Prospect Park, Clifton	Severe thunderstorms crossed northeastern New Jersey. In Packanack Lake the public reported trees down and garbage cans littering the street. $3,000 in property damage was reported in Packanack Lake. In Prospect Park a fallen tree on house and $11,000 in property damage was reported. In Clifton a fallen tree on a house and $11,000 in property damage was reported.
July 6, 2021	Lightning	N/A	N/A	South Paterson	Severe thunderstorms crossed northeastern New Jersey. Lightning damage to home at 42 Bloomfield Avenue and $6,000 in property damage was reported.
July 12, 2021	Thunderstorm Wind	N/A	N/A	Pinecrest Lake	A thunderstorm had evidence of rotation via radar signatures across northeastern New Jersey, mainly Passaic County. Downed trees and powerlines and $5,000 in property damage were reported.
August 11-12, 2021	Thunderstorm Wind	N/A	N/A	South Paterson, Midland Park	Severe thunderstorms crossed northeastern New Jersey. County fair tents in Garrett Mountain were damaged and $3,000 in property damage was reported.
September 2-5, 2021	Hurricane	DR-4614-NJ EM-3573-NJ	Yes	County-wide	Extremely heavy rainfall associated with the remnants of Hurricane Ida ranged from 5 to 8 inches. Eight people died as a result of the flash flooding. Canal Street in Passaic was covered with several feet of water.
November 13, 2021	Hail	N/A	N/A	Haskell	Severe thunderstorms crossed northeastern New Jersey. Hail one inch in diameter was reported.
May 22, 2022	Thunderstorm Wind	N/A	N/A	Athenia	Severe thunderstorms in northeastern New Jersey brought damaging wind gusts. A large oak tree was uprooted and $1,500 in property damage was reported.
April 22, 2023	Hail	N/A	N/A	Pinecrest Lake	Severe thunderstorms crossed northeastern New Jersey. Quarter sized hail was observed in West Milford.
July 14, 2023	Thunderstorm Wind	N/A	N/A	Charlotteburg	Multiple rounds of thunderstorms moved through northeastern New Jersey producing damaging wind gusts. Downed pole and wires were reported on NJ 23 northbound south of CR 695/Echo Lake Road.

Event Date	Event Type	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
September 9, 2023	Thunderstorm Wind	N/A	N/A	Prospect Park, Great Notch (Little Falls)	Severe storms produced damaging winds over northeast New Jersey.

Source: NOAA NCEI 2024; FEMA 2023

11.1.5 Probability of Future Occurrences

Probability Based on Previous Occurrences

Information on previous severe weather occurrences in the County was used to calculate the probability of future occurrence of such events, as summarized in Table 9-5. Based on historical records and input from the Steering Committee, the probability of occurrence for severe weather in the County is considered ”frequent.”

Table 11-43. Probability of Future Severe Weather Events in Passaic County

Hazard Type	Number of Occurrences Between 1996 and 2023	Percent Chance of Occurring in Any Given Year
Hail	29	100%
High Wind	40	100%
Hurricane[a]	5	19%
Lightning	15	58%
Strong Wind	10	38%
Thunderstorm Wind	118	100%
Tornado	1	4%
Total	218	100%

Source: NOAA NCEI 2024

a. Hurricane events include tropical storms.

Effect of Climate Change on Future Probability

A warmer atmosphere means storms have the potential to be more intense and occur more often. In New Jersey, extreme storms typically include spring and summer thunderstorms, tropical storms, and on rare occasions hurricanes. Most of these events occur in the warmer months between April and October. Over the last 50 years in New Jersey, storms that resulted in extreme rain increased by 71, percent which is a faster rate than anywhere else in the United States (NJDEP 2020). By 2050, annual precipitation in New Jersey could increase by 4 to 11 percent (FERC 2020). By the end of this century, heavy precipitation events are projected to occur two to five times more often and with more intensity than in the last century.

11.1.6 Cascading Impacts on Other Hazards

Rainfall associated with severe weather may exacerbate flooding and dam failures. Strong winds can be destructive to the functionality of utilities by breaching power lines and disconnecting the utility systems, as well as result in falling trees and branches. Fallen vegetation also reduces the soil stability of steep slopes, which can lead to an increased risk of landslides.

11.2 VULNERABILITY AND IMPACT ASSESSMENT

The entire County and all inventoried assets have been identified as exposed to severe storms. All of the weather types included in this hazard were evaluated at a qualitative level only, except for high winds/tropical cyclone. A quantitative assessment was completed to assess wind-related damage from tropical cyclones and other storms, using a probabilistic analysis within the Hazus hurricane model for the 100- and 500-year MRP hurricane wind events.

11.2.1 Life, Health, and Safety

Overall Population

The entire population of Passaic County (461,860) is exposed to severe storm events. Potential impacts include the following:

- Downed trees, damaged buildings, and debris carried by high winds can lead to injury or loss of life.
- Lightning can be responsible for deaths, injuries, and property damage.
- People located outdoors (i.e., recreational activities and farming) are vulnerable to hailstorms, thunderstorms, and tornadoes because there is little to no warning, and shelter might not be available.
- Construction workers who work in open spaces, at heights, with electrical equipment and metals, in excavation areas and trenches, or with hazardous materials face higher risks related to wet weather and wind (State of New Jersey 2017).

Residents may be displaced or require short-term sheltering due to severe weather events. As shown in Table 11-44, Hazus estimates that there will be five displaced households and five persons seeking short-term shelter from the 100-year MRP hurricane wind event. Further, Hazus estimates that there will be 657 households displaced and 795 persons seeking short-term sheltering caused by the 500-year MRP hurricane wind event

Socially Vulnerable Population

Without a quantitative assessment of potential impacts of severe weather on socially vulnerable populations, the Planning Partners can best assess mitigation options through an understanding of the general numbers and locations of such populations across Passaic County. Section 3.6.3 provides detailed data on socially vulnerable populations within the planning area. Table 6-5 summarizes highlights of this information. For planning purposes, it is reasonable to assume that percentages and distribution of socially vulnerable populations affected by severe weather will be similar to the countywide numbers.

Table 11-44. Displaced Households and Persons Seeking Shelter Due to the 100- and 500-Year MRP Wind

Jurisdiction	100-Year MRP Hurricane		500-Year MRP Hurricane	
	Displaced Households	Persons Seeking Short-Term Sheltering	Displaced Households	Persons Seeking Short-Term Sheltering
Bloomingdale (B)	0	0	2	1
Clifton (C)	5	5	167	171
Haledon (B)	0	0	10	12
Hawthorne (B)	0	0	28	20
Little Falls (T)	0	0	11	5
North Haledon (B)	0	0	6	3
Passaic (C)	0	0	117	189
Paterson (C)	0	0	234	335
Pompton Lakes (B)	0	0	5	3
Prospect Park (B)	0	0	8	13
Ringwood (B)	0	0	1	1
Totowa (B)	0	0	13	10
Wanaque (B)	0	0	3	2
Wayne (T)	0	0	33	17
West Milford (T)	0	0	1	0
Woodland Park (B)	0	0	18	13
Passaic County (Total)	5	5	657	795

Source: US Census Bureau 2022; Hazus v6.1

Table 11-45. Distribution of Socially Vulnerable Populations by Municipality

Category	Sussex County Total		Municipality Highest in Category		Municipality Lowest in Category	
	Number	Percent	Number	Percent	Number	Percent
			Paterson	North Haledon	Prospect Park	Passaic
Population Over 65	**78,440**	**15.10%**	**18,141**	**24.6%**	**625**	**9.0%**
			Paterson	Passaic, Prospect Park	Bloomingdale	Bloomingdale
Population Under 5	**33,502**	**6.40%**	**12,442**	**8.3%**	**247**	**3.2%**
			Paterson	Passaic	Bloomingdale, Ringwood	Ringwood
Non-English-Speaking Population	**68,953**	**13.30%**	**34,885**	**22.4%**	**104**	**0.9%**
Population With			Paterson	Prospect Park	Bloomingdale	Pompton Lakes
Disability	**46,707**	**9.00%**	**12,756**	**14.3%**	**588**	**7.2%**
Population Below			Paterson	Paterson	Ringwood	Ringwood
Poverty Level	**68,995**	**13.30%**	**37,143**	**23.5%**	**262**	**2.2%**
Households Below			Paterson	Paterson	North Haledon	Ringwood
ALICE Threshold	**62,752**	**35%**	**33,284**	**67%**	**745**	**22%**

Particular impacts of this hazard on socially vulnerable populations are as follows:

- Individuals who rent their homes often lack control over necessary repairs, which can exacerbate the impact of hazards.
- Some residents depend on medical equipment that requires electricity, making power outages a serious health risk.
- Those without private transportation may face isolation if public transportation services are disrupted.
- Hourly workers may suffer financial losses if they are unable to work due to hazardous conditions, leading to cascading effects on their households, such as difficulties in affording rent or groceries.
- Economically disadvantaged populations may be more vulnerable because they lack the financial resources needed to evacuate.
- The population over age 65 is also more vulnerable because they are more likely to need medical attention that may not be available due to isolation during a severe weather event, and they may have more difficulty evacuating.

11.2.2 General Building Stock

All buildings are exposed to severe weather events. Potential impacts include the following

- Lightning could be a threat to the building stock if it starts a fire. Over 22,000 fires caused by lightning occurred annually throughout the U.S. between 2007 and 2011, which was valued at approximately $450 million of damage per year (National Fire Protection Association 2013).
- While hailstorms are not frequently known to cause major injuries or damage in the State of New Jersey, an extreme event can carry hail stones traveling at speeds greater than 100 miles per hour (National Weather Service 2019). This could cause structural damage to buildings.
- For high wind events, including hurricanes, building construction plays a major role in the extent of damage resulting from a storm event. Due to differences in construction, residential structures are generally more susceptible to wind damage than commercial and industrial structures. Wood and masonry buildings, in general, regardless of their occupancy class, tend to experience more damage than concrete or steel buildings. High-rise buildings are also very vulnerable structures. Mobile homes are the most vulnerable to damage, even if tied down, and offer little protection to people inside.
- The damage that results when a tornado arrives is devastating. An EF 4 tornado can carry wind velocities of 200 mph, resulting in a force of more than 100 pounds per square foot of surface area. This is a wind load that exceeds the design limits of most buildings.

The Hazus wind model was run to estimate potential losses to buildings from hurricanes or other straight-line high wind events. Expected building damage was evaluated across the wind damage categories described in Table 11-46. Building damage as a result of the 100-year and 500-year MRP hurricane wind events was estimated using Hazus, as summarized in Table 11-47. Two residential buildings are expected to be destroyed and five residential and five commercial buildings would be severely damaged by the 100-year MRP hurricane wind event. For the 500-year MRP hurricane wind event, most of the losses would be to residential buildings. An estimated 174 buildings would be destroyed and 83 buildings would experience severe damage. Moderate damage would occur to 1,599 buildings and 11,640 would have minor damage.

Table 11-46. Description of Damage Categories

Qualitative Damage Description	Roof Cover Failure	Window Door Failures	Roof Deck	Missile Impacts on Walls	Roof Structure Failure	Wall Structure Failure
No Damage—Little or no visible damage. No broken windows or failed roof deck. Minimal loss of roof cover. Minimal water penetration.	≤2%	No	No	No	No	No
Minor Damage—Maximum of one broken window or door. Moderate roof cover loss that can be covered to prevent additional water entering the building. Marks or dents on walls requiring painting or patching for repair.	>2% and ≤15%	One window, door, or garage door failure	No	<5 impacts	No	No
Moderate Damage—Major roof cover damage, moderate window breakage. Minor roof sheathing failure. Some resulting damage to interior of building from water.	>15% and ≤50%	> one and ≤ the larger of 20% & 3	1 to 3 panels	Typically 5 to 10 impacts	No	No
Severe Damage—Major window damage or roof sheathing loss. Major roof cover loss. Extensive damage to interior from water.	>50%	> the larger of 20% & 3 and ≤50%	>3 and ≤25%	Typically 10 to 20 impacts	No	No
Destruction—Complete roof failure and/or, failure of wall frame. Loss of more than 50% of roof sheathing.	Typically >50%	>50%	>25%	Typically >20 impacts	Yes	Yes

Source: FEMA 2022

Table 11-47. Expected Damage from 100- and 500- Year MRP Events

Total Number of Buildings in Occupancy	Severity of Expected Damage	100-Year MRP		500-Year MRP	
		Building Count	% Buildings in Occupancy Class	Building Count	% Buildings in Occupancy Class
Residential Exposure (Single and Multi-Family Dwellings)					
88,431	NONE	86,272	97.6%	74,934	84.7%
	MINOR	2,054	2.3%	11,640	13.2%
	MODERATE	99	0.1%	1,599	1.8%
	SEVERE	5	<0.1%	83	0.1%
	DESTRUCTION	2	<0.1%	174	0.2%
Commercial Buildings					
13,055	NONE	12,559	96.2%	10,772	82.5%
	MINOR	379	2.9%	1,366	10.5%
	MODERATE	112	0.9%	815	6.2%
	SEVERE	5	<0.1%	102	0.8%
	DESTRUCTION	0	0.0%	0	0.0%
Industrial Buildings					
738	NONE	713	96.6%	609	82.5%
	MINOR	20	2.7%	82	11.1%
	MODERATE	5	0.7%	40	5.4%
	SEVERE	0	0.0%	7	0.9%
	DESTRUCTION	0	0.0%	0	0.0%

Total Number of Buildings in Occupancy	Severity of Expected Damage	100-Year MRP		500-Year MRP	
		Building Count	% Buildings in Occupancy Class	Building Count	% Buildings in Occupancy Class
Other Buildings[a]					
1,028	NONE	1,013	98.5%	929	90.4%
	MINOR	14	1.4%	81	7.9%
	MODERATE	1	0.1%	17	1.7%
	SEVERE	0	0.0%	1	0.1%
	DESTRUCTION	0	0.0%	0	0.0%

Source: Hazus v6.1; Microsoft 2019; NJOIT 2024

a. Other = Government, Religion, Agricultural, Education

Table 11-48 summarizes the value of damage estimated for the 100- and 500-year MRP hurricane wind events. The estimates include buildings damaged at all severity levels, from minor damage to destruction. The total estimated damage to buildings for all occupancy types across Passaic County is estimated to be $130 million and $758 million for the 100- and 500-year MRP events, respectively. Most of these losses would be to residential buildings. The City of Clifton is estimated to experience the greatest damage in the 100- and 500-year MRP events—$28 million and $178 million, respectively. Damage to buildings is a affected by wind speed, direction, and duration, which are dependent upon the storm's intensity and track.

11.2.3 Community Lifelines and Other Critical Facilities

Critical facilities are at risk of being impacted by high winds associated with structural damage, or falling tree limbs/flying debris, which can result in the loss of power. Power loss can greatly impact households, business operations, public utilities, and emergency personnel. Emergency personnel such as police, fire, and EMS will not be able to effectively respond in a power loss event to maintain public safety unless backup power and fuel sources are available. Loss of power can impact other public utilities, including potable water, wastewater treatment, and communications. In addition to public water services, property owners with private wells might not have access to potable water until power is restored.

Table 11-49 and Table 11-50 summarize the damage state probabilities for critical facilities during the 100-year and 500-year MRP hurricane wind events:

- As a result of a 100-year MRP event, Hazus estimates that the Hazardous Materials lifeline has the greatest chance of sustaining minor damage (2.6 percent), followed by the Energy and Food, Hydration, and Shelter lifelines (both at 2.4 percent probability). Hazardous Materials lifeline also has the greatest chance of moderate damage, at an approximate 0.7 percent probability. Severe and complete damage to lifelines is negligible.
- As a result of a 500-year MRP event, Hazus estimates that the Food, Hydration, and Shelter lifeline has the greatest chance of sustaining minor damage (11.6 percent). The Hazardous Materials lifeline has the greatest chance of moderate damage (5.4 percent) and severe damage (1.0 percent). Complete damage is negligible.
- For the 100-Year MRP event, there are no days recorded for loss of function of any lifeline.
- For the 500-Year MRP event, the Safety and Security lifeline record less than one day of loss of functionality.

Table 11-48. Estimated Buildings Damaged by General Occupancy by the 100- and 500-Year MRP Events

Jurisdiction	Estimated Building Losses (Residential)		Estimated Building Losses (Commercial)		Estimated Building Losses (Industrial)		Estimated Damage (All Other Occupancies)		Estimated Building Losses (All Occupancies)	
	100-Year MRP Event	500-Year MRP Event	100-Year MRP Event	500-Year MRP Event	100-Year MRP Event	500-Year MRP Event	100-Year MRP Event	500-Year MRP Event	100-Year MRP Event	500-Year MRP Event
Bloomingdale (B)	$1,125,174	$4,041,627	$68,100	$421,915	$635	$5,062	$11,008	$64,637	$1,204,917	$4,533,242
Clifton (C)	$20,884,582	$127,436,679	$5,568,148	$37,344,777	$947,506	$9,350,009	$389,354	$3,825,982	$27,789,590	$177,957,446
Haledon (B)	$1,291,250	$6,906,895	$251,119	$1,595,032	$42,756	$318,222	$51,997	$709,556	$1,637,123	$9,529,705
Hawthorne (B)	$5,866,876	$27,925,697	$718,042	$4,677,063	$195,477	$1,416,864	$53,200	$438,960	$6,833,596	$34,458,584
Little Falls (T)	$3,623,719	$17,311,793	$719,431	$4,456,245	$102,785	$751,394	$89,692	$1,176,330	$4,535,626	$23,695,763
North Haledon (B)	$3,330,593	$15,426,432	$187,822	$1,246,070	$229	$2,279	$40,095	$376,853	$3,558,739	$17,051,633
Passaic (C)	$15,214,582	$98,006,748	$4,605,639	$32,038,073	$352,298	$3,491,229	$594,017	$4,725,344	$20,766,536	$138,261,394
Paterson (C)	$13,819,695	$81,992,753	$8,263,275	$50,956,474	$1,842,869	$16,165,255	$1,017,080	$7,808,701	$24,942,919	$156,923,184
Pompton Lakes (B)	$2,682,733	$10,168,637	$143,506	$1,186,712	$6,194	$54,869	$21,993	$250,694	$2,854,426	$11,660,913
Prospect Park (B)	$791,424	$4,300,514	$68,637	$453,918	$3,860	$27,675	$21,052	$158,244	$884,973	$4,940,351
Ringwood (B)	$2,036,771	$8,132,606	$95,193	$714,658	$11,699	$87,642	$20,364	$151,926	$2,164,027	$9,086,831
Totowa (B)	$3,705,992	$18,611,525	$1,657,058	$11,289,444	$414,822	$3,281,613	$33,990	$441,810	$5,811,862	$33,624,392
Wanaque (B)	$1,643,436	$6,530,474	$116,366	$823,605	$17,974	$161,561	$27,936	$186,900	$1,805,713	$7,702,540
Wayne (T)	$15,175,232	$68,975,722	$2,278,674	$16,701,045	$173,446	$1,710,351	$231,406	$2,523,636	$17,858,758	$89,910,754
West Milford (T)	$3,187,767	$13,290,619	$122,028	$1,069,777	$8,409	$59,575	$40,136	$261,627	$3,358,340	$14,681,598
Woodland Park (B)	$3,194,645	$17,712,891	$728,372	$5,352,149	$56,417	$493,208	$29,709	$396,873	$4,009,143	$23,955,121
Passaic County (Total)	$97,574,471	$526,771,611	$25,591,410	$170,326,957	$4,177,375	$37,376,809	$2,673,030	$23,498,074	$130,016,287	$757,973,450

Source: Hazus v6.1; Microsoft 2019; RS Means 2024; NJOIT 2024

Table 11-49. Estimated Impacts on Critical Facilities for the 100-Year MRP Event

	Loss of Days	Average Percent Probability of Sustaining Damage 100-Year MRP Hurricane			
		Minor	Moderate	Severe	Complete
Communications	0	0.9%	0.1%	<0.1%	0.0%
Energy	0	2.4%	0.5%	<0.1%	0.0%
Food, Hydration, Shelter	0	2.4%	0.3%	<0.1%	0.0%
Hazardous Materials	0	2.6%	0.7%	<0.1%	0.0%
Health and Medical	0	1.9%	0.4%	<0.1%	0.0%
Safety and Security	0	1.8%	0.2%	0.0%	0.0%
Transportation	0	1.7%	0.1%	<0.1%	0.0%
Water Systems	0	1.5%	0.2%	<0.1%	0.0%

Source: Hazus v6.1; Passaic County 2024; (Passaic County Office of Emergency Management 2020); (Passaic County Department of Planning & Economic Development 2024); (HIFLD 2017, 2018, 2022, 2023); (NJGIN 2017, 2021, 2022); (HIFLD 2017, 2018, 2022, 2023); (NJGIN 2017, 2021, 2022)

Table 11-50. Estimated Impacts to Critical Facilities for the 500-Year MRP Event

	Loss of Days	Average Percent Probability of Sustaining Damage 500-Year MRP Hurricane			
		Minor	Moderate	Severe	Complete
Communications	0	5.2%	1.2%	0.2%	0.0%
Energy	0	10.4%	4.5%	0.7%	0.0%
Food, Hydration, Shelter	0	11.6%	4.3%	0.2%	0.0%
Hazardous Materials	0	10.3%	5.4%	1.0%	0.0%
Health and Medical	0	8.4%	4.4%	0.2%	0.0%
Safety and Security	<1	8.1%	4.2%	0.1%	0.0%
Transportation	0	8.6%	2.0%	0.1%	0.0%
Water Systems	0	6.3%	2.0%	0.3%	0.0%

Source: Hazus v6.1; Passaic County 2024; (Passaic County Office of Emergency Management 2020); (Passaic County Department of Planning & Economic Development 2024)

11.2.4 Economy

Economic impacts from severe weather events include the loss of business function (e.g., tourism, recreation), damage to inventory, relocation costs, wage loss, and rental loss due to the repair or replacement of buildings. Impacts on transportation lifelines affect long-term transportation needs (e.g., day-to-day commuting and goods transport). Recovery and clean-up costs can be costly and impact the economy as well (NJOEM 2024). Weather-related power failures can impact business operations.

Hazus estimates the debris produced as result of the 100- and 500-year MRP hurricane wind events. Table 11-51 summarizes the estimated debris by municipality. The estimates do not include debris generated by flooding, so this is likely a conservative estimate and could be higher if multiple impacts occur. For both MRP events, debris production from trees is the greatest, with the 100-year MRP creating an estimated 92,907 tons of debris and the 500-year MRP event creating 405,438 tons.

Table 11-51. Debris Production for 100- and 500-Year MRP Event Winds

Jurisdiction	Brick and Wood (tons)		Concrete and Steel (tons)		Trees (tons)	
	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Bloomingdale (B)	77	397	0	0	296	3,251
Clifton (C)	2,628	14,843	0	60	2,924	9,250
Haledon (B)	195	1,017	0	2	194	637
Hawthorne (B)	556	2,986	0	4	611	1,834
Little Falls (T)	371	1,950	0	7	388	1,269
North Haledon (B)	256	1,420	0	0	389	1,291
Passaic (C)	2,066	11,265	0	47	710	2,124
Paterson (C)	2,997	15,598	0	17	1,551	4,876
Pompton Lakes (B)	149	858	0	0	193	1,205
Prospect Park (B)	124	634	0	1	90	331
Ringwood (B)	127	756	0	0	494	11,423
Totowa (B)	538	2,758	0	3	560	1,999
Wanaque (B)	130	697	0	0	246	3,153
Wayne (T)	1,486	8,056	0	13	1,840	9,070
West Milford (T)	160	1,002	0	0	2,827	30,289
Woodland Park (B)	396	2,129	0	0	402	1,412
Passaic County (Total)	12,256	66,366	0	154	13,715	83,414

Source: Hazus v6.1; Microsoft 2019; NJOIT 2024

11.2.5 Natural, Historic and Cultural Resources

Natural

Severe weather creates longer periods of rainfall, which can erode natural banks along waterways and degrade soil stability for terrestrial species. Tornadoes can tear apart habitats causing fragmentation across ecosystems (United States Environmental Protection Agency 2023). Severe weather events can impact water resources, leading to the spread of diseases across ecosystems (United States Climate Resilience Toolkit 2016). As the physical environment becomes more altered, species may contract or migrate in response, causing additional stressors to the entire ecosystem within Passaic County. The impacts of hurricane-related winds on the environment typically occur over a larger area, resulting in widespread, severe damage to tree and plant species. This includes uprooting or destruction of trees and an increased threat of wildfire in areas where dead trees are not removed.

Historic

Winds associated with severe weather can cause significant damage to historic infrastructure. Historic sites are particularly vulnerable due to their age and construction prior to modern building standards. The materials used in these structures may be aged and prone to maintenance issues, making them more susceptible to damage. Additionally, any damage repair may require compliance with stringent landmark laws, complicating and increasing the cost of repairs.

Historic buildings are at risk of structural damage during flood events caused by thunderstorm or hurricane rains. Many historic resources and structures were built close to waterways, which increases their flood risk. Severe flood events could result in devastating loss of life and property in and around these historical landmarks.

Cultural

Winds associated with severe weather can cause significant damage or destruction to cultural resources. The historic buildings that house such resources may be particularly vulnerable due to their construction prior to modern building standards, which may not withstand high winds. The materials used in these structures may be aged and prone to maintenance issues, further increasing their susceptibility to damage.

Cultural heritage sites exposed to severe weather are subject to weathering and deterioration. Outdoor cultural events are at risk, as severe weather can lead to postponements or cancellations.

The vulnerability of cultural resources is heightened by their irreplaceable nature. Damage to these sites can result in the loss of unique historical and cultural artifacts, which cannot be easily restored or replaced. Additionally, any damage repair may require compliance with stringent landmark laws, complicating and increasing the cost of repairs.

11.3 FUTURE CHANGES THAT MAY AFFECT RISK

11.3.1 Potential or Planned Development

Understanding future changes that impact vulnerability in Passaic County is crucial for planning development and ensuring appropriate mitigation, planning, and preparedness measures. New development and residents will face hurricane and tropical storm hazards, but increased standards and codes may reduce their vulnerability to wind and flood-related impacts compared to older buildings.

New development will replace open land and vegetation with buildings, roads, and other infrastructure that is less able to absorb precipitation. This transformation can make surfaces that were once permeable and moist become impermeable and dry, leading to increased surface runoff and altered water conveyance patterns.

Areas targeted for future growth and development have been identified across the County. These areas are vulnerable to severe storm events, and new development sites should adhere to building codes that provide high wind protection and flood-proofing measures. Specific areas of recent and new development are detailed in tables and hazard maps included in the jurisdictional annexes in Volume II of this plan.

11.3.2 Projected Changes in Population

An increase in population density can create issues for local residents during evacuation from a severe storm event. Densely populated areas of the County may require utility system upgrades to keep up with utility demands (e.g., water, electric) during storms to prevent increased stresses on these systems.

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

11.3.3 Climate Change

Climate is defined by the type, frequency, and intensity of weather events. Both globally and at the local scale, climate change has the potential to alter the frequency and severity of severe weather. Most studies project that the State of New Jersey will see an increase in average annual precipitation, primarily in the form of heavy rainfalls. Increases in precipitation may alter and expand the floodplain boundaries and runoff patterns, resulting in the exposure of populations, buildings, and critical facilities and infrastructure that were previously outside the floodplain. This increase in exposure would result in an increased risk to life and health, an increase in structural losses, a diversion of additional resources to response and recovery efforts, and an increase in business closures affected by future flooding events due to loss of service or access. Moreover, as the physical environment becomes more altered, species will begin to contract or migrate in response, which may cause additional stressors to ecosystems within Passaic County.

12. SEVERE WINTER WEATHER

12.1 HAZARD PROFILE

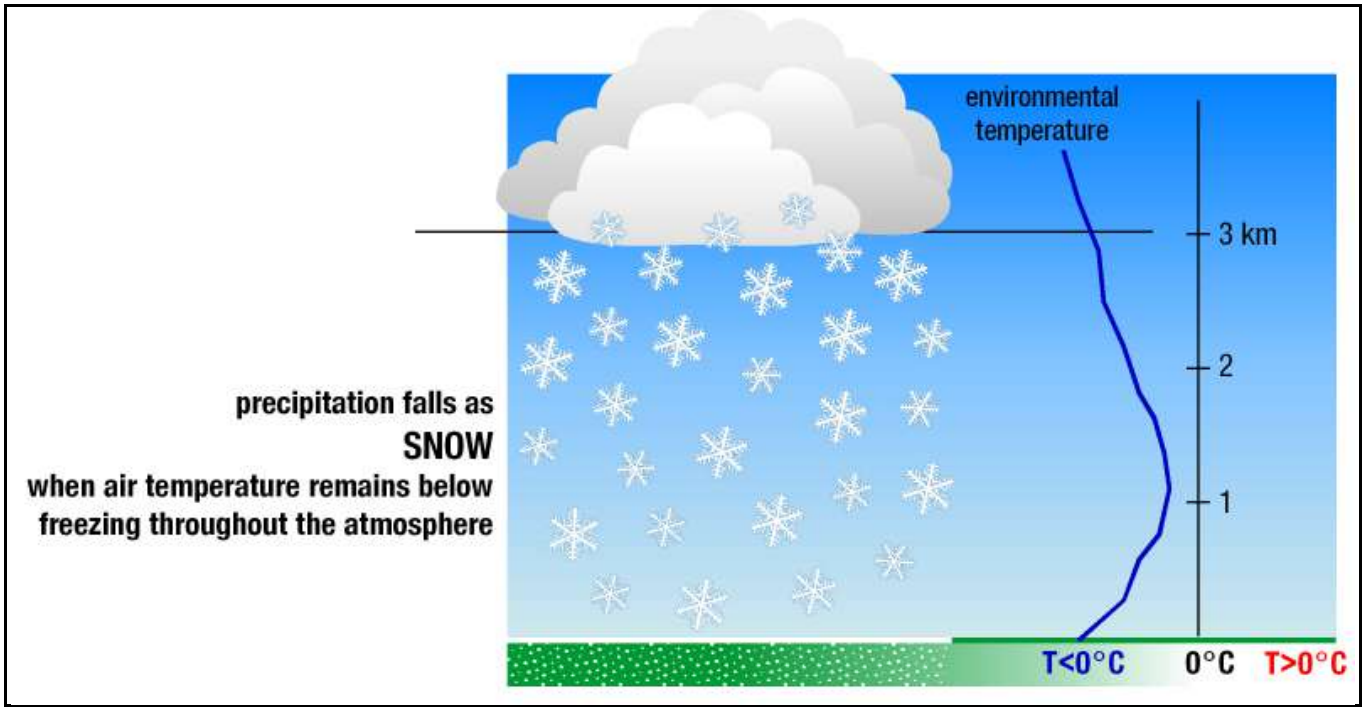
12.1.1 Hazard Description

The severe winter weather hazard for this HMP includes extreme events involving snow, sleet, or freezing rain, often in combination with dangerous wind chills and low temperatures. Some winter weather events can immobilize an entire region, while others might only affect a single community. Such events can result in cold temperatures, flooding, storm surge, closed or blocked roadways, downed utility lines, and power outages. The aftermath of a severe winter weather event can impact a community or region for days, weeks, or even months. The types of severe winter weather addressed in this HMP are heavy snow, blizzards, sleet, ice storms, and nor'easters.

Heavy Snow

Snow is precipitation in the form of ice crystals (NSIDC 2024). It originates in clouds when temperatures are below the freezing point (32 °F) and water vapor in the atmosphere condenses directly into ice without going through the liquid stage. Once an ice crystal has formed, it absorbs and freezes additional water vapor from the surrounding air, growing into snow crystals, which then fall to the earth. Snowflakes are clusters of ice crystals that form from a cloud. Figure 12-1 depicts snow creation.

Figure 12-1. Snow Creation



Source: NOAA 2023

Blizzards

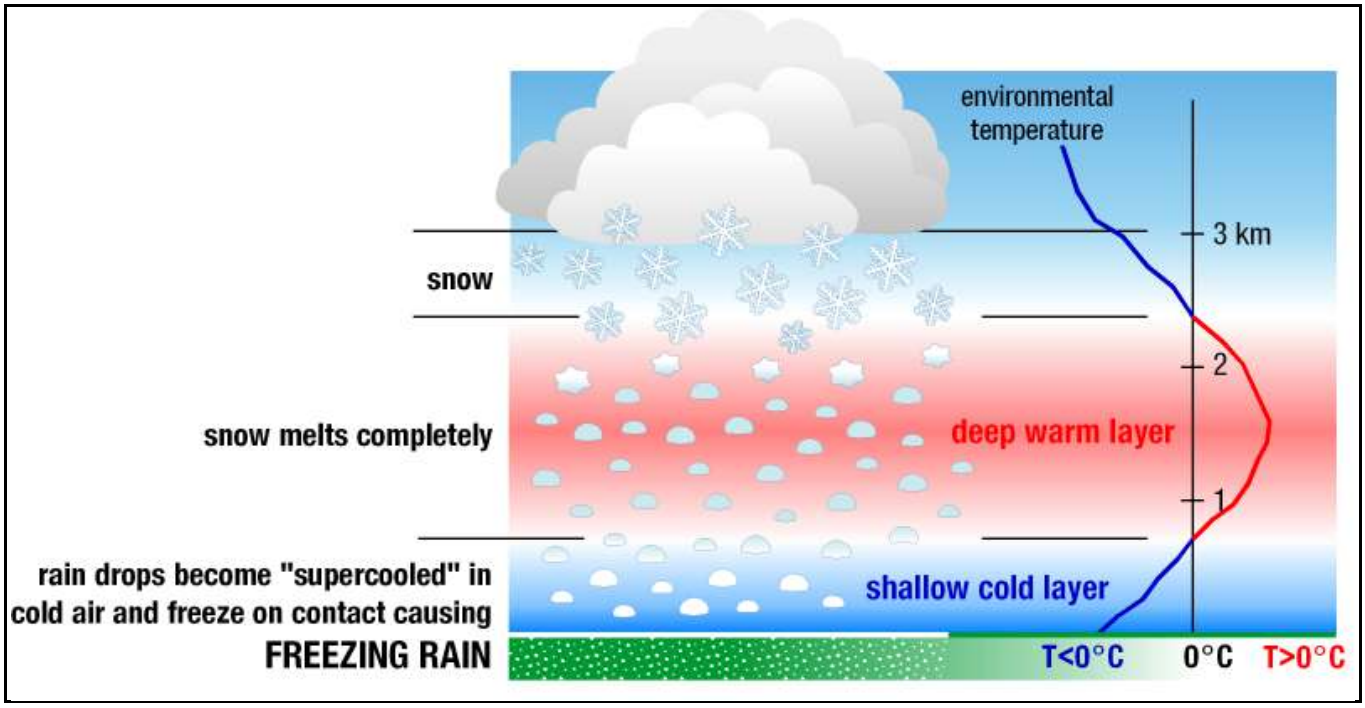
A blizzard is a winter snowstorm with sustained or frequent wind gusts of 35 miles per hour (mph) or more, accompanied by falling or blowing snow reducing visibility to 0.25 miles or less, as the predominant conditions over a three-hour period (NOAA NWS n.d.). Extremely cold temperatures often are associated with blizzard conditions but are not a formal part of the definition. The hazard, created by the combination of snow, wind, and low visibility, significantly increases when temperatures are below 20 °F. A severe blizzard is categorized as having temperatures near or below 10 °F, winds exceeding 45 mph, and visibility reduced by snow to near zero (NOAA NWS n.d.).

Storm systems powerful enough to cause blizzards usually form when the jet stream dips far to the south, allowing cold air from the north to clash with warm, moister air from the south. Blizzard conditions often develop on the northwest side of an intense storm system. The difference between the lower pressure in the storm and the higher pressure to the west creates a tight pressure gradient, resulting in strong winds and extreme conditions caused by the blowing snow (Lam 2019).

Ice Storms

An ice storm consists of damaging accumulations of ice (typically 0.25 inches or greater) during freezing rain situations (NOAA n.d.). Heavy accumulations of ice can bring down trees, power lines, utility poles, and communication towers. Ice can disrupt communications and power for days. Even small accumulations of ice can be extremely dangerous to motorists and pedestrians (NWS 2019). Figure 12-2 depicts the creation of freezing rain that leads to an ice storm.

Figure 12-2. Freezing Rain Creation

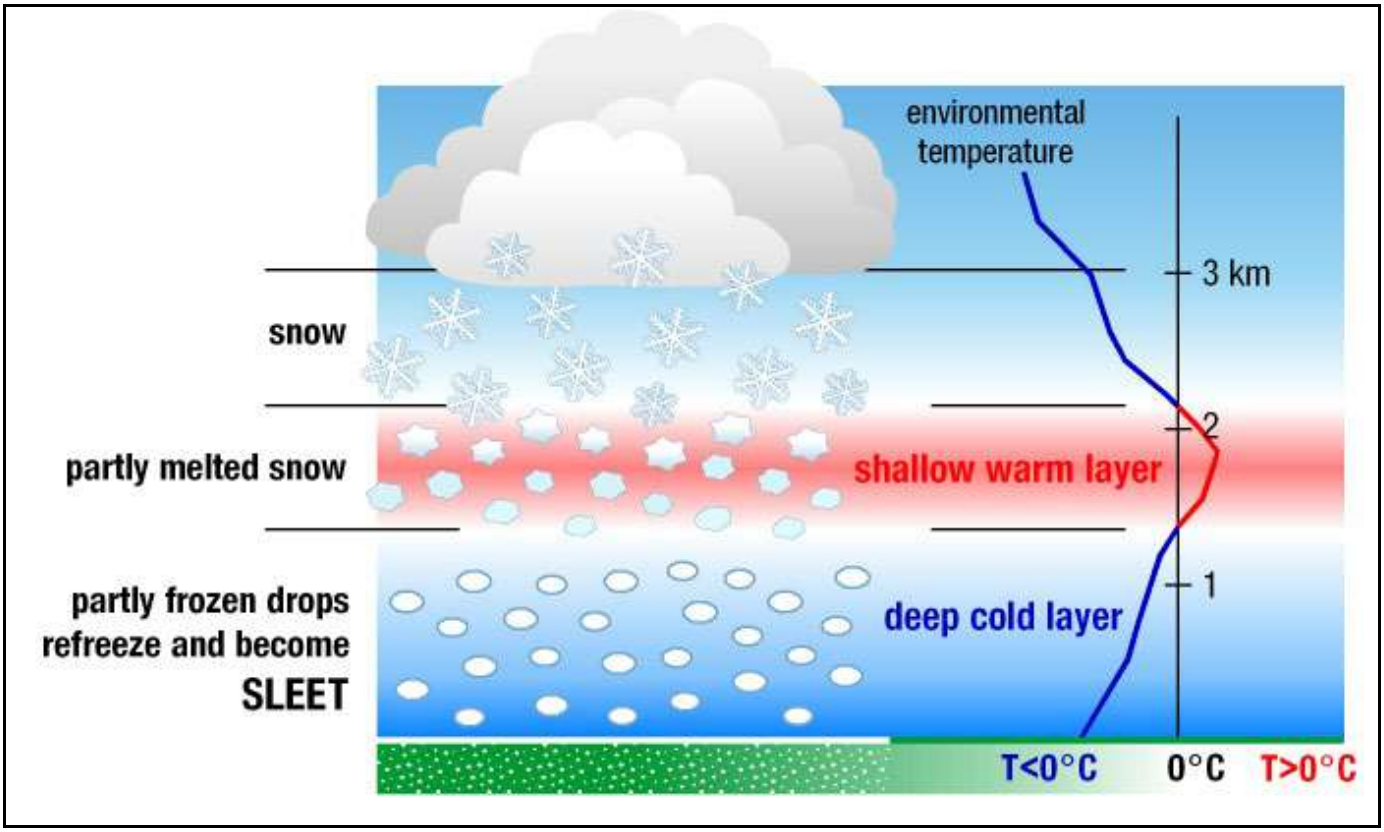


Source: NOAA 2023

Sleet

Sleet is made up of drops of rain that freeze into ice as they fall. They are usually smaller than 0.30 inches in diameter (NSIDC 2024). A sleet storm involves significant accumulations of solid pellets, which form from the freezing of raindrops or partially melted snowflakes causing slippery surfaces, posing a hazard to pedestrians and motorists (NSIDC 2024). Figure 12-3 depicts sleet creation.

Figure 12-3. Sleet Creation



Source: NOAA 2023

Nor'easter

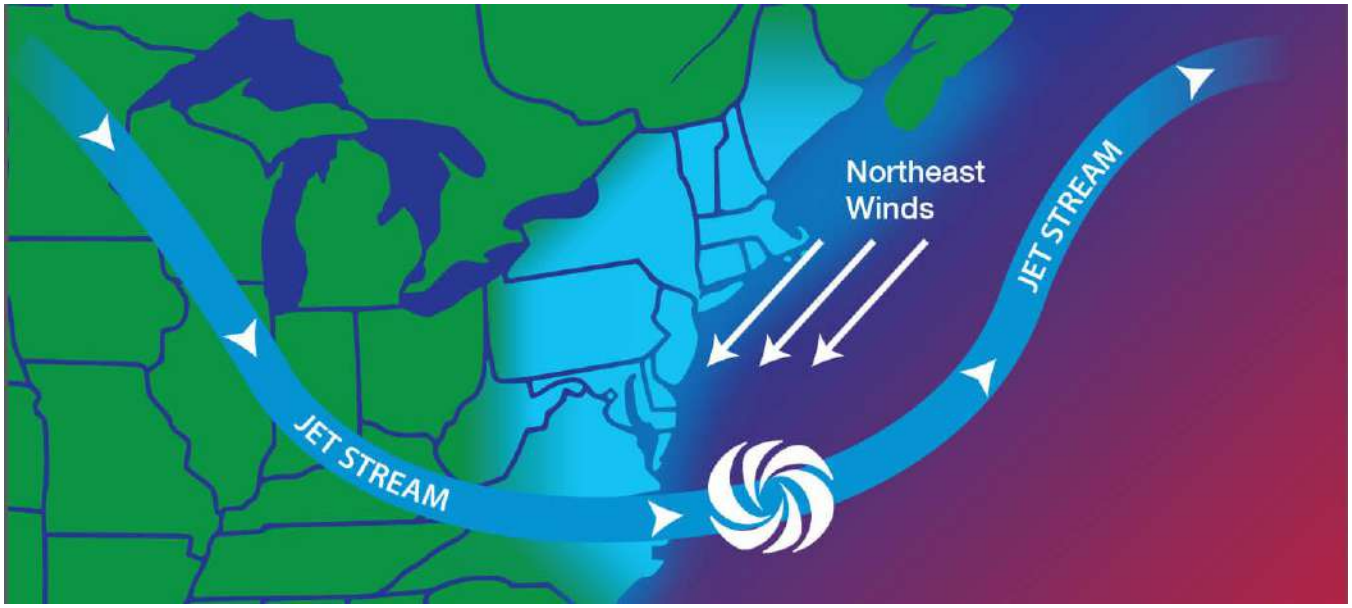
A nor'easter is a cyclonic storm that moves along the east coast of North America. It is called a nor'easter because the damaging winds over coastal areas blow from a northeasterly direction. Nor'easters are most frequent and strongest between September and April. These storms usually develop between Georgia and New Jersey within 100 miles of the coastline and typically move from southwest to northeast along the Atlantic Coast (NWS n.d.). Nor'easters can span thousands of miles, impacting large areas of coastline. To be classified a nor'easter, a storm must have the following conditions (NJOEM 2024):

- Persists for at least a 12-hour period
- Has a closed circulation
- Shows general movement from the south-southwest to the north-northeast
- Contains wind speeds greater than 23 miles per hour (mph)

A nor'easter event can cause heavy rain, heavy snow, and wind, with storm surges, waves, and coastal flooding in areas along the coast. With a forward speed much slower than that of a hurricane, a nor'easter can linger for days and cause tremendous damage to affected areas. Approximately 20 to 40 nor'easters occur in the northeastern United States every year (NPS 2023). New Jersey can experience 10 to 20 nor'easters each year, with five to 10 of those having significant impact on the state (NJOEM 2024).

The intensity of a nor'easter can rival that of a tropical cyclone in that, on occasion, it may flow or stall off the mid-Atlantic coast resulting in prolonged episodes of precipitation, coastal flooding, and high winds. Figure 12-4 displays the formation of a Nor'easter.

Figure 12-***4***. Formation of a Nor'easter



Source: NOAA 2023

12.1.2 Location

Heavy Snow, Blizzards, and Sleet

Snow and sleet events can impact the entire county. The trajectory of the storm center largely determines the intensity and duration of snowfall over the state. The heaviest snowfall often occurs within a 150-mile-wide swath to the northwest of what are generally southwest to northeast moving storms. Whether all or a portion of New Jersey falls within this swath determines which portion of the state receives the heaviest amount of snow. Between 1945 and 2006 (the most recently available record), Passaic County received 25.9 inches of snow on average every year, based on totals measured at Wanaque Raymond Dam (ONJSC 2006).

Ice Storms

All regions of the state are subject to ice storms. The distribution of ice storms often coincides with general distribution of snow within several zones in the state (NJOIT 2024). As a coastal storm moves northeastward offshore, a cold rain may fall over the southern portion of the state, with freezing rain over the central region and snow over the northern counties. A locality's distance from the storm center is often the crucial factor in determining the temperature and type of precipitation during a winter storm.

Nor'easter

Several nor'easters have impacted New Jersey. Nor'easters can occur any time of the year but are most frequent and strongest between September and April (NWS n.d.). The entire State of New Jersey is susceptible to the effects of these storms, depending on the storm's track. However, coastal communities and other low-lying areas of the state are particularly vulnerable. Most of the damage following these storms often results from residual wind damage.

12.1.3 Extent

Heavy Snow, Blizzards, Ice Storms, and Sleet

The severity of severe winter weather is defined by snowfall rates, snowfall amounts, wind speeds, temperatures, visibility, storm duration, topography, time of occurrence during the day and week (e.g., weekday versus weekend), and time of season.

The National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC) produces the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two-thirds of the United States. The RSI ranks snowstorm impacts on a scale from 1 to 5, based on the spatial extent of the storm, the amount of snowfall, and the interaction of the storm with population. The NCDC has analyzed and assigned RSI values to over 500 storms since 1900 (NOAA n.d.). Table 12-1 presents the five RSI ranking categories.

Table 12-1. Regional Snowfall Index Ranking Categories

Category	Description	RSI Value
1	Notable	1–3
2	Significant	3–6
3	Major	6–10
4	Crippling	10–18
5	Extreme	18.0+

Source: NOAA n.d.

The NWS uses the following alerts to help people anticipate upcoming severe winter weather conditions:

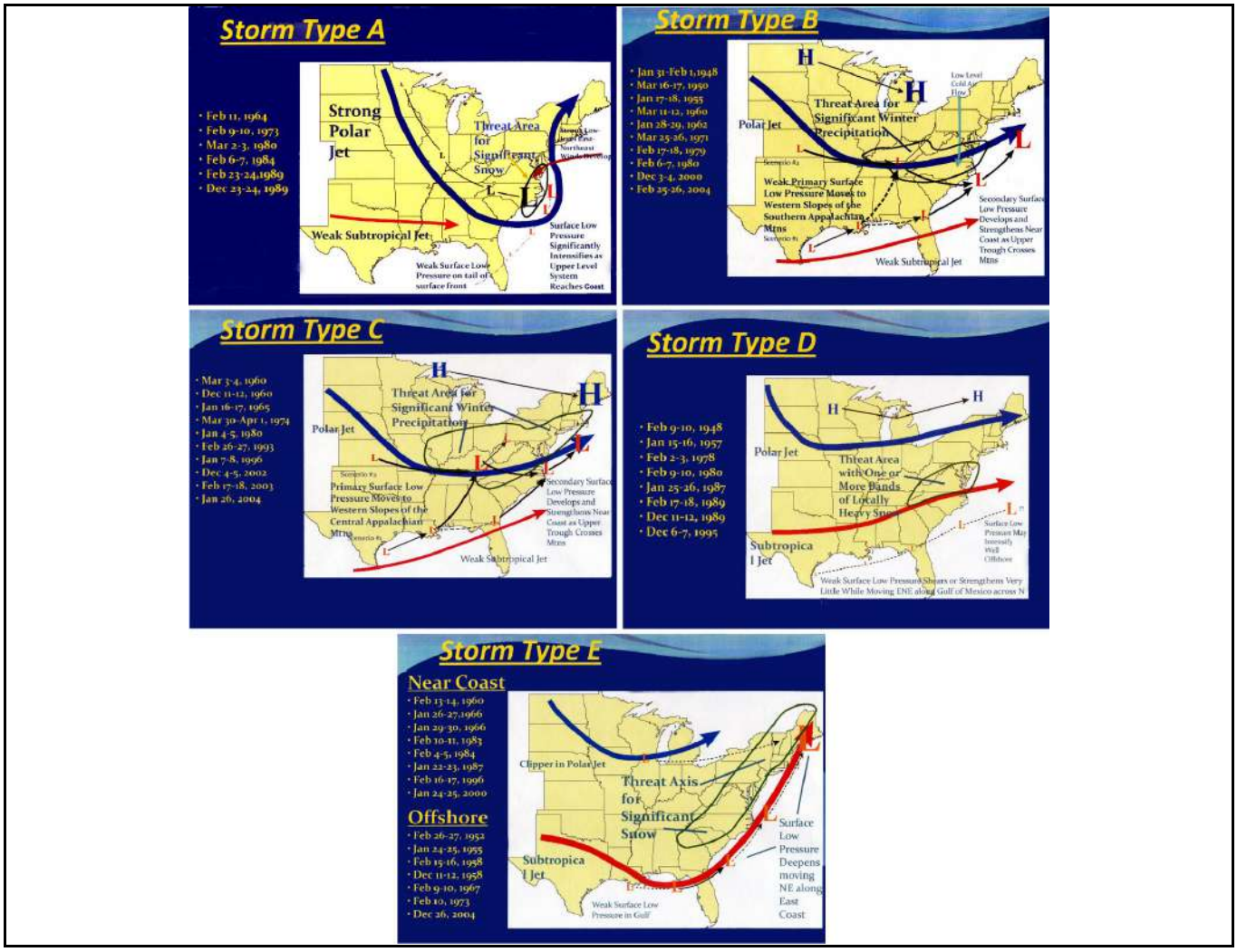
- A **winter storm watch** is issued when severe winter conditions (heavy snow, ice, etc.) may affect a certain area, but its occurrence, location, and timing are uncertain. A watch is issued to provide 24 to 72 hours of notice of the possibility of severe winter weather.
- A **winter storm warning** is issued when hazardous winter weather, in the form of heavy snow, heavy freezing rain, or heavy sleet, is imminent or occurring. A warning is usually issued 12 to 24 hours before the event is expected to begin.
- A **winter weather advisory** is issued when a hazardous winter weather event is occurring, is imminent, or has a greater than 80 percent chance of occurrence. Advisories are used to inform people that winter weather conditions are expected to cause significant inconveniences and that conditions may be hazardous. These conditions may refer to sleet, freezing rain, or ice storms, in addition to snow events (NWS n.d.).

Nor'easter

Nor'easters have the potential to impact society to a greater extent than hurricanes and tornadoes. These storms often have a diameter three to four times larger than a hurricane and therefore impact much larger areas. More homes and properties become susceptible to damage as the size and strength of a nor'easter intensifies (NWS n.d.). Most of the damage from a nor'easter is caused by wind.

The severity of a nor'easter depends on snowfall amounts, snowfall rates, wind speeds, temperatures, visibility, storm duration, topography, time of occurrence during the day (e.g., weekday versus weekend), and season. Nor'easters were classified in 1946 into two major categories. The most common are Miller Type A nor'easters, which form in the Gulf of Mexico and develop into full-fledged storms that move along the East Coast. Miller Type B nor'easters originate as low-pressure systems in the U.S. Midwest. These less-common systems diminish after crossing the Appalachian Mountains and reform into nor'easters on the East Coast (National Geographic 2022). A 2004 study added classification types C through E onto the Miller Classification after identifying five predominant patterns that produce 4 inches or more of snowfall across the Mid-Atlantic (Siebers n.d.). Figure 12-5 describes the five categories.

Figure 12-5. Nor'easter Miller Classifications



Source: Siebers n.d.

12.1.4 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has been included in four major disaster (DR) or emergency (EM) declarations for severe winter weather-related events (FEMA 2023). Table 7-4 lists these declarations.

Table 12-2. FEMA Declarations for Severe Winter Weather Events in Passaic County (1954 to 2023)

Event Date	Declaration Date	Declaration Number	Description
March 13, 1993	March 17, 1993	EM-3106-NJ	Severe Blizzard
January 7, 1996	January 13, 1996	DR-1088-NJ	Severe Blizzard of '96
February 16, 2003	March 20, 2003	EM-3181-NJ	Blizzard and Coastal Flooding
December 26, 2010	February 4, 2011	DR-1954-NJ	Severe Blizzard

Source: NOAA-NCEI 2023; FEMA 2023

USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Between 2019 and 2023, Passaic County was included in two USDA severe winter weather-related agricultural disaster declarations, as listed in Table 7-6 (USDA 2024).

Table 12-3. USDA Declarations for Severe Winter Weather Events in Passaic County (2019 to 2023)

Event Date	USDA Declaration Number	Description
April 6 to May 15, 2020	S4748	Freeze and Frost
May 17 to 18, 2023	S5644	Freeze and Frost

Source: USDA 2024

Previous Events

Known hazard events that impacted Passaic County between August 2019 and December 2023 are listed in Table 7-6. For events prior to 2019, refer to the 2019 Passaic County HMP.

Table 12-4. Severe Winter Weather Events in Passaic County (August 2019 to December 2023)

Event Date	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
December 1-3, 2019	N/A	N/A	County-wide	Observers reported 4 to 6 inches of snow in Eastern Passaic County and 7 to 9 inches of snow in Western Passaic County.
December 16-17, 2020	N/A	N/A	County-wide	Weather observers measured 6 to 8 inches of snow. The nearby Teterboro Airport measured a 38 mph wind at 6:51 a.m. on December 17.

Event Date	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
February 1-3, 2021	N/A	N/A	County-wide	Trained spotter reported 15 inches of snow in Wayne, 26.2 inches of snow in Bloomingdale, and 24.7 inches in West Milford. The nearby Newark Liberty International Airport measured a 41-mph wind gust on February 1.
February 7, 2021	N/A	N/A	County-wide	Snowfall rates within a low-pressure band were up to 2 inches per hour at times. Snowfall accumulation ranged from 4 to 8 inches.
February 18-19, 2021	N/A	N/A	County-wide	A brief period of moderate to heavy snowfall occurred during the morning and early afternoon on February 18. A trained spotter in Wayne reported 5 inches of snow.
February 22, 2021	N/A	N/A	County-wide	A brief period of moderate to locally heavy snow transitioned to rain during the afternoon as temperatures rose above freezing. Spotters reported 4.8 inches of snowfall and a trace of freezing rain in Bloomingdale and 5 inches of snowfall in Wayne.
January 6-7, 2022	N/A	N/A	Eastern Passaic County	Moderate snowfall occurred across most portions of northeastern New Jersey. A spotter measured 4.3 inches in Wayne.
January 16-17, 2022	N/A	N/A	County-wide	Snow accumulated across northern and northwestern New Jersey. Radar indicated 2 to 4 inches of snow across Eastern Passaic County and 2 to 5 inches in Western Passaic County before a changeover to freezing rain, then rain, occurred.
January 28-29, 2022	N/A	N/A	County-wide	A nor'easter brought snow and gusty winds. Wind gusts of 40 mph were reported across eastern parts of northeastern New Jersey. Snowfall ranged from 3.3 to 5.1 inches across Passaic County.
February 13, 2022	N/A	N/A	Western Passaic County	Trained spotters reported 3.7 inches of snow at 5 N West Milford and 3.1 inches at 1 NE West Milford.
February 27-28, 2023	N/A	N/A	County-wide	Heavy snow fell across the western portion of the county and carried into the morning commute. The public reported 6.0 inches in Bloomingdale. Wet snow fell across the eastern half of the county. Snowfall amounts ranged generally from 3 to 5 inches across this portion of the County.

Source: FEMA 2023; NOAA NCEI 2023

12.1.5 Probability of Future Occurrences

Probability Based on Previous Occurrences

Information on previous severe winter weather occurrences in the County was used to calculate the probability of future occurrence of such events, as summarized in Table 9-5. Based on historical records and input from the Steering Committee, the probability of occurrence for severe winter weather in the County is considered “occasional.”

Table 12-5. Probability of Future Severe Winter Weather Events in Passaic County

Hazard Type	Number of Occurrences Between 1996 and 2023	Percent Chance of Occurring in Any Given Year
Blizzard	2	7%
Heavy Snow	27	100%
Sleet	1	4%
Ice Storm	11	41%
Winter Storm*	1	4%
Total	42	100%

Source: NOAA NCEI 2024
Note: Nor'easter events are not tracked in the NCEI database but are often recorded as winter storms.

Table 9-5 does not include the annual probability of nor'easters or freezing rain because these events are not discretely recorded in the National Centers for Environmental Information (NCEI) database. Because of limitations in classifying and tracking nor'easter events, it is difficult to assign probabilities to nor'easters, except over the long-term. High activity seasons are when storm activity exceeds the historical 75th percentile. Seasons with this number of storms are expected to occur during one out of four years. Lower activity seasons are when storm activity falls below the historical 75th percentile; meaning this number of storms are expected to occur during three out of four years (NWS n.d.).

Based on data from 1948 to 2000, Passaic County can anticipate three to four days with freezing rain per year (Changnon and Karl 2003). Based on data from 1932 to 2001, the County can anticipate six to nine total hours of freezing rain per year (S. Changnon 2004).

Effect of Climate Change on Future Probability

There is a lack of quantitative data to predict how future climate change will affect snowfall and ice storms in New Jersey. It is likely that the number of winter weather events will decrease, and the winter weather season may shorten. However, it is also possible that when winter storms do occur, they will be more intense and severe than in the past.

Some climatologists predict that climate change may play a role in the frequency and intensity of nor'easters. Two ingredients are needed to produce strong nor'easters and intense snowfall: temperatures which are just below freezing, and massive moisture coming from the Gulf of Mexico. When temperatures are far below freezing, snow is less likely. As winter temperatures increase in the future, they will be closer to freezing rather than frigidly cold. Future climate change has been predicted to produce more moisture, thus increasing the likelihood that these two ingredients (temperatures just below freezing and intense moisture) will cause more intense snow events. However, the exact effect on winter weather remains uncertain (Sustainable Jersey Climate Change Adaptation Task Force 2011) Future enhancements in climate modeling will provide an improved understanding of how the climate will change and impact Passaic County.

12.1.6 Cascading Impacts on Other Hazards

Heavy precipitation and the freezing and thawing of snow and ice can create major flooding issues in the County. Nor'easter events can create coastal flooding, which can impact the southeastern portion of the County.

Severe winter weather events, especially nor'easters, often coincide with or are followed by extreme cold events and generate strong winds that create very low wind chills.

High winds and ice and snow accumulation can be destructive to the functionality of utilities by breaching power lines and disconnecting the utility systems. Severe winter weather could also result in falling trees and branches due to ice, snow, and strong winds. Fallen trees and branches increase available fuel for wildfires.

12.2 VULNERABILITY AND IMPACT ASSESSMENT

All of Passaic County is vulnerable to the winter storm hazard and its impacts. Current modeling tools are not available to estimate specific losses for this hazard. A qualitative analysis was conducted to assess the county's vulnerability to this hazard.

12.2.1 Life, Health, and Safety

Overall Population

The entire population of Passaic County (519,986) is exposed to severe winter weather events (US Census Bureau 2020). Likely impacts of this hazard include the following:

- Snow accumulation and frozen or slippery road surfaces increase the frequency and impact of traffic accidents for the general population, resulting in personal injuries or deaths.
- Winter weather indirectly and deceptively kills hundreds of people in the U.S. each year, primarily due to automobile accidents, overexertion, and exposure.
- These events are often accompanied by strong winds, creating blizzard conditions with blinding wind-driven snow, drifting snow, extreme cold temperatures, and dangerous wind chills.
- People can suffer heart attacks while shoveling snow or succumb to hypothermia from prolonged exposure to cold.
- Heavy accumulations of ice can bring down trees and power lines, disabling electric power and communications for days or weeks.

Socially Vulnerable Population

Without a quantitative assessment of potential impacts of severe winter weather on socially vulnerable populations, the Planning Partners can best assess mitigation options through an understanding of the general numbers and locations of such populations across Passaic County. Section 3.6.3 provides detailed data on socially vulnerable populations within the planning area. Table 6-5 summarizes highlights of this information. For planning purposes, it is reasonable to assume that percentages and distribution of socially vulnerable populations affected by severe winter weather will be similar to the countywide numbers.

Table 12-6. Distribution of Socially Vulnerable Populations by Municipality

Category	Sussex County Total		Municipality Highest in Category		Municipality Lowest in Category	
	Number	Percent	Number	Percent	Number	Percent
			Paterson	North Haledon	Prospect Park	Passaic
Population Over 65	**78,440**	**15.10%**	**18,141**	**24.6%**	**625**	**9.0%**
			Paterson	Passaic, Prospect Park	Bloomingdale	Bloomingdale
Population Under 5	**33,502**	**6.40%**	**12,442**	**8.3%**	**247**	**3.2%**
Non-English-Speaking Population	**68,953**	**13.30%**	Paterson **34,885**	Passaic **22.4%**	Bloomingdale, Ringwood **104**	Ringwood **0.9%**
Population With Disability	**46,707**	**9.00%**	Paterson **12,756**	Prospect Park **14.3%**	Bloomingdale **588**	Pompton Lakes **7.2%**
Population Below Poverty Level	**68,995**	**13.30%**	Paterson **37,143**	Paterson **23.5%**	Ringwood **262**	Ringwood **2.2%**
Households Below ALICE Threshold	**62,752**	**35%**	Paterson **33,284**	Paterson **67%**	North Haledon **745**	Ringwood **22%**

Particular impacts of this hazard on socially vulnerable populations are as follows (CDC 2022, CDC 2005):

- People 65 and older are susceptible to this hazard due to their increased risk of injuries and death from falls and overexertion and/or hypothermia from attempts to clear snow and ice. This vulnerability is exacerbated by factors such as reduced mobility, chronic health conditions, and a diminished ability to regulate body temperature. In addition, severe winter weather events can reduce the ability of these populations to access emergency services.
- Children are at heightened risk due to their smaller body size, which makes them more susceptible to hypothermia, and their dependence on adults for appropriate winter clothing and shelter.
- Low-income individuals frequently lack access to adequate heating, proper winter attire, and safe housing, increasing their exposure to extreme cold.
- The homeless population faces significant risks due to prolonged exposure to the elements, limited access to warm shelters, and challenges in obtaining necessary resources to remain safe during harsh winter conditions.

12.2.2 General Building Stock

The entire general building stock inventory is vulnerable to severe winter weather hazards, with aging infrastructure being particularly at risk. Some building materials, such as wood, are more vulnerable to these conditions. In general, structural impacts include damage to roofs and building frames, rather than complete destruction of buildings or damage to building contents. Older buildings may be more susceptible due to less stringent building codes and the use of less resilient materials.

Particular impacts of this hazard on buildings are as follows:

- Extreme blizzards or snowstorms can carry and deposit significant amounts of snow, which can be heavy enough to damage roofs and aging buildings.
- High winds associated with winter storms can also cause structural damage.
- The freeze/thaw cycle can weaken building materials, leading to cracks and other forms of deterioration. Some building materials, such as wood, are more vulnerable to these conditions.

12.2.3 Community Lifelines and Other Critical Facilities

Full functionality of critical facilities such as police, fire and medical facilities is essential for response during and after a severe winter weather event. These critical facility structures are largely constructed of concrete and masonry; therefore, they should suffer only minimal structural damage from severe winter weather events. Because power interruption can occur, backup power is recommended.

Infrastructure at risk for this hazard includes roadways that could be damaged due to the application of salt and intermittent freezing and warming conditions that can damage roads over time. Severe snowfall requires the clearing roadways and alerting citizens to dangerous conditions; following the winter season, resources for road maintenance and repair are required (NWS 2019).

Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days while utility companies work to repair the extensive damage. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians. Bridges and overpasses are particularly dangerous because they freeze before other surfaces (NWS 2019).

12.2.4 Economy

The financial burden of snow and ice removal, roadway treatments (such as salt and brine), and road repairs from the freeze/thaw process and plowing can strain local resources. Additionally, severe winter weather disrupts commuting for work or school, as power outages and road closures prevent travel within and outside the County, potentially leading to a loss in economic productivity. The economic impact of winter weather each year is substantial, with costs for snow removal, damage, and business losses reaching millions of dollar (NOAA 2023).

According to FEMA's National Risk Index, Passaic County's expected annual losses from severe winter weather events are as follows (FEMA 2024):

- Ice Storm: $225,000
- Winter Weather: $831,000

12.2.5 Natural, Historic and Cultural Resources

Natural

Excessive snowfall can significantly affect natural processes, such as surface water flows. Rain that falls onto an existing snowpack and freezes, forming an ice crust, can exacerbate runoff rates during warming winter weather. Increased flow rates and excess volumes of water can erode banks, tear apart habitat along the banks and coastline, and disrupt terrestrial plants and animals (Tiwari and Rachlin 2018).

Winter weather also has residual impacts on the environment due to the methods communities use to maintain their infrastructure during severe winter conditions (NSIDC n.d.). Road-salt runoff can cause groundwater salinization, modify the soil structure, and result in loss or reduction in lake turnover. Additionally, road salt can cause changes in the composition of aquatic invertebrate assemblages and pose threats to birds, roadside vegetation, and mammals (Tiwari and Rachlin 2018).

Historic

Historic buildings may be susceptible to damage from severe winter weather conditions. Proper strategies help safeguard buildings and their contents. Sudden and dramatic fluctuations in heating or cooling should be minimized. Slower heating and cooling give building materials and stored contents time to acclimate to new temperatures in the building and corresponding new humidity levels (CCAHA 2019).

Historic buildings, archaeological sites, and artifacts are vulnerable to severe winter weather due to several factors. Freeze-thaw cycles can cause significant damage as water seeps into cracks, freezes, expands, and then thaws, leading to the gradual breakdown of materials like stone, brick, and mortar. Snow and ice introduce moisture into structures and artifacts, which can freeze and cause expansion and cracking, while fluctuating humidity levels can deteriorate organic materials like wood and textiles.

Cultural

The weight of accumulated snow and ice can stress roofs and other structural elements, potentially leading to collapses. Extreme cold makes materials more brittle and susceptible to cracking, and sudden temperature changes can cause thermal shock, damaging delicate artifacts. Additionally, severe winter weather can hinder access and maintenance, making it challenging to perform necessary upkeep and repairs (NPS 2016).

12.3 FUTURE CHANGES THAT MAY AFFECT RISK

12.3.1 Potential or Planned Development

Areas targeted for future growth and development have been identified across the County. As development and re-development increase, even less-intense storms may lead to costly storm damage. Potential or planned development can influence the risk and impact of severe winter weather in several ways. As development expands into previously undeveloped areas, more people and properties become exposed to the risks of severe winter weather, leading to higher potential for economic losses and disruptions.

Urbanization often leads to the creation of urban heat islands, which are warmer than their rural surroundings due to human activities and infrastructure. While this might reduce the severity of winter weather in urban areas, it can also lead to more significant temperature contrasts and potentially more intense weather events.

New developments might not always be designed with severe winter weather in mind, especially in regions that historically experience milder winters, increasing the vulnerability of buildings, roads, and utilities to damage from snow, ice, and freezing temperatures. Rapid development can also strain local resources and emergency services, making it more challenging to respond effectively to severe winter weather events.

Additionally, development can alter natural landscapes, affecting local weather patterns and potentially increasing the frequency or severity of winter weather events. For example, deforestation and changes in land cover can influence local climate conditions.

12.3.2 Projected Changes in Population

An increase in population density can significantly hinder the ability of residents in the County to mobilize or receive essential services during severe winter weather events, as higher demand for resources and services can overwhelm infrastructure and emergency response systems.

The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

12.3.3 Climate Change

Winter temperatures in the Northeast have increased by 4 °F since 1970, leading to less intense cold waves, fewer sub-freezing days, and less snow accumulation. As temperatures rise, the atmosphere can hold more water vapor, increasing precipitation potential. The state's annual precipitation has slightly increased, with projections of a 4 percent to 11 percent rise by 2050.

While quantitative data on future snowfall and ice storms in the State of New Jersey is lacking, it is likely that winter weather events may decrease in number but increase in intensity. This is because a warmer atmosphere can hold more moisture, leading to heavier precipitation. Any increased temperature contrast between warmer air masses and cold Arctic air can intensify storm systems. The projected increase in annual precipitation, primarily in the form of heavy rainfalls, can freeze into heavy snowfall and ice. This could lead to higher risks to life and health, increased structural losses, more resources needed for response and recovery, and more business closures due to severe winter events. (The Climate Reality Project 2022). Future climate modeling will enhance understanding of these changes.

13. WILDFIRE

13.1 HAZARD PROFILE

13.1.1 Hazard Description

A wildfire is any non-structural fire that occurs in the wildland (forested, semi-forested, or less developed areas), including naturally occurring fires and human-caused fires, whether accidental or intentional (prescribed burns or arson). Most wildfires in New Jersey are caused by humans (NPS 2023). Wildfires can be highly destructive and difficult to control. They result in the uncontrolled destruction of forests, brush, field crops, grasslands, real estate, and personal property. In the State of New Jersey each year, an average of 1,500 wildfires damage or destroy 7,000 acres of forests. Wildfires also threaten homeowners who live within or adjacent to forest environments (NJFFS 2023).

The height of wildfire season in New Jersey is March through May, corresponding with the driest live fuel moisture periods of the year, though wildfires can occur every month of the year. Drought, snow pack, and local weather conditions can expand the length of the fire season. Fires in the early and late fire season usually are human-caused. Lightning generally is the cause of most fires in the peak season (NJOEM 2024).

The New Jersey Forest Fire Service (NJFFS) is responsible for protecting the 3.15 million acres of wildland in the state. NJFFS has 85 full-time employees that provide services including staffing the state's 21 fire towers, which are operational during in March, April, May, October, and November. NJFFS divides the State into three divisions—north, south and central—and 29 sections of 100,000 acres with a dedicated forest fire warden in each. Figure 13-1 shows the NJFFS divisions and sections. Passaic County is located in Division A, split between Section A2 and the secondary response area.

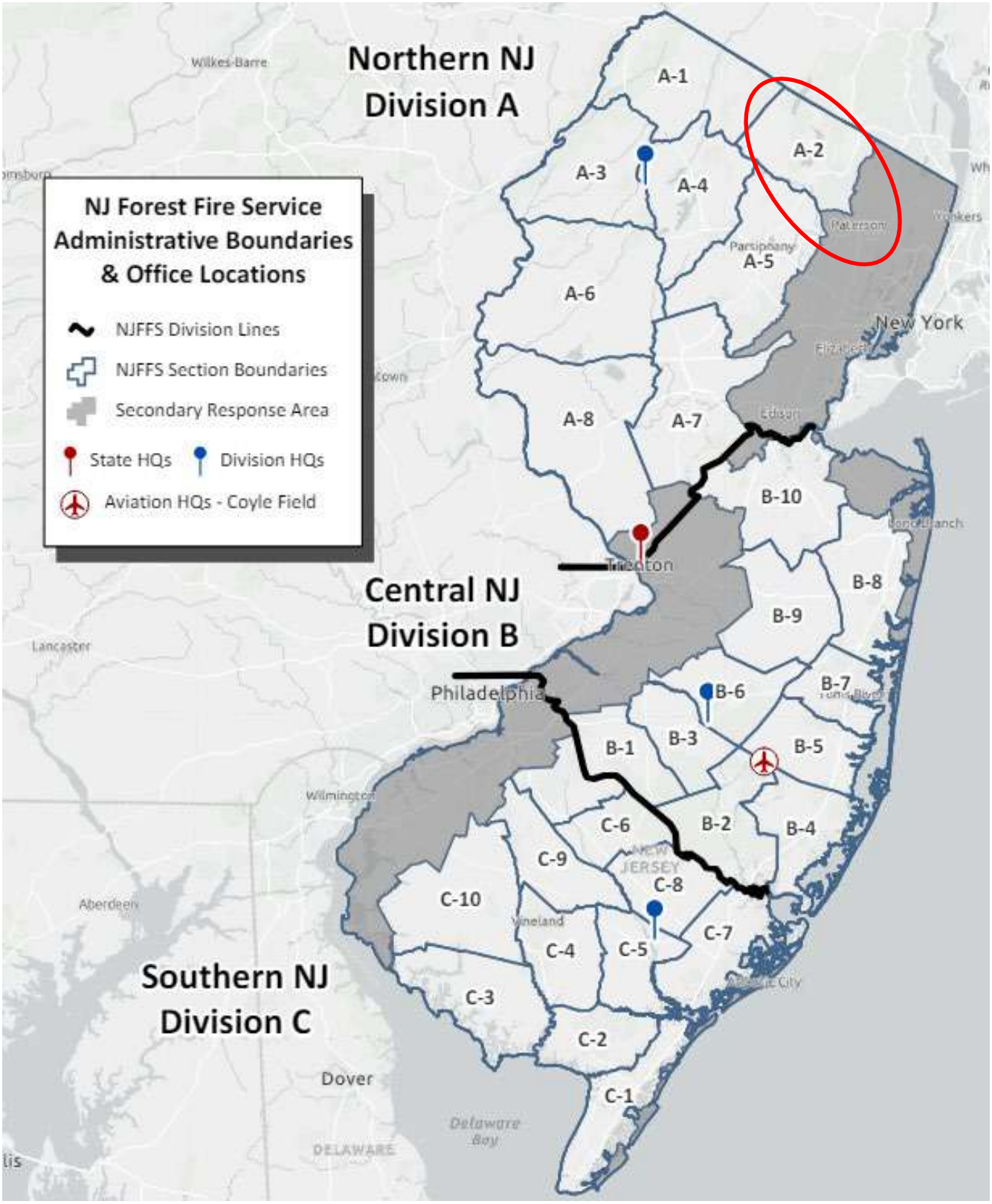
13.1.2 Location

NJFFS created the New Jersey Wildfire Risk Assessment to provide a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation and prevention planning in New Jersey. This assessment permits an area of interest to be defined for the user; a report for the wildfire hazard potential for Passaic County was created, identifying four measures of wildfire hazard—wildfire fuel hazard, wildfire hazard potential, wildfire burn probability, and surface fuel mapping—as described in the sections below.

Wildfire Fuel Hazard Areas

NJFFS developed wildfire fuel hazard data for the entire state (NJHC 2000). Figure 13-2 shows the high, very high, and extreme fuel hazard areas in Passaic County. The majority of Passaic County exhibits low fuel hazard and low to moderate wildfire risk. However, certain areas, particularly in the northern and western parts of the county, fall within high to extreme risk area. Overall, Passaic County has 15.4 square miles, or 8.3 percent of its total jurisdictional area, classified under the wildfire risk categories of extreme, very high, or high. Table 13-1 summarizes the area within each wildfire fuel hazard area, specific to Passaic County jurisdictions.

Figure 13-1. NJFFS Administrative Boundaries



Source: NJDEP 2020
Note: Passaic County indicated by red oval.

Figure 13-2. Wildfire Fuel Hazard for Passaic County

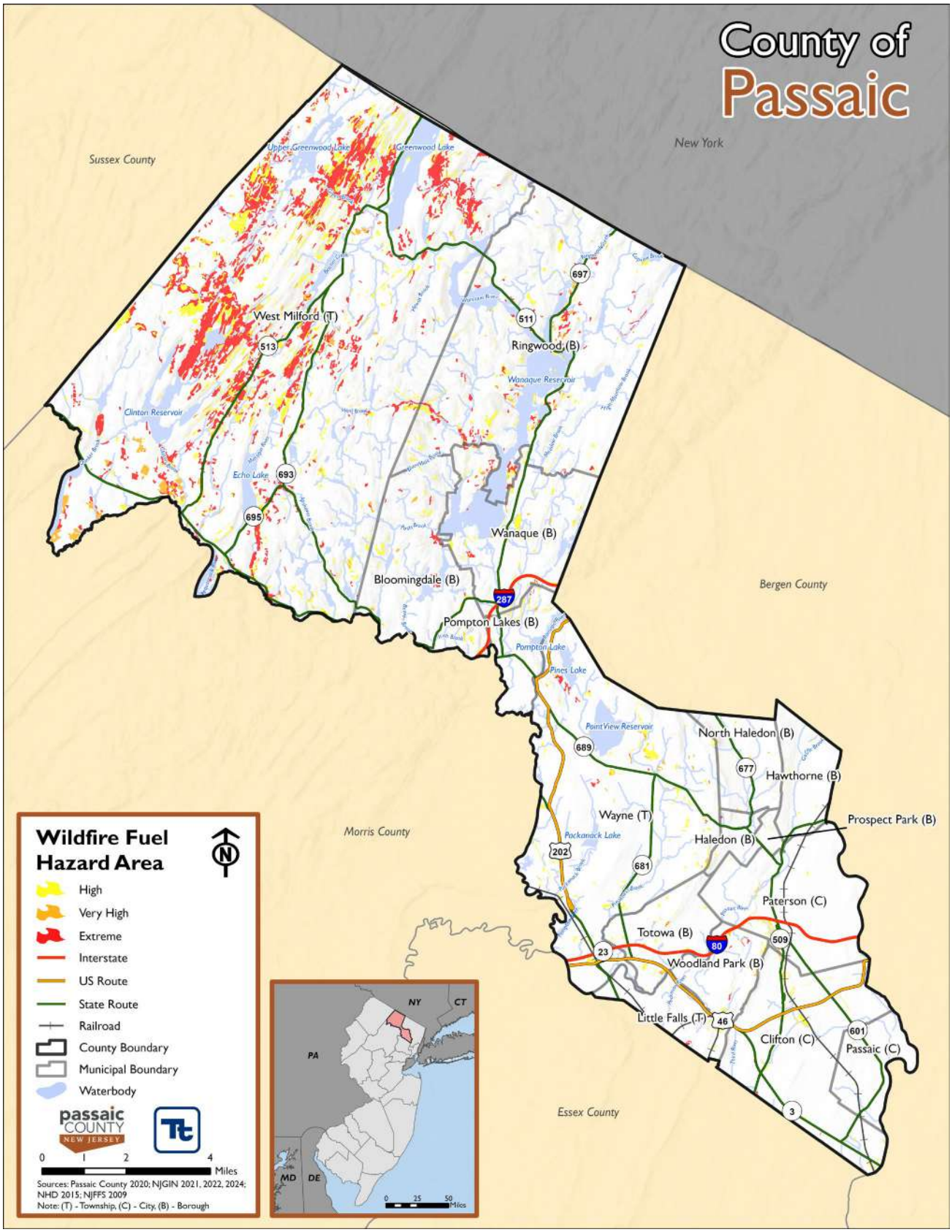


Table 13-1. Land Area In the Extreme, Very High or High Wildfire Fuel Hazard Area in Passaic County

Jurisdiction	Total Land Area (Excluding Water Bodies)(square miles)	Land Area (Excluding Water Bodies) in the Extreme, Very High, or High Wildfire Fuel Hazard Area	
		Total Area (square miles)	% of Jurisdiction Total
Bloomingdale (B)	8.8	0.3	3.0%
Clifton (C)	11.4	0.2	1.6%
Haledon (B)	1.2	<0.1	1.0%
Hawthorne (B)	3.4	<0.1	0.4%
Little Falls (Twp)	2.9	<0.1	1.4%
North Haledon (B)	3.5	<0.1	0.7%
Passaic (C)	3.2	<0.1	0.1%
Paterson (C)	8.7	0.1	1.1%
Pompton Lakes (B)	2.9	0.1	2.2%
Prospect Park (B)	0.5	<0.1	0.6%
Ringwood (B)	25.0	1.2	4.6%
Totowa (B)	4.1	0.1	2.4%
Wanaque (B)	7.9	0.4	4.7%
Wayne (Twp)	23.8	0.6	2.5%
West Milford (Twp)	75.1	12.5	16.7%
Woodland Park (B)	3.1	0.1	2.6%
Passaic County	**185.4**	**15.4**	**8.3%**

Source: NJGIN 2024; NJFFS 2009

Wildfire Hazard Potential

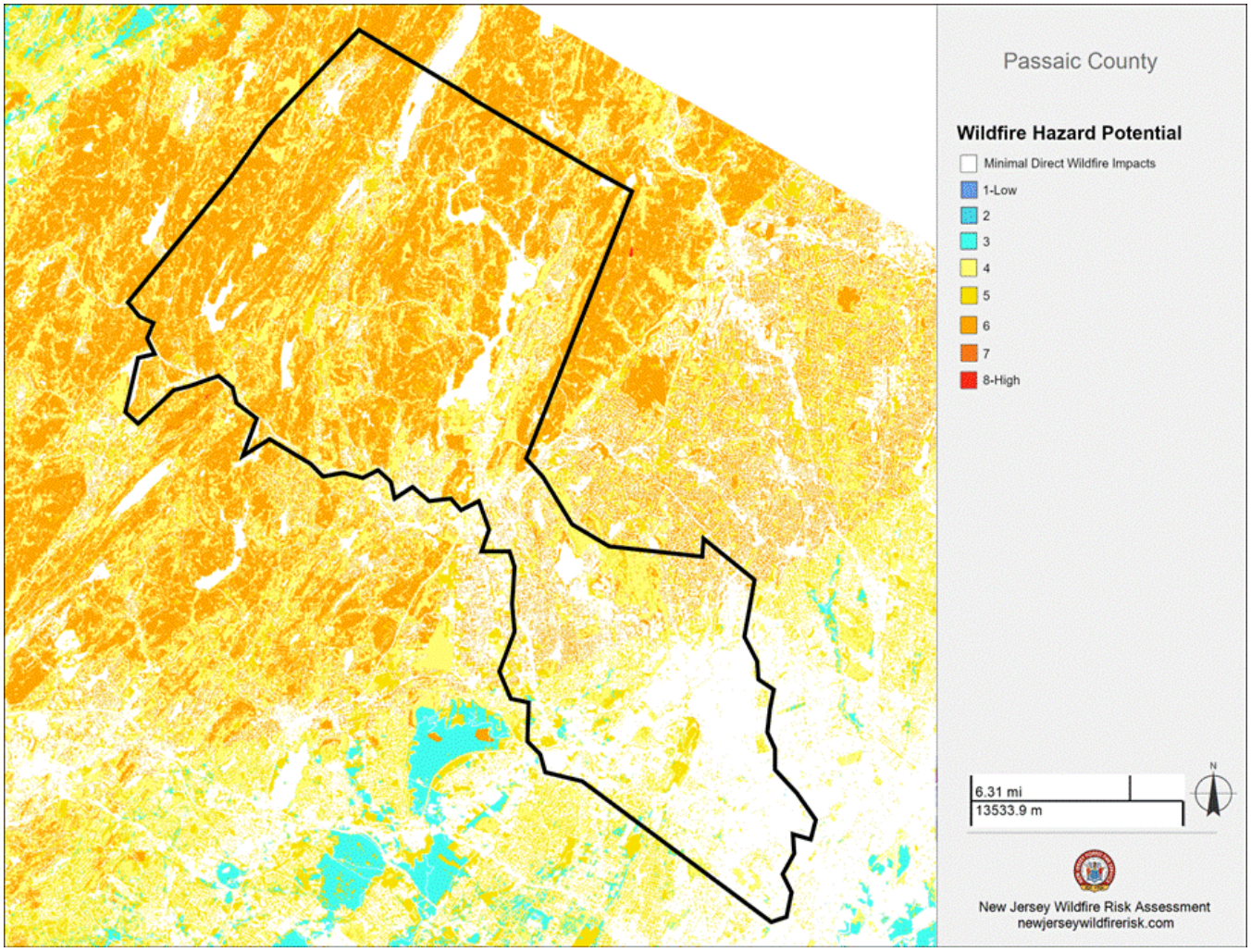
The wildfire hazard potential (WHP) dataset represents an index that quantifies the relative potential for wildfire that may be difficult to control. Figure 13-3 displays the WHP for Passaic County, and Table 13-2 shows the number of acres impacted by each WHP category.

Burn Probability

Burn probability is the annual probability of wildfire burning in a specific location. At the community level, burn probability is averaged where housing units occur. Burn probability is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring, including weather, topography, and ignitions are varied based on patterns derived from observations in recent decades (New Jersey Forest Fire Service 2024).

Burn probability is not predictive of any currently forecasted weather or fire danger conditions. Rather, it is a probability that any specific location may experience wildfire in any given year. It does not indicate anything about the intensity of fire if it occurs (New Jersey Forest Fire Service 2024). Table 13-3 displays Passaic County's Burn Probability; also refer to Figure 13-4.

Figure 13-3. Wildfire Hazard Potential for Passaic County



Source: New Jersey Forest Fire Service 2024

Table 13-2. Wildfire Hazard Potential in Passaic County

	Wildfire Hazard Potential Category	Acres	Percent
	Minimal Direct Wildfire Impacts	43,779	34.4 %
	1-Low	0	0.0 %
	2	0	0.0 %
	3	273	0.2 %
	4	31,683	24.9 %
	5	9,245	7.3 %
	6	42,049	33.1 %
	7	134	0.1 %
	8-High	5	0.0 %
	Total	127,168	100.0 %

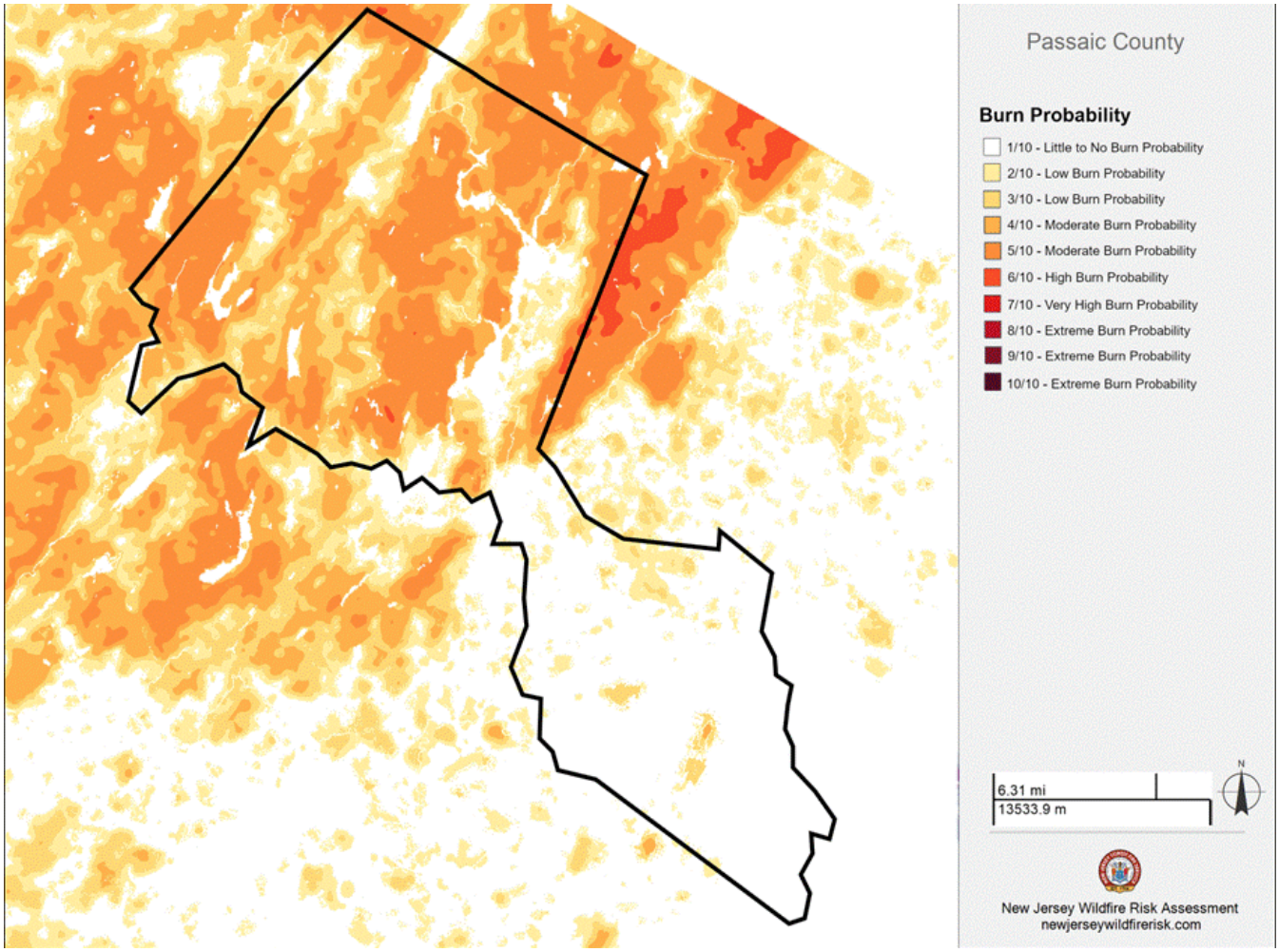
Source: New Jersey Forest Fire Service 2024

Table 13-3. Passaic County Burn Probability

	Burn Probability Category	Acres	Percent
	1/10 - Little to No Burn Probability	50,083	39.4 %
	2/10 - Low Burn Probability	11,900	9.4 %
	3/10 - Low Burn Probability	14,433	11.3 %
	4/10 - Moderate Burn Probability	26,077	20.5 %
	5/10 - Moderate Burn Probability	24,376	19.2 %
	6/10 - High Burn Probability	299	0.2 %
	7/10 - Very High Burn Probability	0	0.0 %
	8/10 - Extreme Burn Probability	0	0.0 %
	9/10 - Extreme Burn Probability	0	0.0 %
	10/10 - Extreme Burn Probability	0	0.0 %
	Total	**127,168**	**100.0 %**

Source: New Jersey Forest Fire Service 2024

Figure 13-4. Passaic County Burn Probability

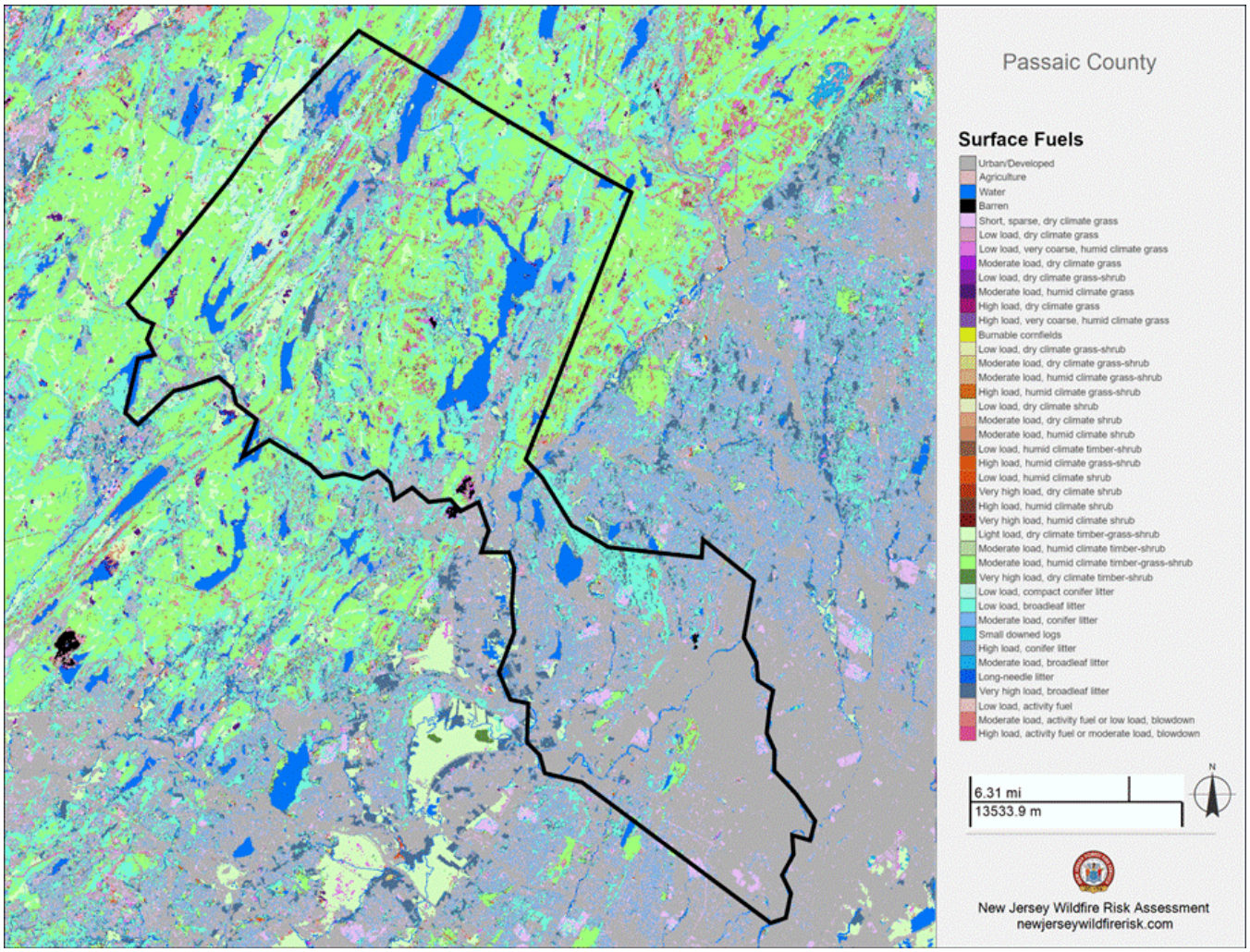


Source: New Jersey Forest Fire Service 2024

Surface Fuel Mapping

Surface fuels are defined by fire behavior fuel models, which are used to compute surface fire behavior characteristics, including rate of spread, flame length, fire line intensity, and other metrics. Surface fuels are generally defined as those that are within 6 feet of the ground. They are categorized as grass, grass/shrub, shrub, timber/understory, timber litter and slash. Figure 13-5 and Table 13-4 present the surface fuel mapping for Passaic County (New Jersey Forest Fire Service 2024).

Figure 13-5. Surface Fuels in Passaic County



Source: New Jersey Forest Fire Service 2024

Table 13-4. Surface Fuels in Passaic County

Surface Fuel Model	Description	Acres	Percent
NB1	Urban/Developed	35,847	28.2 %
NB3	Agriculture	16	0.0 %
NB8	Water	7,842	6.2 %
NB9	Barren	147	0.1 %
GR1	Short, sparse, dry climate grass	3,801	3.0 %
GR2	Low load, dry climate grass	677	0.5 %
GR3	Low load, very coarse, humid climate grass	1,655	1.3 %
GR4	Moderate load, dry climate grass	14	0.0 %
GR5	Low load, dry climate grass-shrub	0	0.0 %
GR6	Moderate load, humid climate grass	498	0.4 %
GR7	High load, dry climate grass	0	0.0 %
GR8	High load, very coarse, humid climate grass	0	0.0 %
AG9	Burnable cornfields	0	0.0 %
GS1	Low load, dry climate grass-shrub	482	0.4 %
GS2	Moderate load, dry climate grass-shrub	157	0.1 %
GS3	Moderate load, humid climate grass-shrub	0	0.0 %
GS4	High load, humid climate grass-shrub	0	0.0 %
SH1	Low load, dry climate shrub	0	0.0 %
SH2	Moderate load, dry climate shrub	75	0.1 %
SH3	Moderate load, humid climate shrub	3,034	2.4 %
SH4	Low load, humid climate timber-shrub	865	0.7 %
SH5	High load, humid climate grass-shrub	0	0.0 %
SH6	Low load, humid climate shrub	276	0.2 %
SH7	Very high load, dry climate shrub	0	0.0 %
SH8	High load, humid climate shrub	0	0.0 %
SH9	Very high load, humid climate shrub	0	0.0 %
TU1	Light load, dry climate timber-grass-shrub	5,197	4.1 %
TU2	Moderate load, humid climate timber-shrub	239	0.2 %
TU3	Moderate load, humid climate timber-grass-shrub	27,897	21.9 %
TU5	Very high load, dry climate timber-shrub	119	0.1 %
TL1	Low load, compact conifer litter	3,465	2.7 %
TL2	Low load, broadleaf litter	21,874	17.2 %
TL3	Moderate load, conifer litter	6,881	5.4 %
TL4	Small downed logs	0	0.0 %
TL5	High load, conifer litter	82	0.1 %
TL6	Moderate load, broadleaf litter	1,366	1.1 %
TL8	Long-needle litter	235	0.2 %
TL9	Very high load, broadleaf litter	4,429	3.5 %
SB1	Low load, activity fuel	0	0.0 %
SB2	Moderate load, activity fuel or low load, blowdown	0	0.0 %
SB3	High load, activity fuel or moderate load, blowdown	0	0.0 %
		Total	**127,170**	**100.0 %**

Source: New Jersey Forest Fire Service 2024

13.1.3 Extent

The extent (that is, magnitude or severity) of wildfires depends on the weather (dryness/drought) and human activity. To determine the potential for wildfires, the NJFFS uses two indices to measure and monitor the dryness of forest fuels and the possibility of fire ignitions becoming wildfires:

- The National Fire Danger Rating System's (NFDRS) **Buildup Index** measures the combined cumulative effects on fuels of daily drying and precipitation, with a 10-day time lag constant. It is a rating of the total amount of fuel available for combustion (NOAA 2020).
- The **Keetch-Byram Drought Index** (KBDI) is based on a daily water balance, where a drought factor is balanced with precipitation and soil moisture (assumed to have a maximum storage capacity of 8 inches) and is expressed in hundredths of an inch of soil moisture depletion (NPS 2023).

Both indices are used for fire preparedness planning, which includes the campfire and burning restrictions, fire patrol assignments, staffing of fire lookout towers, and readiness status for observation and firefighting aircraft (NJDEP 2023).

The NJFFS also uses the NFDRS to measure relative seriousness of burning conditions and threat of fire in the state (Western Fire Chiefs Association 2023). It allows the NJFFS to estimate the daily fire danger for a given area. The NFDRS uses a five-color coded system to report fire potential to the public (USFS n.d.). The NJFFS adapted the color system for New Jersey, as shown in Table 13-5.

Table 13-5 Fire Danger Rating and Color Code

Fire Danger Rating and Color Code	Description
Low (Green)	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (Blue)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (Yellow)	All fine dead fuels ignite readily, and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long-distance spotting and fire whirlwinds when they bum into heavier fuels.

Extreme (Red)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

13.1.4 Previous Occurrences

FEMA Major Disaster and Emergency Declarations

Passaic County has not been included in any major disaster (DR) or emergency (EM) declarations for wildfire-related events (FEMA 2023).

USDA Declarations

The U.S. Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans from the U.S. Department of Agriculture (USDA) to producers suffering losses in those counties and in contiguous counties. Between 2019 and 2023, Passaic County was not included in any USDA wildfire-related agricultural disaster declarations (USDA 2024).

Previous Events

Between August 2019 and November 2024, Passaic County was affected by one wildfire and one occurrence of smoke from fires originating in Canada (NJDEP 2024). The fire in the County occurred in early November 2024, during the 2025 Plan Update process; several wildfires ignited in northern New Jersey due to exceptionally dry conditions. The Jennings Creek Wildfire burned approximately 5,000 acres in the border area between New Jersey and New York and posed substantial challenges to firefighting efforts due to high wind gusts and low humidity (IQAir 2024).Table 13-6 summarizes these events. For events prior to 2019, refer to the 2020 Passaic County HMP.

Table 13-6. Wildfire Events in Passaic County (2019 to 2024)

Event Date	Event Type	FEMA Declaration Number	Passaic County Included in Declaration?	Location Impacted	Description
June 1 to August 21, 2023	Wildfire	N/A	N/A	County-wide	Smoke from fires in Nova Scotia, Canada, produced unsafe air conditions in the Northeast. NJDEP recorded 23 ozone and fine particulate exceedance days between June 1 and August 21 due to the Nova Scotian wildfires.
November 11 to 22, 2024	Wildfire	N/A	N/A	Northern Passaic County	A wildfire ignited near Cannonball Road and Pompton Lake during an exceptionally dry period. The event, called the Jennings Creek wildfire, affected more than 5,000 acres in Passaic County and Orange County, New Jersey. The hilly and steep terrain of Passaic County contributed to the rapid spread, exacerbated by strong winds.

Source: NJDEP 2024

Table 13-7 summarizes NJFFS records of wildfires and prescribed burns in Passaic County between 2018 and 2023. In that time, the County experienced 139 fires with a total area burned of 1,159 acres. During the same timeframe, there were 60 prescribed burns covering 819 acres.

Table 13-7. Wildfires and Prescribed Burns in Passaic County 2018-2023

Year	Wildfires		Prescribed Burns	
	Number of Fires	Acres Burned	Number of Treatments	Acres Treated
2018	8	8	2	129
2019	7	2	1	78
2020	12	27	11	40
2021	21	7	18	131
2022	60	28	14	60
2023	31	1,087	14	381
Total	139	1,159	60	819

Source: New Jersey Forest Fire Service 2024
Note: 2024 data was not available at the time of this update, so it was not reflected in the table.

13.1.5 Probability of Future Occurrences

Probability Based on Previous Occurrences

Information on previous wildfire occurrences in the County was used to calculate the probability of future occurrence of such events, as summarized in Table 9-5. Based on historical records and input from the Steering Committee, the probability of occurrence for wildfire in the County is considered “Frequent.”

Table 13-8. Probability of Future Wildfire Events in Passaic County

Hazard Type	Number of Occurrences Between 2018 and 2023	Percent Chance of Occurring in Any Given Year
Wildfire	139	100%

Source: NOAA-NCEI
Note: Due to limitations in data, not all wildfire events occurring between 1954 and 1996 are accounted for in the tally of occurrences. As a result, the number of hazard occurrences is calculated using the number of occurrences between 1996 and 2023. This table includes events that occurred within Passaic County, so it does not include the air quality impacts from the Canadian wildfires in 2023.

Effect of Climate Change on Future Probability

Wildfire incidents are predicted to increase throughout the United States due to climate change, causing at least a doubling of areas burned within the next century (US EPA 2022). Potential climate change impacts on wildfire risk include the following:

- Higher temperatures are expected to increase the amount of moisture that evaporates from land and water. This can to lead to more frequent and severe droughts, which, in turn, increases the likelihood of wildfires (US EPA 2022).

- A gradual change in temperatures will alter the growing environment of many tree species in New Jersey, reducing the growth of some trees and increasing the growth of others.
- Warmer temperatures may lead to longer dry seasons and multi-year droughts, creating triggers for insects and invasive species. An increase in invasive species, such as the emerald ash borer, can lead to the destruction and death of trees, adding more fuel for fires.
- Increased temperature and change in precipitation will also affect fuel moisture during wildfire season and the length of time during which wildfires can burn during a given year (US EPA 2022).
- A warmer atmosphere holds more moisture, which is one of the key items for triggering a lightning strike. If the frequency of lightning strikes increases, the potential for wildfires from these strikes also increases (National Geographic 2014).

Based on current projections, Passaic County can expect warmer and drier conditions which may increase the frequency and intensity of wildfires.

13.1.6 Cascading Impacts on Other Hazards

Wildfires, particularly large-scale fires, can dramatically alter the terrain and ground conditions, making land already devastated by fire susceptible to floods. Wildfires increase the risk of flooding and mudflow in impacted areas. Normally, vegetation absorbs rainfall, reducing runoff. However, wildfires leave the ground charred, barren, and unable to absorb water, creating conditions ideal for flash flooding and mudflows. Flood risk in these impacted areas remains significantly higher until vegetation is restored, which can take up to five years after a wildfire (FERC 2020).

13.2 VULNERABILITY AND IMPACT ASSESSMENT

A spatial analysis was conducted using NJFFS wildfire fuel hazard data. The hazard area for the analysis was the combination of high, very high, and extreme, wildfire fuel hazard areas. NJFFS GIS data were overlaid on mapping of updated assets (population, building stock, critical facilities, and new development). Assets with their centroid in the hazard area were totaled to estimate the numbers and values at risk.

13.2.1 Life, Health, and Safety

Overall Population

Wildfires have the potential to impact human health and life as follows:

- First responders are exposed to the dangers from the initial incident and after-effects from smoke inhalation and heat stroke.
- Public health impacts associated with wildfire include difficulty in breathing, odor, and reduction in visibility.
- Smoke generated by wildfire consists of visible and invisible emissions that contain particulate matter (soot, tar, water vapor, and minerals), gases (carbon monoxide, carbon dioxide, nitrogen oxides), and toxics (formaldehyde, benzene). Emissions from wildfires depend on the type of fuel, the moisture content of the fuel, the efficiency (or temperature) of combustion, and the weather.

Table 13-9 summarizes the estimated population exposed to the wildfire hazard by municipality. Based on the analysis, 261 residents, or 0.1 percent of the County's population, live in the extreme, high, and very high wildfire

fuel hazard areas. The Township of West Milford has the greatest number of individuals located in these hazard areas (107 persons).

Table 13-9. Population in Wildfire Fuel Hazard Areas

Jurisdiction	Total Population	Population Living in the Wildfire Fuel Hazard Area (High, Very High, Extreme)	
		Number of Persons	% of Jurisdiction Total
Bloomingdale (B)	7,726	0	0.0%
Clifton (C)	89,451	9	<0.1%
Haledon (B)	8,945	5	0.1%
Hawthorne (B)	19,456	0	0.0%
Little Falls (Twp)	14,229	0	0.0%
North Haledon (B)	8,801	13	0.1%
Passaic (C)	70,048	14	<0.1%
Paterson (C)	157,864	0	0.0%
Pompton Lakes (B)	11,052	0	0.0%
Prospect Park (B)	6,299	0	0.0%
Ringwood (B)	11,692	61	0.5%
Totowa (B)	10,975	13	0.1%
Wanaque (B)	11,217	16	0.1%
Wayne (Twp)	54,143	23	<0.1%
West Milford (Twp)	24,797	107	0.4%
Woodland Park (B)	13,291	0	0.0%
Passaic County	519,986	261	0.1%

Source: US Census Bureau 2022; NJOIT 2024; NJFFS 2023; Microsoft 2019

Socially Vulnerable Population

Table 13-10 presents the estimated socially vulnerable populations located within the wildfire fuel hazard area. There are 44 persons over the age of 65 years, 11 persons under the age of 5 years, 5 non-English speakers, 19 persons with a disability, and 8 persons living in poverty located in the hazard area.

Economically disadvantaged populations may be more vulnerable because they lack the financial resources needed to evacuate. The population over age 65 is more vulnerable because they are more likely to need medical attention that may not be available due to isolation during a wildfire event, and they may have more difficulty evacuating. Smoke and air pollution from wildfires can be a severe health hazard for medically sensitive populations, including children, the elderly, and those with respiratory and cardiovascular diseases.

Table 13-10. Estimated Number of Vulnerable Persons Located in the Wildfire Fuel Hazard area

Jurisdiction	Vulnerable Persons Living in the Wildfire Fuel Hazard Area (High, Very High, and Extreme)									
	Persons Over 65	% of Total	Persons Under 5	% of Total	Non-English Speaking Persons	% of Total	Persons with a Disability	% of Total	Persons in Poverty	% of Total
Bloomingdale (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Clifton (C)	1	<0.1%	0	0.0%	1	<0.1%	1	<0.1%	0	0.0%
Haledon (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Hawthorne (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Little Falls (Twp)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
North Haledon (B)	3	0.1%	0	0.0%	0	0.0%	1	0.1%	0	0.0%
Passaic (C)	1	<0.1%	1	<0.1%	3	<0.1%	1	<0.1%	3	<0.1%
Paterson (C)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pompton Lakes (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Prospect Park (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ringwood (B)	10	0.5%	2	0.4%	0	0.0%	4	0.4%	1	0.4%
Totowa (B)	2	0.1%	0	0.0%	0	0.0%	1	0.1%	0	0.0%
Wanaque (B)	3	0.1%	0	0.0%	0	0.0%	2	0.1%	1	0.1%
Wayne (Twp)	4	<0.1%	1	<0.1%	0	0.0%	1	<0.1%	0	0.0%
West Milford (Twp)	20	0.4%	7	0.4%	1	0.4%	8	0.4%	3	0.4%
Woodland Park (B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Passaic County	44	0.1%	11	<0.1%	5	<0.1%	19	<0.1%	8	<0.1%

Source: US Census 2020; NJOIT 2024; Microsoft 2019; NJFFS 2009.

13.2.2 General Building Stock

Buildings in the extreme, very high, or high fuel hazard areas are vulnerable to the wildfire hazard. Buildings constructed of wood or vinyl siding are generally more likely to be impacted by the fire hazard than buildings constructed of brick or concrete. Table 13-11 summarizes the estimated building stock inventory in the defined hazard area by municipality. Approximately 0.3 percent ($265,254,645) of the County's building replacement cost value is located in the wildfire fuel hazard area. The Township of West Milford has the greatest number of buildings in the hazard area (50 structures, 0.5 percent of its total). The Township of Wayne has the highest replacement cost value with an estimate of $130 million, or 0.8 percent of the jurisdictional total.

Table 13-11. Structures Located in the Extreme, Very High, or High Wildfire Fuel Hazard Area

	Jurisdiction Total Buildings		Number of Buildings		Replacement Cost Value (RCV)	
Jurisdiction	Number of Buildings	Replacement Cost Value (RCV)	Count	% of Jurisdiction Total	Value	% of Jurisdiction Total
Bloomingdale (B)	2,406	$1,358,262,927	1	<0.1%	$5,410,510	0.4%
Clifton (C)	20,935	$15,833,226,790	3	<0.1%	$7,499,980	<0.1%
Haledon (B)	1,898	$1,277,354,659	1	0.1%	$267,414	<0.1%
Hawthorne (B)	6,079	$3,946,342,797	0	0.0%	$0	0.0%
Little Falls (Twp)	2,915	$3,414,669,325	3	0.1%	$21,728,104	0.6%
North Haledon (B)	2,952	$2,161,286,853	4	0.1%	$4,834,653	0.2%
Passaic (C)	5,784	$11,383,166,371	1	<0.1%	$632,823	<0.1%
Paterson (C)	16,686	$18,630,913,440	2	<0.1%	$5,021,323	<0.1%
Pompton Lakes (B)	3,271	$1,954,260,257	1	<0.1%	$249,537	<0.1%
Prospect Park (B)	1,016	$492,237,246	0	0.0%	$0	0.0%
Ringwood (B)	4,369	$2,697,179,876	29	0.7%	$24,383,166	0.9%
Totowa (B)	3,765	$5,499,989,017	6	0.2%	$3,450,684	0.1%
Wanaque (B)	3,183	$2,352,891,840	7	0.2%	$28,027,056	1.2%
Wayne (Twp)	15,577	$15,872,014,112	17	0.1%	$130,312,576	0.8%
West Milford (Twp)	9,452	$5,622,763,478	50	0.5%	$32,221,224	0.6%
Woodland Park (B)	2,965	$3,101,377,870	1	<0.1%	$1,215,593	<0.1%
Passaic County	103,253	$95,597,936,857	126	0.1%	$265,254,645	0.3%

Source: NJOIT 2024; Microsoft 2019; RS Means 2024; NJFFS 2009

Table 13-12 lists buildings in the fuel hazard area by occupancy class. Passaic County has 126 buildings at risk: 78 residential, 37 commercial, and 11 government, religious, agricultural, or educational. The Township of West Milford has the highest number of residential buildings in this hazard area (35).

Table 13-12. Buildings in the Wildfire Fuel Hazard Area, by Occupancy Class

Jurisdiction	Buildings in the Wildfire Fuel Hazard Area (High, Very High, and Extreme)			
	Residential	Commercial	Industrial	Other[a]
Bloomingdale (B)	0	0	0	1
Clifton (C)	2	1	0	0
Haledon (B)	1	0	0	0
Hawthorne (B)	0	0	0	0
Little Falls (Twp)	0	2	0	1
North Haledon (B)	4	0	0	0
Passaic (C)	1	0	0	0
Paterson (C)	0	2	0	0
Pompton Lakes (B)	0	1	0	0
Prospect Park (B)	0	0	0	0
Ringwood (B)	21	8	0	0
Totowa (B)	4	2	0	0
Wanaque (B)	4	3	0	0
Wayne (Twp)	6	10	0	1
West Milford (Twp)	35	7	0	8
Woodland Park (B)	0	1	0	0
Passaic County (Total)	78	37	0	11

Source: Microsoft 2019; NJFFS 2009; NJOIT 2024

a. Other = Government, Religion, Agricultural, and Education

13.2.3 Community Lifelines and Other Critical Facilities

Wildfires can impact water supplies throughout the County due to residual pollutants like char or debris landing in water resources, which can clog wastewater pipes and culverts. If a wildfire reaches critical facilities, it can complicate response and recovery efforts. For example, hazardous materials and fuel storage could rupture due to excessive heat, acting as fuel for the fire and causing rapid spreading. Communication facilities could become inoperable, exacerbating communication difficulties, and compromised fire stations would make fire suppression and support services more challenging.

Wildfires may also affect transportation routes, blocking residents and commuters from traveling in the County during a wildfire event because of debris polluting the air, making it difficult to drive, or flames being too close to roadways. Roads and bridges in fire-risk areas are crucial as they provide access to large areas and isolated neighborhoods. Fires can create conditions that block access, isolating residents and emergency service providers.

Table 13-13 summarizes the number of community lifelines in the Passaic County wildfire fuel hazard area. Overall, Passaic County has 21 facilities in wildfire fuel hazard areas, representing 1.6 percent of the County's total facilities. Several jurisdictions have no critical facilities in these hazard areas. The Town of West Milford has the highest number of facilities in hazard areas, totaling 11, which is 9.6 percent of the jurisdiction's facilities.

Table 13-13. Number of Facilities in the Wildfire Fuel Hazard Area

Jurisdiction	Number of Facilities in the Wildfire Fuel Hazard Area, by Lifeline Category									Total Facilities in Hazard Area	
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Jurisdiction Total
Bloomingdale (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Clifton (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Haledon (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Hawthorne (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Little Falls (T)	0	0	0	0	0	0	0	0	0	0	0.0%
North Haledon (B)	0	0	0	0	0	0	1	0	0	1	3.2%
Passaic (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Paterson (C)	0	0	0	0	0	0	0	0	0	0	0.0%
Pompton Lakes (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Prospect Park (B)	0	0	0	0	0	0	0	0	0	0	0.0%
Ringwood (B)	0	0	0	0	0	0	0	1	0	1	1.6%
Totowa (B)	0	0	0	1	1	0	0	0	0	2	2.7%
Wanaque (B)	0	0	0	0	0	0	0	2	0	2	4.0%
Wayne (T)	0	0	0	0	0	1	2	0	0	3	1.8%
West Milford (T)	0	0	0	0	0	0	3	6	2	11	9.6%
Woodland Park (B)	0	0	0	0	0	0	0	1	0	1	2.3%
Passaic County (Total)	0	0	0	1	1	1	6	10	2	21	1.6%

Source: Passaic County HMP 2020; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024; NJFFS 2009

13.2.4 Economy

Wildfire events can have major economic impacts on a community from the initial loss of structures and the subsequent loss of revenue from destroyed businesses. These events may cost thousands of taxpayer dollars to suppress and control and may involve hundreds of operating hours on fire apparatus and thousands of volunteer hours from the volunteer firefighters. There are also many direct and indirect costs to local businesses that excuse volunteers from working to fight these fires.

13.2.5 Natural, Historic and Cultural Resources

Natural

Wildfires are naturally occurring events in the ecosystem cycle, but intense wildfires can burn and kill plant and animal life. Intense fire can also heat narrow and shallow waterways, resulting in damage to aquatic systems. Post-fire runoff polluted with debris and contaminants can be harmful to terrestrial ecosystems and aquatic life (USGS 2023). Intense wildfire events that destroy existing ecosystems can cause an increase in invasive species that may be able to move into an area with a lack of natural competitors (U.S. Department of the Interior 2012).

Historic

Wildfires pose a significant threat to historic resources, with the potential to cause extensive damage or even complete destruction. The impact on historic infrastructure from wildfires is largely dependent on the construction materials used. Many historic structures are constructed from wood, a highly flammable material. Furthermore, these structures were often built before the implementation of strict building codes and before there was a comprehensive understanding of wildfire risks.

Cultural

Wildfires are a major threat to cultural resources, with the potential to cause extensive damage, and in some cases, complete destruction. The potential impacts on cultural resources from wildfire depend heavily on the materials used to construct the facility in which cultural resources are located. In many instances, historic structures house cultural resources and artifacts; many historic structures are made of wood, which is a highly flammable material. Outdoor events are likely to be postponed or cancelled as the result of wildfire conditions, as smoke conditions can have harmful impacts to the human body.

13.3 FUTURE CHANGES THAT MAY AFFECT RISK

13.3.1 Potential or Planned Development

Areas targeted for future growth and development have been identified across the County. Any changes in development can impact the County's risk to the wildfire hazard. Fire suppression capabilities are high at the State and local levels. However, new development and changes in population with a mix of additional structures, ornamental vegetation, and wildland fuels will require continued assessment of the hazard and mitigation risk.

The County should integrate comprehensive wildfire management strategies into existing building codes. These strategies should aim to protect structures from residual impacts such as heat, debris, and char. Given that

residential developments are generally more vulnerable to wildfire damage compared to less susceptible structures like warehouses, commercial buildings, and industrial facilities, it is crucial to prioritize these areas. Additionally, all new developments should be designed with accessible transit routes to facilitate efficient evacuation during wildfire events.

13.3.2 Projected Changes in Population

Changes in population density can significantly impact the number of persons exposed to the wildfire hazard. The New Jersey Department of Labor and Workforce Development produced population projections by County for 2029 and 2034. According to these projections, Passaic County is projected to have an increase in population in the upcoming years. These projections include a population of 536,100 by 2029 and 542,500 by 2034 (State of New Jersey 2017).

13.3.3 Climate Change

Average temperatures are anticipated to increase in New Jersey, therefore, suitability of habitats for specific types of trees potentially changes, altering the fire regime and resulting in more frequent fire events and changes in intensity. Prolonged and more frequent heat waves and droughts have the potential to increase the likelihood of a wildfire igniting. The increased potential combined with stronger winds may make it harder to contain fires and thus increase the County's vulnerability to this hazard.

Climate change will likely alter the atmospheric patterns that affect fire weather. Changes in fire patterns will, in turn, impact carbon cycling, forest structure, and species composition. Climate change associated with warmer temperatures, changes in rainfall, and increased periods of drought may create an atmospheric and fuel environment that is more conductive to large, severe fires (United Nations 2021). Understanding the interactions of climate, fire, and vegetation is essential for addressing issues associated with climate change that include the following (USFS 2011):

- Effects on regional circulation and other atmospheric patterns that affect fire weather
- Effects of changing fire regimes on the carbon cycle, forest structure, and species composition, and
- Complications from land use change, invasive species and an increasing zone of interface between wildland and urban areas.

Changes in climate patterns may impact the distribution and perseverance of insect outbreaks that create dead trees (increase fuel). When climate alters fuel loads and fuel moisture, forest susceptibility to wildfires changes. Climate change also may increase winds that spread fires. Faster fires are harder to contain and are more likely to expand into residential neighborhoods.

14. HAZARD RANKING

Hazard rankings have been used as one of the bases for identifying the jurisdictional hazard mitigation strategies included in Volume II. These rankings may vary among the jurisdictions. For example, a hazard may be ranked low in one municipality but due to differences in vulnerability and impact, be ranked as high for the County or another municipality. Jurisdictional ranking results are presented in each jurisdictional annex in in Volume II.

14.1 HAZARD RANKING METHODOLOGY

Each jurisdiction participating in this HMP has differing levels of vulnerability to and potential impacts from each of the hazards assessed in this plan. Each jurisdiction needs to recognize the hazards that pose the greatest risk to its community and direct its attention and resources accordingly to manage risk and reduce losses. To achieve this, the hazards of concern were ranked using methodologies promoted by FEMA's hazard mitigation planning guidance and input from all participating jurisdictions. Relative ranking scores were generated by FEMA's Hazus risk assessment tool.

14.2 CATEGORIES USED IN RANKING

The ranking methodology is based on four risk assessment categories, with the following scoring parameters defined for each category:

- *Level*—The level is a qualitative description of how each hazard rates in each category (such as low to high, or unlikely to frequent)
- *Benchmark value*—The benchmark values are clearly determinable quantities or descriptions that define which level should apply to each hazard
- *Numeric value*—The numeric value is the hazard's score in each category, based on the assigned level
- *Weighting*—The weighting is a multiplier applied to each hazard's numeric value in each category, to represent the relative importance of the category (the higher the weighting, the more important the category)

The following sections describe the categories and their associated scoring parameters.

14.2.1 Probability of Occurrence

The probability of occurrence of the hazard scenario evaluated was estimated by examining the historical record or calculating the likelihood of annual occurrence. When no scenario was assessed, an examination of the historical record and judgment was used to estimate the probability of occurrence of an event that will impact the County. Table 14-1 summarizes the scoring parameters for probability of occurrence.

The hazard ranking methodology for some hazards of concern is based on a scenario event that only impacts specific areas (such as a floodplain), while others are based on their potential risk to the County as a whole. In order to account for these differences, the quantitative hazard ranking methodology was adjusted using professional judgement and subject-matter input. The limitations of this analysis are recognized given the scenarios do not have the same likelihood of occurrence; nonetheless, there is value in summarizing and comparing the hazards using a standardized approach to evaluate relative risk.

Table 14-1. Values and Weights for Probability of Occurrence

Level	Benchmark Value	Numeric Value	Weighting
Unlikely	A hazard event is not likely to occur or is unlikely to occur with less than a 1 percent annual chance probability.	0	30%
Rare	Between 1 and 10 percent annual probability of a hazard event occurring.	1	
Occasional	Between 10 and 100 percent annual probability of a hazard event occurring.	2	
Frequent	100 percent annual probability; a hazard event may occur multiple times per year.	3	

14.2.2 Consequence

Consequence represents the expected vulnerability and impact associated with the hazard. This is rated for three subcategories: vulnerability of people; vulnerability of property; and economic impacts on the community. A numeric value based on defined benchmarks is assigned for each subcategory, and a factor is applied to those values representing the relative importance of each subcategory. The total numeric value for consequence is the sum of the factored numeric values for each subcategory. Table 14-2 summarizes the scoring parameters for consequence.

Table 14-2. Values and Weights for Consequence

Level	Benchmark Value	Numeric Value	Factor	Weighting
Population (Numeric Value x 3)				**30%**
None	No population vulnerable to the hazard	0	3	
Low	14 percent or less of population is exposed to a hazard with potential for measurable life-safety impact due to its extent and location.	1		
Medium	15 to 29 percent of population is exposed to a hazard with potential for measurable life-safety impact due to its extent and location.	2		
High	30 percent or more of population is exposed to a hazard with potential for measurable life-safety impact, due to its extent and location.	3		
Property (Numeric Value x 2)				
None	No property vulnerable to the hazard	0	2	
Low	Property vulnerability is 14 percent or less of the total number of structures for your community.	1		
Medium	Property vulnerability is 15 to 29 percent of the total number of structures for the community.	2		
High	Property vulnerability is 30 percent or more of the total number of structures for the community.	3		
Economy (Numeric Value x 1)				
None	No estimated loss due to the hazard	0	1	
Low	Loss estimate is 9 percent or less of the total replacement cost for the community.	1		
Medium	Loss estimate is 10 to 19 percent of the total replacement cost for the community.	2		
High	Loss estimate is 20 percent or more of the total replacement cost for the community.	3		

14.2.3 Adaptive Capacity

Adaptive capacity describes a jurisdiction's administrative, technical, planning/regulatory and financial ability to protect from or withstand a hazard event. Mitigation measures that can increase a jurisdiction's capacity to withstand and rebound from events include codes or ordinances with higher standards to withstand hazards due to design or location; deployable resources; or plans and procedures for responding to an event.

A rating of "weak" for adaptive capacity means a jurisdiction does not have the capability to effectively respond, which increases vulnerability. A "strong" adaptive capacity means the jurisdiction does have the capability to effectively respond, which decreases vulnerability. These ratings were assigned using the results of the core capability assessment, with input from each jurisdiction. Table 14-3 summarizes the scoring parameters for adaptive capacity.

Table 14-3. Values and Weights for Adaptive Capacity

Level	Benchmark Value	Numeric Value	Weighting
Weak	Weak, outdated, or inconsistent plans, policies, codes, or ordinances in place; no redundancies; limited to no deployable resources; limited capabilities to respond; long recovery.	1	30%
Moderate	Plans, policies, codes/ordinances in place and meet minimum requirements; mitigation strategies identified but not implemented on a widespread scale; county/jurisdiction can recover but needs outside resources; moderate county/Jurisdiction capabilities.	0	
Strong	Plans, policies, codes/ordinances in place and exceed minimum requirements; mitigation/protective measures in place; county/jurisdiction has ability to recover quickly because resources are readily available, and capabilities are high.	-1	

14.2.4 Climate Change

Current climate change projections were evaluated as part of the hazard ranking to account for potential increases in severity or frequency of the hazard. This is important because the hazard ranking helps guide and prioritize the mitigation strategy as a long-term future vision for mitigating the hazards of concern. The potential impacts that climate change may have on each hazard of concern are discussed in the risk assessment chapters for each hazard. Table 14-4 summarizes the scoring parameters for climate change. The benchmark values are similar to confidence levels outlined in the National Climate Assessment 2023.

Table 14-4. Values and Weights for Climate Change

Level	Benchmark Value	Numeric Value	Weighting
Low	No local data are available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence).	1	10%
Medium	Studies and modeling projections indicate a potential for exacerbated conditions due to climate change; confidence level is medium to high (moderate evidence).	2	
High	Studies and modeling projections indicate exacerbated conditions and increased future risk due to climate change; very high confidence level (strong evidence, well documented, and acceptable methods).	3	

14.3 TOTAL RANKING SCORE

The total ranking score based on the categories described above is calculated using the following equation:

Risk Ranking Score Equation

Ranking Score= [(Consequence on Population x 3) + (Consequence on Property x 2) + (Consequence on Economy x 1) x 0.3] + [Adaptive Capacity x 0.3] + [Climate Change x 0.1] + [Probability of Occurrence x 0.3]

Using this equation, the highest possible ranking score is 6.9. The higher the number, the greater the relative risk. Based on the score for each hazard, a hazard ranking is assigned to each hazard of concern as follows:

- Low = Values less than 3.9
- Medium = Values between 3.9 and 4.9
- High = Values greater than 4.9.

All Planning Partners applied the same methodology to develop the hazard rankings to ensure consistency in the overall ranking of risk. However, each jurisdiction had the ability to alter rankings based on local knowledge and experience in handling each hazard.

14.4 HAZARD RANKING RESULTS

Using the methodology described above, the hazard ranking for the identified hazards of concern was determined for each planning partner. The hazard ranking for Passaic County is detailed in the following tables that present the step-wise process for the ranking:

- Table 14-5 shows the unweighted numeric values assigned for the probability of occurrence for each hazard.
- Table 14-6 shows the numeric values assigned for each subcategory of consequence for each hazard. Results are shown for applying the subcategory factors, but not the category-wide weighting.
- Table 14-7 shows the unweighted numeric values assigned for adaptive capacity and climate change for each hazard.
- Table 14-8 shows the total weighted hazard ranking scores for each hazard of concern.

The countywide hazard ranking includes the entire planning area and may not reflect the highest risk for all Planning Partners. The overall ranking for each jurisdiction is included in Table 14-9 and in the annexes in Volume II.

Table 14-5. Probability of Occurrence for Hazards of Concern for Passaic County

Hazard of Concern	Probability	Numeric Value
Dam Failure	Rare	1
Drought	Occasional	2
Extreme Temperature	Occasional	2
Flood	Occasional	2
Geological Hazards	Rare	1
Severe Weather	Frequent	3
Severe Winter Weather	Frequent	3
Wildfire	Occasional	2

Table 14-6. Consequence Rating for Hazards of Concern for Passaic County

Hazard of Concern	Population			Property			Economy			Total Impact Rating (Population + Property + Economy)
	Consequence	Numeric Value	Multiplied by Factor (3)	Consequence	Numeric Value	Multiplied by Factor (2)	Consequence	Numeric Value	Multiplied by Factor (1)	
Dam Failure	Medium	2	6	Medium	2	4	Medium	2	2	12
Drought	Medium	2	6	Low	1	2	Medium	2	2	10
Extreme Temperature	High	3	9	Low	1	2	Low	1	1	12
Flood	Low	1	3	Low	1	2	Low	1	1	6
Geological Hazards	Low	1	3	Low	1	2	Medium	2	2	7
Severe Weather	Low	1	3	Medium	2	4	Medium	2	2	9
Severe Winter Weather	Low	1	3	Medium	2	4	Medium	2	2	9
Wildfire	Low	1	3	Medium	2	4	Medium	2	2	9

Table 14-7. Adaptive Capacity and Climate Change Ratings for Hazards of Concern for Passaic County

Hazard of Concern	Adaptive Capacity		Climate Change	
	Level	Numeric Value	Level	Numeric Value
Dam Failure	Moderate	0	Medium	2
Drought	Moderate	0	High	3
Extreme Temperature	Moderate	0	High	3
Flood	Moderate	0	High	3
Geological Hazards	Moderate	0	Medium	2
Severe Weather	Moderate	0	High	3
Severe Winter Weather	Moderate	0	High	3
Wildfire	Strong	-1	High	3

Table 14-8. Total Hazard Ranking Scores for the Hazards of Concern for Passaic County

Hazard of Concern	Probability x 30%	Total Consequence x 30%	Adaptive Capacity x 30%	Changing Future Conditions x 10%	Total Hazard Ranking Score
Dam Failure	0.3	3.6	0	0.2	4.1
Drought	0.6	3.0	0	0.3	3.9
Extreme Temperature	0.6	3.6	0	0.3	4.5
Flood	0.6	1.8	-0.3	0.3	2.4
Geological Hazards	0.3	1.8	0	0.2	2.3
Severe Weather	0.9	2.7	0	0.3	3.9
Severe Winter Weather	0.9	2.7	0	0.3	3.9
Wildfire	0.6	2.7	-0.3	0.3	3.3

Note: Low (yellow) = Values less than 3.9; Medium (orange) = Values between 3.9 and 4.9; High (red) = Values greater than 4.9

Table 14-9. Overall Ranking of Hazards by Jurisdiction

	Dam Failure	Drought	Extreme Temperature	Flood	Geological Hazards	Severe Weather	Severe Winter Weather	Wildfire
Borough of Bloomingdale	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
City of Clifton	Low	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Haledon	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Hawthorne	Low	Medium	Medium	Medium	Low	Medium	Medium	Low
Township of Little Falls	Medium	Medium	Medium	High	Low	Medium	Medium	Low
Borough of North Haledon	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
City of Passaic	Low	Medium	Medium	Medium	Low	Medium	Medium	Low
City of Paterson	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Pompton Lakes	Medium	Medium	Medium	High	Medium	Medium	Medium	Low
Borough of Prospect Park	Low	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Ringwood	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Totowa	Low	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Wanaque	Medium	Medium	Medium	Medium	Low	Medium	Medium	Medium
Township of Wayne	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
Township of West Milford	Medium	Medium	Medium	Medium	Low	Medium	Medium	Low
Borough of Woodland Park	Low	Medium	Medium	Medium	Low	Medium	Medium	Low
Passaic County	Medium	Medium	Medium	High	Low	Medium	Medium	Low

Note: Low (yellow) = Values less than 3.9; Medium (orange) = Values between 3.9 and 4.9; High (red) = Values greater than 4.9

15. CAPABILITY ASSESSMENT

A capability assessment is an inventory of a community's missions, programs, and policies and an analysis of its capacity to carry them out (FEMA 2003). This assessment is an integral part of the planning process. It enables identification, review, and analysis of current local and state programs, policies, regulations, funding, and practices that could either facilitate or hinder mitigation. Through assessing its capabilities, a jurisdiction learns how or whether it can implement certain mitigation actions by determining the following:

- Limitations that may exist on undertaking actions
- The range of local and/or state administrative, programmatic, regulatory, financial, and technical resources available to assist in implementing their mitigation actions
- Actions that are infeasible because they are outside the scope of current capabilities
- Types of mitigation actions that may be technically, legally, administratively, politically, or fiscally challenging or infeasible
- Opportunities to enhance local capabilities to support long-term mitigation and risk reduction

This chapter presents a summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county, local) that reduce hazard risks and support hazard mitigation within the planning area. These capabilities are presented in three categories:

- Planning and regulatory capabilities
- Administrative and technical capabilities
- Fiscal capabilities

Each Planning Partner's annex in Volume II also includes a capability assessment specific to those jurisdictions. In addition to the above categories, the annexes review capabilities in the more localized categories of adaptive capacity and education and outreach.

15.1 CAPABILITY ASSESSMENT PROCESS

Jurisdiction specific capabilities are assessed in each jurisdictional annex in Volume II. All participating jurisdictions were tasked with developing or updating their capability assessment for this update, evaluating the effectiveness of their capabilities in supporting hazard mitigation and identifying opportunities to enhance local capabilities. Each jurisdiction identified how it has integrated hazard mitigation into its existing planning, regulatory, and operational/administrative framework and how it intends to promote ongoing integration.

The contracted consultant met with Passaic County and each jurisdiction virtually to review the capability assessment from the 2020 HMP and update accordingly. The consultant also reviewed plans, codes, and ordinances to enhance the information provided by the jurisdictions.

15.2 PLANNING AND REGULATORY CAPABILITIES

Planning and regulatory capabilities are based on ordinances, policies, local laws, state statutes, plans, and programs that relate to managing growth and development. Planning and regulatory capabilities refer not only to current plans and regulations, but also to the jurisdiction's ability to change and improve those plans and regulations

as needed. This section summarizes planning and regulatory capabilities for Passaic County. Further information is provided in the jurisdictional annexes in Volume II.

15.2.1 Federal

National Flood Insurance Program

The U.S. Congress established the National Flood Insurance Program (NFIP) with the passage of the National Flood Insurance Act of 1968 (FEMA's 2002 NFIP: Program Description). The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. The flood hazard profile in Chapter 9 provides further information on the NFIP as implemented in Passaic County.

There are three components to the NFIP: flood insurance, floodplain management and flood hazard mapping. Communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. Flood insurance is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Flood damage in the U.S. is reduced by nearly $1 billion each year through communities implementing sound floodplain management requirements and property owners purchasing flood insurance. Additionally, buildings constructed in compliance with NFIP building standards suffer approximately 80 percent less damage annually than those not built in compliance (American Institutes for Research 2006).

All municipalities in Passaic County actively participate in the NFIP. As of 2024, there were 2,150 NFIP policies in Passaic County. There have been 9,538 claims made, totaling over $267 million for damages to structures and contents. There are 870 NFIP Repetitive Loss (RL) properties in the County. Further details on the County's flood vulnerability may be found in the flood hazard profile in Chapter 9.

Municipal compliance with the NFIP is described in each of the jurisdictional annex in Volume II (Jurisdictional Annexes). The County's municipalities have been compliant with the NFIP. To enhance their flood damage prevention programs and enhance compliance with the NFIP in the future, several municipalities propose actions in their mitigation strategies to ensure that their floodplain administrators complete training on floodplain management and the NFIP, to update their flood damage prevention ordinance if they have one already, or to adopt one of FEMA's code-coordinated ordinances for flood damage prevention if they do not already have one. All municipalities have included an action to improve their procedures for determining substantial damage and to develop substantial damage response plans if they do not currently have one. In addition, Passaic County's mitigation strategy (see Chapter 16) includes an action to encourage and empower municipalities to participate in FEMA's Community Rating System. Additional information on the NFIP program and its implementation throughout the County may be found in the flood hazard profile (Chapter 9).

The state and municipalities within it may adopt higher regulatory standards when implementing the provisions of the NFIP. Specifically identified are the following:

- **Base Flood Elevation (BFE)**: The elevation of surface water due to flooding that has a 1 percent chance of being equaled or exceeded in any given year.
- **Freeboard:** The state's minimum design base flood elevation is 3 feet above the designated base flood elevation. Additional revisions to the Flood Hazard Area Control Act Rules that are still in development may define the regulatory tidal elevation as 5 feet above the base flood elevation. Any municipal or other entity in New Jersey vested with authority to adopt rules and regulations concerning the development and use of

land may adopt requirements more restrictive than those contained in the state rules and regulations. Communities are encouraged to adopt standards that exceed NFIP requirements.

- **Cumulative Substantial Improvements/Damages:** The NFIP allows improvements valued at up to 50 percent of the building's pre-improvement value to be permitted without meeting the flood protection requirements. Over the years, a community may issue a succession of permits for different repairs or improvement to the same structures. This can greatly increase the overall flood damage potential for structures within a community. The community may wish to deem "substantial improvement" cumulatively so that once a threshold of improvement within a certain length of time is reached, the structure is considered to be substantially improved and must meet flood protection requirements.

NFIP Community Rating System

As an additional component of the NFIP, the Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance (FEMA 2024).

As of 2024, five communities in Passaic County participate in the CRS program: Borough of Bloomingdale, Township of Little Falls, Borough of Pompton Lakes, Township of Wayne, and Borough of Woodland Park (see Table 15-1). Passaic County is exploring the program requirements of the CRS through technical expertise and assistance to guide interested municipalities through the application process.

Table 15-1. Community Rating System Participation in Passaic County

Jurisdiction	CRS Entry Date	Current Class	Premium Discount
Bloomingdale (B)	October 10, 2016	8	10 percent
Little Falls (Twp)	May 1, 2010	5	25 percent
Pompton Lakes (B)	October 1, 2011	5	percent
Wayne (Twp)	October 1, 1991	7	15 percent
Woodland Park (B)	October 1, 2016	8	10 percent

Source: NJOEM 2024

Risk Rating 2.0: Equity in Action

FEMA's Risk Rating 2.0: Equity in Action program considers specific characteristics of a building to provide individualized and equitable flood insurance rates. The new rating methodology considers frequency of flooding, multiple flood types, proximity to flood sources, and building characteristics such as first floor heights and costs to rebuilt. The update was rolled out in October 2021 through April 2022, and as of April 1, 2023 has been fully implemented (FEMA 2022). According to a July 10, 2023 article by NJ Spotlight News, 12,000 NFIP flood insurance policies in the State of New Jersey have been dropped since Risk Rating 2.0 became effective. The drop in flood insurance coverage has been attributed to rising flood insurance costs based on Risk Rating 2.0's new flood insurance calculations (NJ Spotlight News 2023). Homeowners that elect to drop NFIP insurance policies will no longer have access to Flood Mitigation Assistance (FMA) funding for future mitigation efforts. At the time of this HMP update, it is difficult to determine what the aggregate cost increase through Risk Rating 2.0 will be on post-mitigation properties.

Across the country, official are finding it to be increasingly difficult to communicate the benefits of mitigation to some property owners where insurance rates are likely to stay high even after mitigation due to factors such as proximity to flood sources and frequency of flooding. Continued shifts in flood insurance costs, coverage, impacts to mitigation of flood prone properties, and potential updates to Risk Rating 2.0 will be monitored by Passaic County throughout the period of performance of the 2025 HMP.

Risk Mapping, Assessment, and Planning (Risk MAP)

FEMA works with federal, state, tribal, and local partners across the nation to identify flood risk and promote informed planning and development practices to help reduce that risk through the Risk MAP program. Risk MAP provides high-quality flood maps and information, tools to better assess the risk from flooding, and planning and outreach support to communities to help them take action to reduce (or mitigate) flood risk. Each Risk MAP flood risk project is tailored to the needs of each community and may involve different products and services.

According to the Risk MAP Progress interactive map available online at the time of this plan update, there are numerous active Risk MAP projects taking place throughout New Jersey (FEMA n.d.). FEMA coordinates and works directly with municipal floodplain managers during the Risk MAP project process. The State NFIP Coordinator is kept apprised of project activities and consults as needed.

Since 2006, the New Jersey Department of Environmental Protection (NJDEP) and FEMA have maintained a Cooperating Technical Partnership Agreement (CTP) to perform map production together to build the next generation of FEMA and State flood mapping. New Jersey will continue to take the lead in prioritizing projects, coordinating available data sources, conducting outreach, and all essential components of data production and map adoption. Moving forward, NJDEP will be developing new floodplain data, producing digital Flood Insurance Rate Maps (FIRMs) and post-preliminary processing (NJDEP 2023).

New Jersey will integrate its mapping program with the FEMA program. This integration hinges on creating FEMA FIRMs for New Jersey, which delineate the New Jersey Flood Hazard Area Design Flood (NJFHADF) on the mapping and plots the NJFHADF water levels on the stream profiles, the State's regulatory standard. The NJFHADF is based on the 100-year flood discharge plus 25 percent. The State is obligated to compare the State flood elevations and floodway with the FEMA data for higher flood levels and wider floodways. By including the NJFHADF on the FIRM, the State would be able to use the FEMA FIRMs as the single source for both federal and state floodplain management, freeing up staff resources and reducing errors (NJDEP 2023).

Disaster Mitigation Act of 2000 (DMA 2000)

The DMA is the current federal legislation addressing hazard mitigation planning. DMA 2000 provides an opportunity for states, tribes, and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Act) by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of mitigation plan requirements (Section 322). This new section emphasizes the need for state, tribal, and local entities to closely coordinate mitigation planning and implementation efforts. It emphasizes planning for disasters before they occur. It specifically addresses planning at the local level, requiring plans to be in place before Hazard Mitigation Assistance grant funds are available to communities. HMPs designed to meet the requirements of DMA will remain eligible for future FEMA Hazard Mitigation Assistance funds. This plan is designed to meet the requirements of DMA, improving eligibility for future hazard mitigation funds.

The New Jersey Office of Emergency Management (NJOEM) Mitigation Unit is the lead agency within New Jersey to promote mitigation planning. The law sets forth a more granular review of mitigation planning. Once approved,

the applicant is eligible to apply for federal funds for mitigation of hazards. The rules provide detailed guidance on what applicants should include in a plan.

Code of Federal Regulations, Standard State Mitigation Plans (44 CFR PART 201.4)

FEMA has prepared policies and procedures for FEMA's review and approval of state and local emergency all-hazard mitigation plans.

The State Hazards Mitigation Plan provides actions based on risk assessments and capabilities of the State to achieve and fund mitigation activities based on those actions. Both the law and regulations have encouraged the counties to prepare plans.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Act provides an orderly and continuing means of assistance by the federal government to state and local governments in carrying out their responsibilities to alleviate the suffering and damage that results from disasters. The provisions of the Act include (1) revising and broadening the scope of existing disaster relief programs; (2) encouraging the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by state and local governments; (3) achieving greater coordination and responsiveness of disaster preparedness and relief programs; (4) encouraging individuals, and state and local governments to protect themselves by obtaining insurance coverage to supplement or replace governmental assistance; (5) encouraging hazard mitigation measures to reduce losses from disasters, including development of land-use and construction regulations; and (6) providing federal assistance programs for both public and private losses sustained in disasters.

From a mitigation perspective of the Act, the NJOEM Mitigation Unit is the lead agency that reviews, submits, and administers federal funding to programs that mitigate hazards. These programs help find projects that are cost beneficial to help reduce damages from hazards.

Disaster Recovery Reform Act

This bill amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) to modify the Pre-disaster Hazard Mitigation Grant Program to permit the use of technical and financial assistance to establish and carry out enforcement activities to implement codes, specifications, and standards that incorporate the latest hazard-resistant designs; direct the President to establish a National Public Infrastructure Pre-disaster Mitigation Fund; authorize the President's contribution to the cost of hazard mitigation measures to be used to increase resilience in any area affected by a major disaster; and direct the Federal Emergency Management Agency (FEMA) to issue a final rulemaking that defines the terms "resilient" and "resiliency.

From a mitigation perspective of the Act, the NJOEM Mitigation Unit is the lead agency that reviews, submits, and administers federal funding to programs that mitigate hazards. These programs help find projects that are cost beneficial to help reduce damages from hazards.

Presidential Policy Directive 8 (PPD-8)

PPD-8 requires that a Threat Hazard Identification and Risk Assessment (THIRA) be developed for a state to remain eligible for Homeland Security Grant Program (HSGP) and Emergency Management Program Grant (EMPG) funding.

The New Jersey Office of Homeland Security and Preparedness is the lead agency in preparing the State's THIRA. The fiscal year 2013 NJ State THIRA and Strategic Planning Report was submitted to FEMA Region II in December 2013.

Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004

The Flood Insurance Reform Act of 2004 amended the 1994 National Flood Insurance Reform Act of 1968 to reduce losses to properties for which repetitive flood insurance claim payments have been made. This Act established a program for mitigation of severe repetitive loss properties and gave FEMA the authority to fund mitigation activities for individual repetitive loss claims properties. The Act provides additional coverage for compliance with land-use and control measures.

The NJDEP Flood Control Division is the lead coordinator of New Jersey's NFIP efforts. NJOEM Mitigation Unit is the agency working with New Jersey communities with severe repetitive loss properties. This Statute helps New Jersey residents with affordable flood insurance and gives additional tools to the states and communities to mitigate severe repetitive loss properties.

Biggert Waters National Flood Insurance Reform Act of 2012

Under the Biggert-Waters National Flood Insurance Reform Act of 2012, long-term changes to the National Flood Insurance Program have been adopted that have increased rates overall to reflect the flood risk more accurately to buildings in flood hazard areas. This has significantly influenced construction and reconstruction within flood hazard areas.

Property owners are encouraged to consider long-term insurance costs when undertaking reconstruction or elevation of damaged buildings. An investment to reconstruct the lowest floor of a building an additional foot or two higher today may translate into significant future flood insurance savings.

Homeowner's Flood Insurance Affordability Act

This 2014 law repeals and modifies certain provisions of the Biggert-Waters Flood Insurance Reform Act, which was enacted in 2012, and makes additional program changes to other aspects of the program not covered by that Act. The new law lowers the recent rate increases on some policies, prevents some future rate increases, and implements a surcharge on all policyholders. The Act also repeals certain rate increases that have already gone into effect and provides for refunds to those policyholders. The Act also authorizes additional resources for the National Academy of Sciences (NAS) to complete the affordability study.

FEMA, Congress, the private Write Your Own insurance companies, and other stakeholders work together to implement these Congressionally mandated reforms and to work toward shared goals of helping families maintain affordable flood insurance, ensuring the financial stability of the NFIP, and reducing the risks and consequences of flooding nationwide.

Emergency Support Function (ESF) #14, Long-Term Recovery Planning

Long-Term Community Recovery provides a mechanism for coordinating Federal support to State, tribal, regional, and local governments, nongovernmental organizations (NGOs), and the private sector to enable community recovery from the long-term consequences of extraordinary disasters. ESF #14 accomplishes this by identifying and facilitating availability and use of sources of recovery funding and providing technical assistance (such as impact analyses) for community recovery and recovery planning (FEMA 2008).

ESF #14 may be activated for incidents that require a coordinated Federal response to address significant long-term impacts (e.g., impacts on housing, government operations, agriculture, businesses, employment, community infrastructure, the environment, human health, and social services) to foster sustainable recovery (FEMA 2008).

Actions coordinated under ESF #14 include pre-incident planning and coordination, immediately prior to the incident, post-event planning, and operations (FEMA 2008).

Through ESF 14, Long-Term Recovery Planning, NJOEM works with the Office of Homeland Security and Preparedness to have a plan for long-term planning and recovery prior to a disaster or emergency. One of the areas of planning includes mitigation. This coordination allows for another Statewide plan to incorporate mitigation principles and planning.

Post-Hurricane Sandy Transportation Resilience Study of New York, New Jersey, and Connecticut

This Post-Sandy Study was part of a series of research projects funded by FHWA with a goal of mainstreaming the consideration of climate vulnerability and risk in transportation decision making. The Post-Sandy Study was intended to inform the collective understanding on how to integrate climate resilience at multiple levels: in planning, during the project development process, and as part of operations and maintenance strategies, including asset management and emergency management.

U.S. Army Corps of Engineers

Under Section 404(e) of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) can issue general permits to authorize activities that have only minimal individual and cumulative adverse environmental effects. A nationwide permit (NWP) is a general permit that authorizes activities across the country unless a district or division commander revokes the nationwide permit in a state or other geographic region. There are 54 nationwide permits, and they authorize a wide variety of activities, including linear transportation projects, bank stabilization activities, residential development, commercial and industrial developments, aids to navigation and certain maintenance activities (USACE 2017).

There are three types of USACE permits: standard, nationwide (described above), and regional. Standard permits are individual permits that involve full public interest review of an individual permit application and includes the issuance of a public notice for any project that does not meet the terms and conditions of an NWP or a Letter of Permission (LOP). Regional general permits are for small, specialized projects.

15.2.2 State

Municipal Land Use Law

The State of New Jersey Municipal Land Use Law (MLUL; P.L.1975, c. 291, s. 1, effective August 1, 1976) is the legislative foundation for the land use process in the State of New Jersey, including decisions by Planning Boards and Zoning Boards of Adjustment. It defines the powers and responsibilities of boards and is essential to their functions and decisions. It also provides the required components of a municipal master plan.

Every municipal agency must adopt and can amend reasonable rules and regulations consistent with this act or with any applicable ordinance for the administration of its functions, powers, and duties. These plans help jurisdictions review their land use plans and policies with public participation.

In 2017 the MLUL was amended to add a new subparagraph (f) to New Jersey Statutes Annotated (NJSA) 40-55D-28.b.(2), which requires that any land use plan element adopted after the amendment include a statement of strategy concerning smart growth, storm resiliency, and environmental sustainability. This section of the MLUL was further amended on February 4, 2021, to require that any land use plan element of the master plan adopted or amended after that date must include a climate change-related hazard vulnerability assessment, which shall include an analysis of current and future threats to and vulnerabilities of the municipality associated with climate change-related hazards, including many of those identified in this Hazard Mitigation Plan update. The Municipal Land Use Law requires that each municipality prepare a comprehensive plan and update that plan every 10 years.

New Jersey Soil Erosion and Sediment Control Act

New Jersey has 15 soil conservation districts, following county boundaries that implement the New Jersey Soil Erosion and Sediment Control Act (NJSA 4:24), which governs certain aspects of new development.

Uniform Construction Code

Building codes mandate best practices and technology, much of which is designed to reduce or prevent damage from occurring when structures are under stress.

The Uniform Construction Code (UCC) adopts up-to-date building codes as its Building Subcode and One- and Two-Family Subcode. These Subcodes contain requirements that address construction in both A and V flood zones. Also, all new construction is required to comply with the UCC for flood zone construction.

New Jersey has enacted legislation directing the Department of Community Affairs (NJ DCA) to adopt a radon hazard code or revise the State building code to establish standards to ensure that schools and residential buildings in tier one areas, as defined by the State, are constructed in a manner that minimizes radon gas entry and facilitates any necessary subsequent remediation (see NJSA 52:27D-123).

The Department then adopted a radon hazard sub-code which does not reference existing model standards or guidance, but which sets forth the basic requirements for a passive sub-slab or sub-membrane depressurization system. See New Jersey Administrative Code (NJAC) 5:23-10.4. The radon control standards and procedures apply to new residential construction (and school construction) in “tier one” areas, as defined by the State, and Appendix 10-A of the sub-code lists the specific municipalities that are designated as tier one areas.

All incorporated municipalities in New Jersey have adopted standardized building codes (IBC 2021 NJ edition).

Growth Management Policy

Land preservation and recreation comprise one of the cornerstones of New Jersey’s smart growth policy. The New Jersey Statewide Comprehensive Outdoor Recreation Plan provides Statewide policy direction to the State, local governments, and conservation organizations in the preservation of open space and the provision of public recreation opportunities. The State Plan was prepared and adopted by the State Planning Commission according to the requirements of the State Planning Act of 1985 as amended (NJSA 52:18A-196 et seq.) to serve as an instrument of State policy to guide State agencies and local government in the exercise of governmental powers regarding planning, infrastructure investment and other public actions and initiatives that affect and support economic growth and development in the State.

The State Planning Act has enhanced the traditionally limited role of county land-use planning and control. The Act also provides tools for municipalities when preparing their master land use plans and better opportunity for a comprehensive approach to planning so not to harm or be in conflict with neighboring municipalities’ plans.

The State of New Jersey's smart growth is growth that serves the environment, the economy, and the community equally. It attempts to concentrate development into already-existing communities when possible, and it addresses the inherent interconnections between environmental protection, social equity, public health, and economic sustainability.

Flood Hazard Area Control Act (NJSA 58:16A-52) Flood Hazard Area Control Regulation (NJAC 7:13)

New Jersey enacted this law to delineate and mark flood hazard areas; authorize NJDEP to adopt land-use regulations for the flood hazard area; control stream encroachments; coordinate effectively the development, dissemination, and use of information on floods and flood damages that may be available; authorize the delegation of certain administrative and enforcement functions to county governing bodies; and integrate the flood control activities of the municipal, county, State, and federal governments. The intent of the regulations is to minimize potential on- and off-site damage to public or private property caused by development that, at times of flood, subject structures to flooding and increase flood heights and/or velocities both upstream and downstream. These rules are also intended to safeguard the public from the dangers and damages caused by materials being swept onto nearby or downstream lands, to protect and enhance the public's health and welfare by minimizing the degradation of water quality from point and non-point pollution sources, and to protect wildlife and fisheries by preserving and enhancing water quality and the environment associated with the floodplain and the watercourses that create them.

Inland Flood Protection Rule

The Inland Flood Protection Rule, effective July 17, 2023, ensures that areas at most significant risk are better defined and that new and reconstructed assets in these areas are designed and constructed using the best available climate-informed precipitation data (NJDEP 2023). The Rule accomplishes the following:

- Establishes the new Design Flood Elevation (DFE), which raises fluvial (non-tidal) flood elevation mapped by NJDEP by 2 feet
- Requires use of future projected precipitation when calculating flood elevations
- Ensures that NJDEP's Flood Hazard Area permits conform to NJ UCC standards and meet or exceed minimum FEMA NFIP requirements
- Requires stormwater Best Management Practices (BMPs) to be designed to manage runoff for both today's storms and future storms
- Removes use of Rational and Modified Rational methods for stormwater calculations (NJDEP 2023)

NJDEP anticipates similar rule changes will be established to address increasing flood risk in coastal areas due to sea-level rise and storm surge threats.

Wetlands Act of 1970 (NJSA 13:9A – 1 to 10)

In 1970, the New Jersey Legislature declared that one of the most vital and productive areas of our natural world is the area between the sea and the land known as the "estuarine zone." This area protects the land from the force of the sea, moderates the weather, provides a home for waterfowl and for fish and shellfish, and assists in absorbing sewage discharge by the rivers of the land. It is necessary to preserve the ecological balance of this area and prevent its further deterioration and destruction by regulating the dredging, filling, removing, or otherwise altering or polluting.

Coastal Zone Management Rules Program (NJAC 7:7E) Coastal Zone Management Adopted Amendment (NJAC 7:7-16.9)

Coastal Zone Management (CZM) rules mandate the use and development of coastal resources, to be used primarily by the Land Use Regulation Program in the Department in reviewing permit applications under the Coastal Area Facility Review Act (CAFRA), NJSA 13:19-1 et seq. (as amended to July 19, 1993); Wetlands Act of 1970, NJSA 13:9A-1 et seq.; Waterfront Development Law, NJSA 12:5-3; Water Quality Certification (401 of the Federal Clean Water Act); and Federal Consistency Determinations (307 of the Federal Coastal Zone Management Act). The rules also provide a basis for recommendations by the Program to the Tidelands Resource Council on applications for riparian grants, leases, and licenses. The most recent amendment, effective as of September 18, 2017, creates rules that update several provisions in the Department's requirements to provide public access to tidal waterways and their shores.

Freshwater Wetland Protection Act (NJSA 13: B:1) Freshwater Wetland Protection Rules (NJAC 7:7A)

New Jersey enacted this law to support development and enhancement of State and local wetland protection programs. Projects must clearly demonstrate a direct link to increasing the State's ability to protect wetland resources. Grants are federally funded and administered by the NJDEP. The associated implementing regulations support the New Jersey freshwater wetlands program. The Freshwater Wetlands Protection Act was last amended in 2016 and the Freshwater Wetland Protection Rules were last amended April 16, 2018.

Waterfront Development Statute (NJSA 12:5-1) Coastal Permit Program (NJAC 7:7)

This Law sets forth the requirements of filling or dredging of, or placement or construction of structures, pilings, or other obstructions in any tidal waterway or in certain upland areas adjacent to tidal waterways outside the area regulated under Coastal Area Facility Review Act. These requirements are fully explained in NJAC 7:7-2.3. These implementing rules establish the procedures by which the NJDEP will review permit applications and appeals from permit decisions the Waterfront Development Law.

Safe Dam Act of 1981 NJAC 7:24A

No municipality, corporation, or person shall (without the consent of the Commissioner of Environmental Protection) build any reservoir or construct any dam; or repair, alter, or improve existing dams on any river or stream in this State or between this State and any other state that will raise the waters of the river or stream more than five feet above its usual mean low water height.

Tidelands Act (NJSA 12:3)

Tidelands, also known as "riparian lands," are lands now or formerly flowed by the tide of a natural waterway. This includes lands that were previously flowed by the tide but have been filled and are no longer flowed by the tide. These lands are owned by the people of the State of New Jersey. Individuals must first get permission from the State to use these lands, in the form of a tidelands license, lease, or grant, and must pay for this use.

The management of tidelands in New Jersey is overseen by the Tidelands Resource Council, a board of 12 Governor-appointed volunteers, along with DEP staff at the Bureau of Tidelands Management. Grants, licenses, and leases are issued by the Tidelands Resource Council, which makes all ultimate decisions with regard to tidelands.

State Planning Act (NJSA § 52:18A-196 et seq)

The State Planning Act (1985) created the New Jersey State Planning Commission (SPC) and the Office of State Planning (OSP) as staff to the SPC.

New Jersey Department of State, Office for Planning Advocacy Duties of the SPC are to prepare and adopt a State Plan to provide a coordinated, integrated, and comprehensive plan for the growth, development, renewal, and conservation of the State and its regions; to prepare a long-term Infrastructure Needs Assessment, which shall provide information on present and prospective conditions, needs and costs with regard to State, county and municipal capital facilities, including water, sewerage, transportation, solid waste, drainage, flood protection, shore protection, and related capital facilities; to develop and promote procedures to facilitate cooperation and coordination among State agencies and local governments; to provide technical assistance to local governments; to periodically review State and local government planning procedures and relationships; and to review any bill introduced in either house of the Legislature which appropriates funds for a capital project.

Stormwater Management Rules (NJAC 7:8)

These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, runoff quality controls, and buffers around Category 1 waters.

New Jersey's Stormwater Management rules are implemented by the New Jersey Department of Environmental Protection through the review of permits issued by the Division of Land Use Regulation (Flood Hazard, Freshwater Wetlands, CAFRA, Waterfront Development, and Coastal Wetlands). The Stormwater Management rules (Stormwater rules or rules) are also implemented by local authorities through the Municipal Land Use Law (MLUL) and the Residential Site Improvement Standards (RSIS). Per the New Jersey Department of Community Affairs, the RSIS are applicable to any residential application that goes before a local board. Through the RSIS, the Stormwater rules are activated whenever a municipality requires the control of runoff from a site that is the subject of a site or subdivision application.

New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program Rules (NJAC 7:14A).

The New Jersey Pollutant Discharge Elimination System (NJPDES) Stormwater Rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES Rules govern the issuance of permits to entities that own or operate small, separate municipal storm sewer systems. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.

Guidance for the development of Municipal Mitigation Plans was developed and made available in February 2004. This has been effective in guiding the community for stormwater runoff.

The program was developed in response to the EPA Phase II rules published in December 1999. The department issued final stormwater rules on February 2, 2004, and four NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities as well as public complexes and highway agencies that discharge

stormwater from municipal separate storm sewers. There are 462 Tier A municipalities and 100 Tier B municipalities. The general permits address stormwater quality issues related to new development, redevelopment, and existing development by requiring municipalities to implement several Statewide Basic Requirements. All municipalities have a local stormwater coordinator, and the department has case managers assigned to each municipality for compliance assistance (see NJAC 7:22 below). Long-term water quality trends in rivers and streams indicate dramatic improvement over the past 30 years, likely the result of elimination or minimization of point sources, upgrades of wastewater treatment plants and natural attenuation of pollutants.

Municipal stormwater management renewal permits have changed for Tier A and Tier B municipalities, effective as of January 1, 2018. The Tier A and Tier B Municipal Stormwater General Permits authorize the discharge of stormwater from small municipal separate storm sewers. The Tier A permit addresses stormwater quality issues related to both new and existing development. The Tier B permit focuses on new development and redevelopment projects and public education.

Construction Permits (NJSA 13: 1D-29 to 34)

The Law mandates that NJDEP make timely decisions on construction permit applications to ensure adequate public notice of procedures and to continue effective administration of the substantive provisions of other laws.

This Law ensures NJDEP issues permits in a timely manner so as not to delay necessary construction projects. Historical records indicate NJDEP's conformance with this law. This does not apply to freshwater wetland rules, only coastal and flood hazard regulations. As part of the effort to recover from the impacts of Superstorm Sandy, this law was amended March 25, 2013, in conjunction with the amendment of R.2013d to the Flood Hazard Area Control Act.

New Jersey Green Acres Land Acquisition Act of 1961

The Legislature enacted the New Jersey Acres Land Acquisition Acts to achieve, in partnership with others, a system of interconnected open spaces, whose protection will preserve and enhance New Jersey's natural environment and its historic, scenic, and recreational resources for public use and enjoyment. On November 3, 1998, New Jersey voters approved a referendum that created a stable source of funding for open space, farmland, and historic preservation and recreation development, and on June 30, 1999, the Garden State Preservation Trust Act was signed into law. The law establishes, for the first time in history, a stable source of funding for preservation efforts. These rules implement the Green Acres laws, governing the award of loans or matching grants, or both, to local government units for the acquisition or development of land, and 50% matching grants to nonprofits for the acquisition or development of land, for outdoor recreation and conservation purposes. These rules establish project eligibility requirements, application requirements, funding award categories and criteria, matching grant and loan terms, and program administrative requirements. The rules also contain procedures for the disposal, or diversion to a use other than recreation and conservation, of those lands acquired or developed with Green Acres funding or otherwise encumbered with Green Acres restrictions.

Emergency Building Inspection Act (NJSA 52:27D-126.3)

Enacted on January 17, 2007, this Act addresses how building code officials would be compensated if called to support damage assessment outside of their jurisdiction.

The Commissioner of the Department of Community Affairs established a program to deploy State and local construction code officials to assist local construction code officials and inspectors. This program has provided flexibility and redundancy to the State and local governing bodies in the deployment of essential personnel to evaluate buildings and other structures affected by a natural or man-made disaster or emergency.

New Jersey Civilian Defense and Disaster Control Act

The purpose of this act is to provide for the health, safety, and welfare of the people of the State of New Jersey and to aid in the prevention of damage to and the destruction of property during any emergency as herein defined by prescribing a course of conduct for the civilian population of this State during such emergency and by centralizing control of all civilian activities having to do with such emergency under the Governor and for that purpose to give to the Governor control over such resources of the State Government and of each and every political subdivision thereof as may be necessary to cope with any condition that shall arise out of such emergency and to invest the Governor with all other power convenient or necessary to effectuate such purpose.

Implementation is overseen by the State Department of Defense, Office of Civilian defense director. The director is appointed by the Governor. The Act is implemented through coordination and established lines of communication through the State Office of Emergency Management and county emergency management coordinators.

NJSA 38A:17-1

The Governor is authorized to enter into agreements with the governors of any of the states bordering on New Jersey for the protection in the event of emergency of any or all interstate bridges, tunnels, ferries, and other communications facilities.

The State Office of Emergency Management (OEM) is responsible for the implementation of the Governor's directive to assist emergency response counterparts in bordering states. OEM manages inter-state assistance through delineated lines of communication and standard operating procedures.

Forest Fire Prevention and Control Act (NJSA 13:9-44 to 44.10)

The Forest Fire Service is responsible for determining wildfire hazards; removing or overseeing removal of brush, undergrowth, or other material that contributes to wildfire hazards; maintaining or overseeing maintenance of firebreaks; setting backfires; plowing lands; closing roads; and making regulations for burning brush. The Forest Fire Service has the authority to summon any male person between the ages of 18 and 50, who may be within the jurisdiction of the State, to assist in extinguishing fires. The Fire Service can require the use of property needed for extinguishing fires, issue permits, collect extinguishment costs and fines for violations, and direct all persons and apparatus engaged in extinguishing wildfires. The Service has the right of entry to inspect and ascertain compliance and extinguish wildfires, investigate fires to determine cause, close the woods to all unauthorized persons in an emergency, and arrest (without an official warrant) anyone violating the Forest Fire Laws.

The laws that apply are 13:9-2, 9-23, and 9-24. Also, Forest Fire mitigation efforts are not exempted in other environmental regulations. Certain mitigation efforts sometimes occur where there is threatened and endangered habitat, even when that habitat was caused by past prescribed burning operations.

NJSA 52:14E-11 (3-10-2003) The Fire Service Resource Emergency Deployment Act

This Act allows for the Fire Division within the Department of Community Affairs to deploy fire assets to a pre-designated location in advance of a disaster or emergency as well as move assets to a pre-designated location to avoid assets being damaged. This has been used successfully in every disaster since the Act was passed.

Best Management Practices for Creating and Maintaining Wildfire Fuel breaks in New Jersey's Wildland Urban Interface, 2011

In New Jersey, residential communities and development continue to spread into new, previously undisturbed natural areas which create a "wildland urban interface" where rural land and developed areas meet. This fragmented rural landscape has greater ignition sources and more frequent fires, which makes it difficult for the Forest Fire Service to manage land for wildfire protection and preparedness. This problem can be seen throughout the country and in New Jersey, especially with the State having such a rapidly growing population. In a study done by the American Planning Association, 46 percent of homes in New Jersey are located in the Wildland Urban Interface, which stresses the importance of the problem in New Jersey.

NJ Statewide Water Supply Plan

The Water Supply Management Act of 1981 requires that the NJ Department of Environmental Protection (NJDEP) develop and periodically update the NJ Statewide Water Supply Plan to guide future water supply management. The NJ Statewide Water Supply Plan addresses the following issues:

- Identify surface and ground water sources, and current demands on those resources
- Make demand projections for duration of the plan
- Identify intended uses of land purchased for water supply facilities but not yet used
- Recommend:
  - Improvements, new construction, and interconnections
  - Diversions for aquaculture
  - Legislative and administrative actions to protect watershed areas
  - Identification and purchase of land for water supply facilities
  - Administrative actions to protect surface and ground water supplies

The 2023 to 2028 plan addresses the following issues:

- Climate change implications for water availability and water supply demands,
- Extend the planning period from 2040 to 2050,
- Environmental justice and equity issues related to water supply management,
- Potential water supply implications of source water contamination, especially regarding emerging contaminants of concern; and
- More specific water management recommendations for stressed water resources (NJDEP 2022).

New Jersey’s Rising Seas and Changing Coastal Storms: Report of the 2019 Science and Technical Advisory Panel (STAP)

A 2016 New Jersey STAP was convened by Rutgers University, culminating in a report that identified planning options for practitioners to enhance the resilience of New Jersey’s people, places, and assets to sea-level rise, coastal storms, and the resulting flood risk. The same team at Rutgers University was engaged by the NJDEP to update the 2016 report based on the most current scientific information. Similar to the inaugural work, the 2019 STAP was charged with identifying and evaluating the most current science on sea-level rise projections and changing coastal storms, considering the implications for the practices and policies of local and regional stakeholders, and providing practical options for stakeholders to incorporate science into risk-based decision

processes. The 2019 STAP is used by multiple State agencies including NJDEP and NJOEM for sea level rise and coastal flooding planning and project design purposes.

2020 New Jersey Scientific Report on Climate Change

NJDEP's first scientific report on climate change summarizes the effects of climate change on New Jersey's environment to inform State and local decision-makers as they seek to understand and respond to the impacts of climate change. This report identifies and presents the best available science and existing data regarding the current and anticipated environmental effects of climate change globally, nationally, and regionally (NJDEP 2023).

2021 New Jersey Climate Change Resilience Strategy

New Jersey's first Statewide Climate Change Resilience Strategy provides a suite of forward-looking policy options to promote the long-term resilience of New Jersey to climate change. As a framework for policy, regulatory, and operational changes, the Resilience Strategy presents actions that New Jersey's Executive Branch can take to support the resilience of the state's communities, economy, and infrastructure. The Resilience Strategy includes 125 recommended actions across six priority areas (FERC 2020):

- Build resilient and healthy communities
- Strengthen the resilience of New Jersey's ecosystems
- Promote coordinated governance
- Invest in information and increase public understanding
- Promote climate informed investments and innovative financing
- Coastal resilience plan.

Coordinate Efforts to Protect and Enhance Tidal Marshes

In 2023, DEP, NJ Sports and Exposition Authority (NJSEA), Pinelands Commission and Highlands Council coordinated to develop the first fully integrated statewide Wetland Program Plan, which serves to direct current and future wetland protection, management and restoration efforts along a coordinated path to the benefit of New Jersey's wetland resources and the quality of life for future generations. Within this plan, efforts also were made to weave an environmental justice component into the program's core elements in an attempt to lessen environmental and public health stressors in historically overburdened communities.

15.2.3 County

The following summarizes the planning and regulatory capabilities available to Passaic County at the county and regional levels.

Passaic River Basin Climate Resilience Planning Study

In June 2019, a comprehensive climate resilience planning effort for transportation in the New Jersey portion of the Passaic River Basin was completed. This initiative included parts of Bergen, Essex, Hudson, Morris, Passaic, Somerset, Sussex, and Union counties. The primary objective of the study was to identify adaptation strategies to safeguard transportation corridors and assets from extreme weather events, such as excessive flooding, heat waves, and sea level rise. The study involved several key activities (NJTPA 2019):

- Conducting a vulnerability assessment of the area's transportation system

- Projecting future climate risks for the Passaic River Basin
- Developing adaptation strategies for critical transportation corridors and assets
- Formulating recommended actions and strategies to protect the transportation system from damage and disruption.

Highlands Regional Master Plan

The Highlands Regional Master Plan (RMP) is a comprehensive framework designed to guide the implementation of the Highlands Water Protection and Planning Act of 2004. The plan aims to protect and enhance the significant natural resources of the Highlands Region, which includes parts of Passaic County. It focuses on sustainable land use, water resource management, and environmental preservation. The RMP includes various technical reports and guidelines to ensure that development within the Highlands Region is consistent with the goals of protecting water quality, preserving open space, and maintaining the ecological integrity of the area (NJ Highlands Council 2008).

Passaic County Master Plan

The Passaic County Master Plan is a comprehensive document that guides the County's development and land use planning. It includes key elements, such as the following:

- The Transportation Element focuses on improving transportation infrastructure and connectivity
- The Corridor Enhancement Program is aimed at enhancing specific transportation corridors.
- The Green Stormwater Infrastructure Element promotes sustainable stormwater management practices
- The Highlands Element and Regional Master Plan align with the New Jersey Highlands Regional Master Plan to protect natural resources
- The Parks, Recreation, and Open Space Master Plan guides the development and maintenance of parks and recreational areas.
- The Sustainability Element encourages sustainable development practices.

Additionally, the plan includes technical studies and initiatives, such as the Morris Canal Greenway and the Highlands Rail Trail Facilities Plan (Passaic County 2025).

Passaic County Comprehensive Economic Development Strategy

The Passaic County Comprehensive Economic Development Strategy (CEDS) is a detailed plan designed to promote economic growth and revitalization in the County. Developed in collaboration with public, non-profit, and private sectors, the CEDS aims to create a comprehensive framework for sustainable economic development. Key components of the CEDS include the following:

- Gathering and analyzing data related to historic and current demographic and economic trends to inform strategic planning
- Establishing clear economic goals and objectives to guide development efforts
- Identifying and prioritizing strategic projects and initiatives that will drive economic growth
- Efficiently allocating resources to support economic development activities
- Fostering collaboration among various stakeholders, including government agencies, businesses, and community organizations

The CEDS serves as a roadmap for Passaic County to enhance its economic vitality, attract investment, and improve the quality of life for its residents (Passaic County Department of Planning and Economic Development 2015).

Passaic County Emergency Operations Plan

The County's Emergency Operations Plan (EOP) is a comprehensive framework designed to coordinate responses to emergencies and disasters within the County. It outlines the roles and responsibilities of various agencies and provides guidelines for effective coordination and resource management during emergencies. The plan includes the following key components:

- Mitigation involves activities aimed at reducing or eliminating the impact of disasters through public education, building codes, and floodplain management.
- Preparedness focuses on planning, training, and exercises to ensure readiness for potential emergencies.
- The response component covers immediate actions taken to protect lives and property, including evacuation, emergency medical services, and firefighting.
- Recovery efforts aim to restore the community to normal functioning by providing temporary housing, food, and restoring essential services.

The EOP is maintained by the Passaic County Office of Emergency Management, which collaborates with local, state, and federal agencies to ensure a coordinated response to any emergency.

Strategic Infrastructure Investment Plan

Passaic County's Strategic Infrastructure Investment Plan is a comprehensive countywide effort to identify Priority Investment Areas. This plan, completed in July 2024, aims to stimulate private investment, redevelopment, and new development through targeted public investment in transportation project improvements (Passaic County 2025).

Passaic County Code Blue Alert Plan

The Passaic County Code Blue Alert Plan is activated when temperatures drop below freezing, creating dangerous conditions for vulnerable individuals. During a Code Blue Alert, authorities coordinate efforts to assist unhoused individuals by providing access to local shelters and designated warming centers. These facilities expand their capacity to offer additional beds and space until weather conditions improve, and the alert is lifted (Passaic County 2025).

Site Plan Resolution

The Passaic County Site Plan Resolution outlines the requirements and procedures for site plan approval within the County. It ensures that any proposed land development along county roads or affecting county-maintained drainage systems is reviewed and approved by the Passaic County Planning Board (Passaic River Institute 2014).

Subdivision Resolution

The Passaic County Subdivision Resolution sets forth the procedures and standards for the subdivision of land within the County. This resolution ensures that any proposed subdivision complies with county regulations and is reviewed by the Passaic County Planning Board (Passaic County Planning Department 2014).

15.2.4 Local

Plans are often developed at the county and regional level in the State of New Jersey, but the majority of regulations are adopted and enforced by local municipalities. New Jersey's municipalities are granted the ability to establish and enforce various ordinances and planning requirements. New Jersey's Home Rule Act (1917) grants municipal governments broad authorities to enact ordinances and regulations providing for public welfare and order and stands as one of the major sources of authorization for local autonomy in the State. Municipalities can leverage these powers to address local conditions that affect their residents. To ensure a minimum set of standards, New Jersey has passed laws and regulations mandating that each municipality adopt local ordinances with the same basic criteria so that jurisdictions may add additional requirements but cannot have fewer requirements than the State.

For more information on the local plans and regulations adopted by each municipality in Passaic County that contribute to risk reduction, refer to Volume II.

Master Plans

The Municipal Land Use Law (MLUL) of 1975 (N.J.S. 40:55D-1 et seq.) grants municipalities the power to enact a master plan which has a land use element. Master plans create the foundation for the local zoning and land ordinances that govern development. These plans help jurisdictions review their land use plans and policies with public participation. The MLUL provides the required components of a municipal master plan and requires all zoning ordinances to be consistent with the master plan. The local zoning administrator as well as the volunteer planning and zoning board members have the responsibility to interpret and enforce the municipality's master plan.

In recognition of the critical need for climate science to inform land use planning, on February 4, 2021, Governor Phil Murphy signed into law Public Law 2021, c6. This law requires municipalities to incorporate a climate change-related hazard vulnerability assessment into any Master Plan Land Use Element adopted after the signing.

According to the amended law, these vulnerability assessments must rely on the most recent natural hazard projections and best available science provided by the NJDEP. They must also consider environmental effects associated with climate change, including but not limited to temperature, drought, and sea-level rise, and contain measures to mitigate reasonably anticipated natural hazards, such as coastal storms, shoreline erosion, flooding, storm surge, and wind.

Zoning Ordinances

The authority to regulate land use is encompassed within the powers granted to the legislative branch of government by Article III of the New Jersey Constitution of 1947. The legislature, however, is authorized by Article IV, Section VI, paragraph 2, to delegate some of its power to municipalities. This has been done by virtue of several land use laws, including the MLUL, which grants municipalities the power to enact a master plan which has a land use element and to adopt a zoning ordinance (N.J.S. 40:55D-28 and 40:55D-62). Under the MLUL, each municipality must adopt a zoning ordinance. A property owner can request a variance from the municipality, and if granted, the owner can use the land in a way that is ordinarily not permitted by the local zoning ordinance. Zoning ordinances have three major constraints:

- Municipalities may not exercise authority in ways that conflict with provisions of the federal or state constitutions.
- Municipal authority may not be exercised in conflict with authority exercised by the county, state, or federal governments.

- Municipal authority must be exercised in strict conformity with the provisions of the MLUL.

Each municipal clerk is required to file a copy of the planning and zoning ordinances of the municipality with the county planning board (NJ Statute 40:27-6.10). The local zoning administrator, as well as the volunteer planning and zoning board members, have the responsibility to interpret and enforce the municipality's zoning and other land development ordinances.

Subdivisions

The MLUL also dictates subdivisions in New Jersey. The MLUL allows every municipality in the State to adopt its own building and land use laws within a municipal boundary, and all property owners must abide by these laws.

The board of commissioners provides for the review of all subdivisions of land within the county by the county planning board and for the approval of those subdivisions affecting county road or drainage facilities (NJ Statute 40:27-6.2).

Building Codes

Building codes mandate best practices and technology, much of which is designed to reduce or prevent damage from occurring when structures are under stress. As evidenced during recent storm events (e.g., Hurricane Irene and Superstorm Sandy), structures built to code and sufficiently elevated suffer far less damage during hazard events. In New Jersey, municipalities are required to adopt the New Jersey State Uniform Construction Code (UCC). The MLUL (NJSA 40:55D-1) permits every municipality in the State to adopt its own building regulations, in which all property owners must abide by these regulations at a local level. Building regulations can be amended to be more stringent than the requirements of the UCC but not to be more lax.

The UCC Act authorizes the Commissioner of the Department of Community Affairs to adopt and enforce rules pertaining to construction codes and provides for the administration and enforcement of those rules throughout the State. The UCC (NJAC 5:23) contains the UCC Act and all rules issued under the Act relating to the administration and enforcement of construction regulations. The UCC is composed of four basic technical subcodes for construction: building, electrical, fire protection, and plumbing. In addition, the UCC contains technical subcodes for fuel gas installations; mechanical installations; one- and two-family dwellings; accessible (barrier free) construction; the rehabilitation of existing buildings; the construction of manufactured homes; asbestos hazard abatement; radon hazard abatement; and playground safety. In New Jersey, State-licensed, municipally employed code enforcement professionals (construction officials, subcode officials, and inspectors) are responsible for the enforcement of the UCC (NJDCA n.d.).

Stormwater Management Ordinances

Title 7 of the NJ Administrative Code (NJAC 7:8) establishes design and performance standards for management of stormwater that address water quality, water quantity, and recharge. All municipal stormwater control ordinances must be designed to:

- Reduce flood damage, including damage to life and property.
- Minimize, to the extent practical, any increase in stormwater runoff from any new development.
- Reduce soil erosion from any development or construction project.
- Ensure the adequacy of existing and proposed culverts and bridges, and other instream structures.
- Maintain ground water recharge.

- Prevent, to the greatest extent feasible, an increase in nonpoint pollution.
- Maintain the integrity of stream channels for their biological functions, as well as for drainage.
- Minimize pollutants in stormwater runoff from new and existing development in order to restore, enhance and maintain the chemical, physical, and biological integrity of the waters of the State, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water.
- Protect public safety through the proper design and operation of stormwater management basins.

Municipal ordinances can be amended to be more stringent than the requirements of the Stormwater Management rules but not to be more lax. The Residential Site Improvement Standards (RSIS) allow municipalities to require stormwater runoff controls for development falling below major development to address groundwater recharge and stormwater runoff quantity, but not for water quality as provided in the RSIS at NJAC 5:21-7.1 (NJDEP 2023).

Amendments to New Jersey's stormwater management rules in 2021 include the required use of green infrastructure practices that use or mimic the natural water cycle to capture, filter, absorb, and/or re-use stormwater.

Shoreline Management

The Coastal Area Facility Review Act (CAFRA) (NJSA 13:19) regulates almost all development along the coast involved in residential, commercial, or industrial sectors for activities including construction, relocation, and enlargement of buildings or structures; and all related work, such as excavation, grading, shore protection structures, and site preparation. This law is implemented through New Jersey's Coastal Zone Management Rules (NJAC 7:7E-1.1 et seq). The law divides the CAFRA area into pieces or zones and regulates different types of development in each zone. Generally, the closer a structure is to the water, the more rigorous the development regulations.

Stormwater Management Plan and Ordinances

In response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999, the NJDEP Storm Water Management Rule (NJAC 7:8, et seq.) was developed. This rule includes establishment of the Municipal Stormwater Regulation Program and four NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities as well as public complexes and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). These rules set forth the required components of regional and municipal stormwater management plans.

A municipal stormwater management plan (MSWMP) documents the strategy of a specific municipality to address stormwater-related impacts. A plan may address an existing water quantity issue, such as localized flooding; an existing water quality issue, such as excess pollutant loading; or issues of water quantity and quality that may be generated by future development. MSWMPs provide the structure and process for addressing stormwater management in the municipality. They are required by the Environmental Protection Agency's Phase II Stormwater Permitting Rules; the mandatory elements of the plan are described in the Stormwater Management Rule (NJDEP 2004).

Emergency Operations Plans

Local municipalities in the State of New Jersey are required to have an approved emergency operations plan. The plan specifies the vulnerabilities for major emergencies the municipality may have and outlines the resources the municipality has or can access to meet the emergency. The plan is reviewed at the County and State Offices of Emergency Management.

15.3 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

This section summarizes administrative and technical capabilities in Passaic County. Further information is provided in the jurisdictional annexes in Volume II.

15.3.1 Federal

FEMA

FEMA is responsible for providing assistance before, during, and after disasters. FEMA is the federal reviewer of hazard mitigation plans and sets federal standards for local and state hazard mitigation plans.

Community Assistance Visits and Community Assistance Contacts

FEMA evaluates NFIP minimum compliance through compliance audits known as Community Assistance Visits (CAV) or Community Assistance Contacts (CAC). CAVs and CACs are performed to ascertain community compliance with the NFIP, at entry into the CRS, and to maintain participation in the CRS. FEMA may conduct these with Region 2 staff, with NJDEP staff under the Compliance Assistance Program – State Support Services Element grant, or with private contractors. While there is some flexibility in how a CAV or a CAC is conducted, CAVs are generally more rigorous than CACs (NJDEP 2023).

(NJDEP 2023).

FEMA evaluates the following key areas in a compliance audit:

- The Community's Flood Damage Prevention Ordinance
- Mapping Products and other Ordinances used to regulate floodplain development
- Floodplain Development Permitting Procedures
- Floodplain Permit Applications and other Forms/Records, including Substantial Damage and Improvement Determinations
- Floodplain Development Review and Performance Standards
- Floodplain Development Permits Issued to Applicants (NJDEP 2023)

National Dam Safety Program

The National Dam Safety Program (NDSP) is a partnership of state and federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety to protect people from dam failures. It is administered through the Department of Homeland Security and FEMA. The program improves safety and security around dams by providing assistance grants to state dam safety agencies to assist them in improving their regulatory programs; producing educational materials for dam owners; funding research to enhance technical expertise as dams are built and rehabilitated; establishing training programs for dam safety inspectors; and creating a National Inventory of Dams (NID) (FEMA 2023).

HURREVAC

HURREVAC is the decision support tool of the National Hurricane Program, administered by FEMA, the U.S. Army Corps of Engineers (USACE), and the National Atmospheric and Oceanic Administration (NOAA) National

Hurricane Center (HURREVAC n.d.). The NJOEM has established a strong working group with all 21 county Offices of Emergency Management (OEMs) to use HURREVAC software for tracking hurricanes. HURREVAC allows NJOEM and counties to work as a unified team, coordinating notification, communication, activations, public warning, and evacuation and sheltering efforts. By operating together, the State and the counties serve the public better by providing the same advisories and actions.

National Weather Service (NWS)

The NWS monitors weather and delivers weather forecasting for New Jersey. Most of the State is serviced by the Mount Holly weather forecast office (WFO). Passaic, Bergen, Essex, Hudson, and Union County are covered by the New York WFO. NJOEM uses conference calling with the NWS and county OEMs to share specific information and needs when severe weather is forecast. When an approaching storm warrants monitoring, NJOEM sends out e-mails with State Emergency Operations Center (EOC) status information and advice embedded in jpeg files to keep all emergency managers statewide up to date with NJOEM's direction. Resources are deployed as early as possible to prepare for storm impacts. The NWS also offers various education and training programs on weather-related hazards (NWS 2023).

StormReady Program

The NWS operates the StormReady program, which encourages communities to take a new, proactive approach to improving local hazardous weather operations by providing emergency managers with clear-cut guidelines on how to improve their hazardous weather operations. To be recognized by the program, a community must establish a 24-hour warning point and emergency operations center; have more than one way to receive severe weather warnings and forecasts and to alert the public; create a system that monitors weather conditions locally; promote the importance of public readiness through community seminars; and develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises (NWS n.d.). In Burlington County, the Borough of Palmyra and the City of Burlington are StormReady communities. Joint Base McGuire-Dix-Lakehurst is a government/military participant in the program.

U.S. Army Corps of Engineers (USACE)

The USACE works to strengthen the nation's security by building and maintaining America's infrastructure and providing military facilities where servicemembers train, work, and live. Projects include dredging, storm damage reduction, and ecosystem restoration in and near waterways (USACE n.d.). New Jersey is serviced by the Philadelphia and New York districts. USACE has numerous initiatives to support hazard mitigation measures, including the Silver Jackets, planning assistance, and inspections and repair of flood control structures. USACE also maintains the National Inventory of Dams and the National Levee Database.

U.S. Geological Survey (USGS)

USGS maintains a network of gauges across New Jersey that continuously measure lake, reservoir table, stream, and tidal levels. These data sets are transmitted to the USGS and made available over the Internet. As project needs and funding levels change, gauges may be added or deactivated, and deactivated gauges may be reactivated (USGS 2023). USGS provides data to the Department of Environmental Protection for drought determinations. USGS also recovers high water marks post-coastal flooding (USGS 2018). In the back bays and along tidal waters, the U.S. Geological Survey (USGS) manages the New Jersey Tide Telemetry System. All systems transmit telemetry continuously to the NWS, USGS, State Climatologist, NJDEP, NJOEM, and all affected counties and many municipalities. These systems were created and installed with federal assistance through NOAA and USACE.

15.3.2 State

New Jersey Department of Environmental Protection (NJDEP)

Bureau of Dam Safety & Flood Control

The Bureau of Dam Safety & Flood Control leads the state's efforts filling the State NFIP Coordinator position and providing Community Rating System (CRS) support. In addition, the section's responsibilities include the funding of construction and operation of federal, state, and local flood control mitigation projects throughout the state. The section has also taken a lead role on the development and adoption of NJ Flood Hazard Area mapping, as well as an active partnership with FEMA on their Map Modernization Program efforts. The bureau assists communities participating in the NFIP and interested in joining CRS through the NJDEP Community Assistance Program Unit.

Dam Safety Section

The NJDEP Dam Safety Section under the Bureau of Dam Safety & Flood Control has responsibility for overseeing dam safety in the state. The primary goal of the program is to ensure the safety and integrity of dams in New Jersey and thereby protect people and property from the consequences of dam failures. The section also coordinates with the Division of State Police, local and county emergency management officials in the preparations and approval of emergency action plans.

The Dam Safety Section reviews plans and specifications for the construction of new dams or for the alteration, repair, or removal of existing dams. The section must grant approval before the owner can proceed with construction. Engineers from the Dam Safety Section evaluate each project, investigate site conditions, and check recommended construction materials. During construction, engineers identify conditions that may require design changes, check for compliance with approved plans and specifications, and approve foundations before material is placed.

Existing dams are periodically inspected to assure that they are adequately maintained, and owners are directed to correct any deficiencies found. The regulations require the owner to obtain a professional engineer to inspect their dams on a regular basis. These investigations include a comprehensive review of all pertinent material contained in the Section's files, a visual inspection, technical studies when necessary, and preparation of a comprehensive report.

Division of Water Supply and Geoscience

This Division works to ensure adequate, reliable, and safe water supply is available for the future. This goal is accomplished through the regulation of ground and surface water diversions, permitting of wells, permitting of drinking water infrastructure, monitoring of drinking water quality, and technical support for water systems to achieve compliance with all federal and state standards.

Water Supply staff provides technical assistance to assist water systems during water supply emergencies, as needed to re-establish safe and adequate public water supplies, and to address routine non-compliance from significant deficiencies or poor water quality test results. The Drinking Water State Revolving Fund (DWSRF) program assists water systems in financing the cost of infrastructure through the use of federal and New Jersey Environmental Infrastructure Trust (NJEIT) funds. Additionally, Water Supply provides operator licensing and training support as well as financial assistance through the DWSRF program.

New Jersey Geological and Water Survey

The New Jersey Geological and Water Survey evaluates geologic, hydrogeologic and water quality data to manage and protect water resources, to identify natural hazards and contaminants, and to provide mineral resources including offshore sands for beach nourishment. Information provided by the survey includes GIS data and maps of geology, topography, groundwater, and aquifer recharge. In addition, the data tracks wellhead protection areas, aquifer thicknesses, properties and depths, groundwater quality, drought, geologic resources, and hazards such as earthquakes, abandoned mines, karst-influenced sinkholes, and landslides.

New Jersey Department of the State

Office of Planning Advocacy

The New Jersey Office of Planning Advocacy (OPA) supports and coordinates planning throughout the state to protect the environment, mitigate development hazards and guide future growth into compact, mixed-use development and redevelopment while fostering a robust long-term economy. The OPA implements the goals of the State Development and Redevelopment Plan to achieve comprehensive, long-term planning; and integrates that planning with programmatic and regulatory land use decisions at all levels of government and the private sector.

Rutgers University

Office of the State Climatologist

The Office of the New Jersey's State Climatologist (ONJSC) generates and archives climate data. Generated data are from the New Jersey Weather and Climate Network (NJWxNet), which is an assemblage of 55 automated weather stations situated throughout the state. A decade or more of hourly observations are available from some of the stations, while others have shorter records. Since fall 2012 observations are available on a five-minute basis.

Along with these records, ONJSC archives or has ready access to National Weather Service Cooperative Weather Station data. These are daily observations from several dozen stations at any given time over the past century. Individual stations have as many as 120 years of data while other stations have started or ceased operating since the late 1800s. Another source of generated data is the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS), which includes daily observations of rain and snow from as many as several hundred volunteers throughout the state.

New Jersey Climate Adaptation Alliance

The New Jersey Climate Adaptation Alliance (NJADAPT) focuses on climate change preparedness for New Jersey in key impact sectors (public health; watersheds, rivers, and coastal communities; built infrastructure; agriculture; and natural resources).

NJADAPT is a collaborative effort of scientists and data managers in academia, government, the private sector and non-governmental organization community who have developed a strategic plan for a New Jersey platform to host and apply climate science impacts and data. The NJADAPT website (http://www.njadapt.org/) includes a flood exposure profile for community discussions about hazard impacts; NJ Flood Mapper (which is a tool for flooding hazards and sea level rise); and Getting to Resilience (a tool used to help communities reduce vulnerability and increase preparedness).

New Jersey Highlands Council

The Highlands Water Protection and Planning Council (Highlands Council) is a regional planning agency that works in partnership with municipalities and counties in the Highlands Region to encourage a comprehensive regional approach to implementing the 2004 Highlands Water Protection and Planning Act (the Highlands Act).

The Highlands Act established the Highlands Council and charged it with the creation and adoption of a regional master plan to protect and enhance the natural resources within the New Jersey Highlands. The Highlands Regional Master Plan (RMP) was adopted by the Highlands Council on July 17, 2008 and became effective on September 8, 2008. Conformance with the Highlands RMP is a two-phase process: petition and implementation. During the petition process, municipalities and counties work in collaboration with Highlands Council staff to prepare draft documents that will integrate the land use and resource management requirements of the Highlands Act into local regulatory and planning documents. Once a petition is approved by the Highlands Council, work begins on implementation, which involves finalizing those documents for local adoption and ongoing management of resources.

Northern areas of Passaic County are located in the Highlands Region. The Highlands Council may provide grant funding to municipalities and counties to support local hazard mitigation planning. Such plans would identify local level risks associated with extreme storm events and develop local actions that would potentially prevent or mitigate hazardous situations. For example, grants fund stormwater management plans which support green infrastructure for stormwater management, as well as stormwater mitigation plans. These plans should be in place prior to disaster events.

Highlands Council grants may be used for planning, design, and/or engineering activities, but do not fund capital expenses.

The Highlands Council is participating in the Governor's Climate Resiliency initiative and is preparing to develop a Highlands Climate Change chapter of the Regional Master Plan.

The Highlands Council has initiated a stormwater management program for counties and municipalities to assist in advance planning. The Council also requires extensive green stormwater infrastructure for all projects reviewed.

New Jersey Office of Emergency Management

Emergency management functions at the State-level are coordinated by NJOEM of the New Jersey State Police. The Emergency Management Section Supervisor holds the rank of Major and serves as Assistant Deputy State Director, Office of Emergency Management (New Jersey State Police 2023).

The Emergency Management Section is under the command of the Deputy Superintendent of Homeland Security, who is the Deputy State Director, Office of Emergency Management. The section organizes, directs, staffs, coordinates, and reports the activities of the Incident Support Bureau and Communications Bureau. The section is also responsible for planning, directing, and coordinating emergency operations within the State, which are beyond local control (New Jersey State Police 2023).

The following bureaus make up Emergency Management Section:

- Communications Bureau
- Emergency Response Bureau
- Incident Support Bureau

- Recovery Bureau
- Preparedness Bureau (New Jersey State Police 2023).

Hazard mitigation efforts in the State are largely coordinated through the Recovery Bureau and Preparedness Bureau.

North Jersey Transportation Planning Authority

The North Jersey Transportation Planning Authority (NJTPA) is the federally authorized Metropolitan Planning Organization for the 13-county northern New Jersey region. Each year, they oversee over $2 billion in transportation improvement projects and provide a forum for interagency cooperation and public input.

New Jersey Governor's Disaster Recovery Office

The New Jersey Governor's Disaster Recovery Office (GDRO) mission is to coordinate the multi-agency response to large-scale disaster events, such as COVID-19, Tropical Storm Ida, Superstorm Sandy, and other disasters, to ensure that every possible avenue of relief is pursued to assist in the recovery and rebuilding of the State. The GDRO also focuses on disaster resilience activities and sources of funding to mitigate damages from future events. The GDRO serves in a vital compliance role to ensure that federal disaster funds are expended in accordance with federal rules and are reported to the public in a transparent manner.

The GDRO officially assumed the role of the Governor's Office of Recovery and Rebuilding (GORR) in 2020 through the issuance of Governor Murphy's Executive Order (EO) No. 166. EO 166 formalized the GDRO's role for the Superstorm Sandy response and recovery, along with appointing the GDRO as the central point for oversight and coordination of COVID-19 federal funds and funding for all future disaster events. The GDRO works with other State agencies, including NJOEM (Federal Emergency Management Agency [FEMA] funding), New Jersey Department of Community Affair's (NJDCA) Disaster Recovery and Mitigation Division (HUD funding), and NJDEP (USACE and FEMA/HUD funding) to ensure that the funding received from Congress is put toward the most effective uses, including those related to hazard mitigation.

The GDRO works closely with NJOEM, NJDEP, NJDCA, and other areas of the Governor's Office in developing long-term hazard mitigation strategies. Important focus areas include updating the Flood Hazard Area Control Act, deploying pre-disaster programs, and weighing in on State legislation that might fund hazard mitigation activities or change flood hazard understanding.

New Jersey State Hazard Mitigation Team

The State Hazard Mitigation Team (SHMT) is an advisory committee that serves as a coordination point for all FEMA-funded natural hazard risk reduction and mitigation activities and projects that will be evaluated in conjunction with other federal- and State-funded recovery and resilience activities. The SHMT is responsible for periodically updating the State Hazard Mitigation Plan and has the authority to call upon any other state, county, or local government agency, academic institutions, and nongovernmental entities to provide input to the State Hazard Mitigation Plan. The SHMT meets following a Presidentially declared disaster event that results in FEMA funding for hazard mitigation or resilience being made available to the State of New Jersey to coordinate recovery activities. In lieu of a presidentially declared disaster, the SHMT meets annually.

Executive Order No. 344 was signed by Governor Murphy on October 6, 2023 to replace Executive Order No. 115 (1994). The updated Executive Order reorganized the SHMT and outlines the membership, roles, and responsibilities of the SHMT members.

The updated SHMT is comprised of seven members, which includes:

- The Executive Director of the GDRO
- The SHMO
- The Chief Resilience Officer, or designee
- The State Director of Emergency Management, who is the Superintendent of State Police, or designee
- The Commissioner of Community Affairs, or designee
- The Commissioner of Transportation, or designee
- The Attorney General, or designee

The Governor also can appoint additional members to the SHMT. The SHMT is co-chaired by the Executive Director of the GDRO and the SHMO.

Sustainable Jersey

Sustainable Jersey is a nonprofit organization that provides tools, training and financial incentives to support communities as they pursue sustainability programs. By supporting community efforts to reduce waste, cut greenhouse gas emissions, and improve environmental equity, Sustainable Jersey aims to empower communities to build a better world for future generations. The organization also offers a certification program. Sustainable Jersey certification is a designation for municipal governments in New Jersey. All actions taken by municipalities to score points toward certification must be accompanied by documentary evidence and is reviewed. The certification is free and completely voluntary (Sustainable Jersey 2023). Many municipalities in Passaic County participate in Sustainable Jersey but only the following municipalities are certified: Bloomingdale Borough (bronze), City of Clifton (bronze), North Haledon Borough (bronze) and Ringwood Borough (bronze) (Sustainable Jersey 2024).

15.3.3 County

Passaic County Office of Emergency Management

The Office of Emergency Management (OEM) serves as a coordinating entity among local, state, and federal agencies. It collaborates with County and municipal health agencies, health care providers, and emergency service personnel, including police, fire, EMS, and the Sheriff's Office, to manage responses during emergencies. The mission of the OEM is to deliver expertise and leadership through the integration of emergency management programs, functions, and supporting activities aimed at preventing, protecting against, mitigating the effects of, responding to, and recovering from all hazards (Passaic County 2025).

Passaic County Department of Planning and Economic Development

The Passaic County Department of Planning and Economic Development addresses key needs such as employment, affordable housing, efficient transportation, and access to leisure, recreational, and cultural opportunities. The department provides staff support for the Board of County Commissioners, the Passaic County Planning Board, and other advisory committees. It administers programs like the Community Development Block Grant (CDBG) to support local development projects and oversees public housing initiatives to ensure affordable housing options. Working closely with local municipalities and other stakeholders, the department guides future changes and improvements within the County (Passaic County 2025).

Passaic County Planning Board

The Passaic County Planning Board oversees land use and development within the County, ensuring that proposed developments comply with County regulations and align with overall planning goals. The board reviews and approves site plans, subdivisions, and other land development proposals, particularly those affecting County roads or drainage systems. It works in coordination with local municipalities to align development projects with county-wide planning objectives. The board also holds regular public meetings at the Passaic County Administration Building to discuss and approve development projects.

Passaic County Department of Engineering

The Engineering Department is responsible for infrastructure projects such as bridges, culverts, drainage systems, and road/traffic operations. This department prepares plans and specifications, manages projects, and inspects the construction of the County's capital improvement projects, which encompass buildings, parks, 122 bridges, 292 culverts, 246 miles of roadway and associated drainage systems, and five dams. Additionally, it maintains records of County facilities and recommends traffic rules and regulations (Passaic County 2025).

Passaic County Department of Culture and Historic Affairs

The Passaic County Department of Cultural & Historic Affairs (DCHA) operates and maintains historic sites, parks, and facilities throughout the County. It develops and implements cultural programs, exhibitions, grant programs, historic research, and heritage tourism campaigns to promote public awareness and visitation of the County's historic and cultural assets. Key functions include managing historic sites like the Dey Mansion Washington’s Headquarters, Passaic County Arts Center, and Lambert Castle; organizing public programs and exhibitions; administering arts and historic preservation regrant programs; and assisting other county departments and municipalities with preservation matters and public art installations (Passaic County 2025).

Passaic County Roads Division

The Passaic County Roads Division maintains and repairs all county roadways, culverts, catch basins, and guide rails. This division oversees 246 miles of roadway across 16 municipalities within the County. Its duties include pavement maintenance, drainage system upkeep, street cleaning, and snow and ice control. Additionally, the Roads Division maintains warning and guide signs, as well as trees within County rights-of-way.

The division also handles the repair and maintenance of all County vehicles, except those belonging to the Sheriff's Office, and conducts State Motor Vehicle Inspections. Its sign shop creates custom signs for County events and provides lettering for offices and vehicles. The Roads Division lends equipment and labor to municipalities when needed and assists the Passaic County Sheriff's Office with the Sheriff's Labor Assistance Program. It is also part of the Emergency First Responder Program for the County (Passaic County 2025).

Passaic County Department of Health Services

The Passaic County Department of Health Services (PCDHS) is dedicated to protecting and promoting the health of the County's population across 16 municipalities. While not a traditional public health service provider, the department has a well-organized infrastructure and is a state-certified County Environmental Health Act (CEHA) agency. Key functions include organizing public health outreach events, providing health resources on topics such as diabetes and heart health, and managing environmental health concerns to ensure compliance with health regulations. The PCDHS collaborates with local health agencies, healthcare providers, and community organizations to ensure the well-being of Passaic County residents (Passaic County 2025).

Passaic County Parks and Recreation

The Passaic County Parks and Recreation Department provides recreational opportunities and maintains the County's parks and facilities. The department offers activities including arts and culture workshops, outdoor adventures, family fun events, senior programs, and sports classes. It manages several parks and recreational areas, ensuring they are well-maintained and accessible for public use (Passaic County 2025).

15.4 FISCAL CAPABILITIES

This section summarizes fiscal capabilities in Passaic County. Further information is provided in the jurisdictional annexes in Volume II. The *State Capabilities* section of the 2019 New Jersey State Hazard Mitigation Plan features a section on mitigation-related funding administered by state agencies that eligible jurisdictions can use to fund mitigation actions.

15.4.1 Federal

As noted on the FEMA Hazard Mitigation Assistance website (FEMA n.d.), FEMA administers five programs that provide funding for eligible mitigation planning and projects that reduces disaster losses and protect life and property from future disaster damages. The programs are the Hazard Mitigation Grant Program (HMGP), and the HMGP Post Fire Grant, the Flood Mitigation Assistance (FMA) Program and the Pre-Disaster Mitigation (PDM) Program. Table 15-2 provides an overview of program funding eligibility and cost share.

Table 15-2. FEMA Hazard Mitigation Assistance Grant Cost Share Requirements

Programs	Cost Share (Percent of Federal / Non-Federal Share)
HMGP[a]	75 / 25
HMGP Post Fire	75 / 25
FMA (community flood mitigation, project scoping, individual mitigation of insured properties, and planning grants)	75 / 25
FMA—repetitive loss property	90 / 10
FMA—severe repetitive loss property	100 / 0
PDM	75 / 25
PDM—small and impoverished community	Up to 90 / 10

Source: FEMA 2023; FEMA 2023

a. *Subapplicants should consult their State Hazard Mitigation Officer (SHMO) for the amount of percentage of HMGP subrecipient management cost funding their State has determined to be passed through subrecipients.*

b. *To be eligible for an increased federal cost share, a FEMA-approved state or tribal (standard or enhanced) mitigation plan that addressed repetitive loss properties must be in effect at the time of award, and the property is being submitted for consideration must be a repetitive loss property.*

HMGP assists in implementing long-term hazard mitigation planning and projects following a Presidential major disaster declaration. PDM provides funds for hazard mitigation planning and projects on an annual basis. FMA

provides funds for planning and projects to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP) on an annual basis (FEMA 2023).

HMGP funding is generally 15 percent of the total amount of Federal assistance provided to a State, Territory, or federally recognized tribe following a major disaster declaration. PDM and FMA funding depends on the amount congress appropriates each year for those programs.

Individual homeowners and business owners may not apply directly to FEMA. Eligible local governments may apply on their behalf (FEMA 2023).

Federal mitigation grant funding is available to all communities with a current hazard mitigation plan (this plan); however, most of these grants require a “local share” in the range of 10-25 percent of the total grant amount. The FEMA mitigation grant programs are described below.

FEMA

Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) is a post-disaster mitigation program. It is made available to states by FEMA after each Federal disaster declaration. The HMGP can provide up to 75 percent funding for hazard mitigation measures. The HMGP can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration or that will reduce the likely damage from future disasters. Examples of projects include acquisition and demolition of structures in hazard-prone areas, flood-proofing or elevation to reduce future damage, minor structural improvements, and development of state or local standards. Projects must fit into an overall mitigation strategy for the area identified as part of a local planning effort. All applicants must have a FEMA-approved hazard mitigation plan (this plan).

Applicants who are eligible for the HMGP are state and local governments, certain nonprofit organizations or institutions that perform essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for the HMGP; a local government must apply on their behalf.

Flood Mitigation Assistance Program

The Flood Mitigation Assistance (FMA) program combines the previous Repetitive Flood Claims and Severe Repetitive Loss Grants into one grant program. The FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. The FMA is funded annually; no federal disaster declaration is required. Only NFIP insured homes and businesses are eligible for mitigation in this program. Funding for FMA is very limited and, as with the HMGP, individuals cannot apply directly for the program. Applications must come from local governments or other eligible organizations. The federal cost share for an FMA project is at least 75 percent. At most, 25 percent of the total eligible costs must be provided by a non-federal source. Of this 25 percent, no more than half can be provided as in-kind contributions from third parties. At minimum, a FEMA-approved local flood mitigation plan is required before a project can be approved. The FMA funds are distributed from FEMA to the state.

Rehabilitation of High Hazard Potential Dams Program

The Rehabilitation of High Hazard Potential Dams (HHPD) grant program provides technical, planning, design, and construction assistance for eligible rehabilitation activities that reduce dam risk and increase community preparedness.

The HHPD Grant Program will provide assistance for technical, planning, design, and construction activities toward:

- Repair
- Removal
- Structural/nonstructural rehabilitation of eligible high hazard potential dams

Extraordinary Circumstances

For FMA project subawards, the FEMA Region may apply extraordinary circumstances when justification is provided and with concurrence from FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) prior to granting an exception. If this exception is granted, a local mitigation plan must be approved by FEMA within 12 months of the award of the project subaward to that community.

For HMGP and FMA, extraordinary circumstances exist when a determination is made by the Applicant and FEMA that the proposed project is consistent with the priorities and strategies identified in the State (Standard or Enhanced) Mitigation Plan and that the jurisdiction meets at least one of the criteria below. If the jurisdiction does not meet at least one of these criteria, the Region must coordinate with FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) for HMGP; however, for FMA the Region must coordinate and seek concurrence prior to granting an exception:

- The jurisdiction meets the small, impoverished community criteria (see Part VIII, B.2).
- The jurisdiction has been determined to have had insufficient capacity due to lack of available funding, staffing, or other necessary expertise to satisfy the mitigation planning requirement prior to the current disaster or application deadline.
- The jurisdiction has been determined to have been at low risk from hazards because of low frequency of occurrence or minimal damage from previous occurrences as a result of sparse development.
- The jurisdiction experienced significant disruption from a declared disaster or another event that impacts its ability to complete the mitigation planning process prior to award or final approval of a project award.
- The jurisdiction does not have a mitigation plan for reasons beyond the control of the State, federally recognized tribe, or local community, such as Disaster Relief Fund restrictions that delay FEMA from granting a subaward prior to the expiration of the local or Tribal Mitigation Plan.

For HMGP and FMA, the Applicant must provide written justification that identifies the specific criteria or circumstance listed above, explains why there is no longer an impediment to satisfying the mitigation planning requirement and identifies the specific actions or circumstances that eliminated the deficiency.

When an HMGP project funding is awarded under extraordinary circumstances, the Recipient shall acknowledge in writing to the Regional Administrator that a plan will be completed within 12 months of the subaward. The Recipient must provide a work plan for completing the local or Tribal Mitigation Plan, including milestones and a timetable, to ensure that the jurisdiction will complete the plan in the required time. This requirement shall be incorporated into the award (both the planning and project subaward agreements if a planning subaward is also awarded).

Assistance to Firefighters Grant Program

The goal of the Assistance to Firefighters Grants is to enhance the safety of the public and firefighters with respect to fire-related hazards by providing direct financial assistance to eligible fire departments, nonaffiliated emergency medical services organizations, and state fire training academies. This funding is for critically needed resources to

equip and train emergency personnel to recognized standards, enhance operations efficiencies, foster interoperability, and support community resilience.

Emergency Management Performance Grants Program

The Emergency Management Performance Grant (EMPG) provides state, local, tribal, and territorial emergency management agencies with the resources required for implementation of the National Preparedness System and works toward the national preparedness goal of a secure and resilient nation. The EMPG's allowable costs support efforts to build and sustain core capabilities across the prevention, protection, mitigation, response, and recovery mission areas.

Homeland Security Grant Program

The Homeland Security Grant Program (HSGP) plays an important role in the implementation of the National Preparedness System by supporting the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient nation. The program supports efforts to build and sustain core capabilities across the Prevention, Protection, Mitigation, Response, and Recovery mission areas. This includes two priorities: building and sustaining law enforcement terrorism prevention capabilities and maturation and enhancement of state and major urban area fusion centers. HSGP is composed of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and the Operation Stonegarden (OPSG). Together, these grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration.

Disaster and Recovery Assistance Programs

Following a disaster, various types of assistance may be made available by local, state, and federal governments. The types and levels of disaster assistance depend on the severity of the damage and the declarations that result from the disaster event. Among the general types of assistance that may be provided should the President of the United States declare the event a major disaster includes the following:

Individual Assistance

Individual Assistance (IA) provides help for homeowners, renters, businesses, and some nonprofit entities after disasters occur. This program is largely funded by the U.S. Small Business Administration. For homeowners and renters, those who suffered uninsured or underinsured losses may be eligible for a Home Disaster Loan to repair or replace damaged real estate or personal property. Renters are eligible for loans to cover personal property losses. Individuals may borrow up to $200,000 to repair or replace real estate, $40,000 to cover losses to personal property, and an additional 20 percent for mitigation. For businesses, loans may be made to repair or replace disaster damages to property owned by the business, including real estate, machinery and equipment, inventory, and supplies. Businesses of any size are eligible. Nonprofit organizations such as charities, churches, private universities, etc. are also eligible. An Economic Injury Disaster Loan provides necessary working capital until normal operations resume after a physical disaster. These loans are restricted, by law, to small businesses only.

Public Assistance

Public Assistance (PA) provides cost reimbursement aid to local governments (state, county, local, municipal authorities, and school districts) and certain nonprofit agencies that were involved in disaster response and recovery

programs or that suffered loss or damage to facilities or property used to deliver government-like services. This program is largely funded by FEMA with both local and state matching contributions required.

Small Business Administration Loans

The Small Business Administration (SBA) provides low-interest disaster loans to homeowners, renters, business of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.

Homeowners may apply for up to $200,000 to replace or repair their primary residence. Renters and homeowners may borrow up to $40,000 to replace or repair personal property (such as clothing, furniture, cars, and appliances) damaged or destroyed in a disaster. Physical disaster loans of up to $2 million are available to qualified businesses or most private nonprofit organizations.

U.S. Department of Health and Human Services

Social Services Block Grant Program

The Social Services Block Grant (SSBG) is a flexible funding source that allows states and territories to tailor social service programming to their population's needs. Through the SSBG, states provide essential social services that help achieve a myriad of goals to reduce dependency and promote self-sufficiency; protect children and adults from neglect, abuse, and exploitation; and help individuals who are unable to take care of themselves to stay in their homes or to find the best institutional arrangements.

U.S. Department of Housing and Urban Development

Community Development Block Grants

Community Development Block Grants (CDBG) are federal funds intended to provide low and moderate-income households with viable communities, including decent housing, as suitable living environment, and expanded economic opportunities. Eligible activities include community facilities and improvements, roads and infrastructure, housing rehabilitation and preservation, development activities, public services, economic development, planning, and administration. Public improvements may include flood and drainage improvements. In limited instances, and during the times of "urgent need" (e.g., post-disaster) as defined by the CDBG National Objectives, CDBG funding may be used to acquire a property located in a floodplain that was severely damaged by a recent flood, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event.

Community Development Block Grant Disaster Recovery (CDBG-DR) grant funds are appropriated by Congress and allocated by HUD to rebuild disaster-impacted areas and provide crucial seed money to start the long-term recovery process. These flexible grants help cities, counties, Indian tribes, and States recover from presidentially declared disasters, especially in low-income areas, subject to the availability of supplemental appropriations. Since CDBG-DR assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources.

Disaster Housing Assistance Program

The Disaster Housing Assistance Program provides emergency assistance for housing, including minor repairs of the home to establish livable conditions, mortgage, and rental assistance.

HOME Investment Partnerships Program

The HOME Investment Partnerships Program (HOME) provides grants to states and localities that communities use—often in partnership with local nonprofit groups—to fund a wide range of activities, including building, buying, and/or rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to low-income people. HOME is the largest federal block grant to state and local governments designed exclusively to create affordable housing for low-income households. HOME funds are awarded annually as grants to participating jurisdictions. The program's flexibility allows states and local governments to use HOME funds for grants, direct loans, loan guarantees or other forms of credit enhancements, or rental assistance or security deposits.

The program's requirement that participating jurisdictions match 25 cents of every dollar in program funds mobilizes community resources in support of affordable housing.

Section 108 Loan Guarantee Program

The Section 108 Loan Guarantee Program (Section 108) provides communities with a source of low-cost, long-term financing for economic and community development projects. Section 108 financing provides an avenue for communities to undertake larger, more costly projects, where they may have limited resources to invest upfront.

Section 108 can fund economic development, housing, public facilities, infrastructure, and other physical development projects, including improvements to increase resilience against natural disasters. This flexibility of use makes it one of the most potent and important public investment tools that HUD offers to states and local governments.

Section 108 assistance can be deployed in two ways:

- Directly by the community or its governmental or non-profit partner to carry out an eligible project
- Indirectly with a community or its partner re-lending (or, in limited circumstances, granting) the funds to a developer or business to undertake an eligible project

U.S. Department of Transportation

Federal Highway Administration Emergency Relief

Federal Highway Administration (FHWA) Emergency Relief is a grant program that can be used for the repair or reconstruction of federal-aid highways and roads on federal lands that have suffered serious damage as a result of a disaster. New Jersey serves as the liaison between local municipalities and FHWA, making the municipalities sub-applicants of New Jersey. The program is appropriated $100 million annually.

Federal Transit Administration Emergency Relief

Federal Transit Authority (FTA) Emergency Relief is a grant program that funds capital projects to protect, repair, reconstruct, or replace equipment and facilities of public transportation systems. Administered by the FTA and directly allocated to mass transit and port authorities, this transportation-specific fund was created as an alternative to FEMA's PA.

Federal Highway Administration Recreational Trails

The Federal Highway Administration's Recreational Trails Program (RTP) provides financial assistance to states for developing and maintaining trails and trail facilities. The RTP funds come from the Federal Highway Trust Fund

and represent a portion of the motor fuel excise tax collected from non-highway recreational fuel use. Since the program's inception in 1993, New Jersey has awarded more than $16 million to federal, state, county and local governments, and non-profit agencies. Projects are funded on an 80% federal share and 20% matching share basis. In 2010, over $1 million was available for projects. Of the funding available each year, 30% is allocated for non-motorized trail projects, 30% for motorized trail projects, and 40% for diversified use trail projects.

NJDEP's Green Acres Program administers the program in New Jersey. Projects are reviewed and recommended for funding by the New Jersey Trails Council and approved by the Federal Highway Administration under the Infrastructure Investment and Jobs Act (IIJA). The Trails Council comprises interest groups for hiking, mountain biking, horseback riding, motorized trail use and canoeing/kayaking, as well as several general trail advocates and state government representatives.

Rebuilding American Infrastructure with Sustainability and Equity Grant Program

The Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program provides an opportunity for the U.S. Department of Transportation (USDOT) to invest in road, rail, transit, and port projects that promise to achieve national objectives. The RAISE program enables USDOT to examine these projects on their merits to help ensure that taxpayers are getting the highest value for every dollar invested.

The eligibility requirements of RAISE allow project sponsors at the state and local levels to obtain funding for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional USDOT programs. RAISE can provide funding directly to any public entity, including municipalities, counties, port authorities, tribal governments, or others, in contrast to traditional federal programs that provide funding to very specific groups of applicants (mostly state departments of transportation and transit agencies). This flexibility allows RAISE and USDOT partners at the state and local levels to work directly with a host of entities that own, operate, and maintain much of that nation's transportation infrastructure but otherwise cannot turn to the federal government for support.

U.S. Department of Agriculture

Community Facilities Direct Loan and Grant Program

This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area and does not include private, commercial, or business undertakings. Funds can be used to purchase, construct, and/or improve essential community facilities, purchase equipment, and pay related project expenses. Rural areas including cities, villages, townships, towns, and federally recognized tribal lands, with no more than 20,000 residents according to the latest U.S. Census, are eligible for this program.

Emergency Loan Program

The Emergency loan program is triggered when a natural disaster is designated by the Secretary of Agriculture, or a natural disaster or emergency is declared by the President under the Stafford Act. These loans help producers who suffer qualifying farm-related losses directly caused by the disaster in a county declared or designated as a primary disaster or quarantine area. Also, farmers located in counties that are contiguous to the declared, designated, or quarantined area may qualify for emergency loans.

For production losses, a 30 percent reduction in a primary crop in a designated or contiguous county is required. Losses to quality, such as receiving a 30 percent reduced price for flood-damaged crops, may be eligible for assistance, too.

Emergency Watershed Protection Program

The Emergency Watershed Protection (EWP) Program, a federal emergency recovery program, helps local communities recover after a natural disaster. The EWP program offers technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms, and other natural disasters that impair a watershed. EWP does not require a disaster declaration by federal or state government officials for program assistance to begin. The Natural Resources Conservation Service (NRCS) state conservationist can declare a local watershed emergency and initiate EWP program assistance in cooperation with an eligible sponsor. The sponsor must sign a cooperative agreement with NRCS. The EWP program offers financial and technical assistance for various activities, including the following:

- Remove debris from stream channels, road culverts, and bridges
- Reshape and protect eroded streambanks
- Correct damaged or destroyed drainage facilities
- Establish vegetative cover on critically eroding lands
- Repair levees and structures
- Repair certain conservation practices
- Buyouts

Additional information regarding the EWP is detailed below.

EWP – Recovery

The EWP – Recovery program is aimed at relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. Public and private landowners are eligible for assistance but must be represented by a project sponsor that must be a legal subdivision of the state, such as a city, county, township, or conservation district, and Native American Tribes or Tribal governments. NRCS will pay up to 75 percent of the construction cost of emergency measures. The remaining 25 percent must come from local sources and can be in the form of cash or in-kind services.

EWP – Recovery work is not limited to any one set of measures. The program is designed for the installation of recovery measures to safeguard lives and property as a result of a natural disaster. NRCS completes a Damage Survey Report, which provides a case-by-case investigation of the work necessary to repair or protect a site. Watershed impairments that the EWP Program addresses are debris-clogged stream channels, undermined and unstable streambanks, jeopardized water control structures and public infrastructures, wind-borne debris removal, and damaged upland sites stripped of protective vegetation by fire or drought.

EWP – Floodplain Easement

Privately owned lands or lands owned by local and state governments might be eligible for participation in the EWP – Floodplain Easement program. To be eligible, lands must meet one of the following criteria:

- Lands that have been damaged by flooding at least once within the previous calendar year or have been subject to flood damage at least twice within the previous 10 years

- Other lands within the floodplain that would contribute to the restoration of flood storage and flow, provide for control of erosion, or improve the practical management of the floodplain easement
- Lands that would be inundated or adversely impacted as a result of a dam breach

Through this program, easements are restored to the natural environment to the extent practicable. Work can include both structural and nonstructural practices to restore flood storage and flow, control erosion, and improve the practical management of the easement.

Structures, including buildings, within the floodplain easement must be demolished and removed or relocated outside the 100-year floodplain or dam breach inundation area.

Regional Conservation Partnership Program

The Regional Conservation Partnership Program promotes coordination of NRCS conservation activities with partners that offer value-added contributions to expand the collective ability to address on-farm, watershed, and regional natural resource concerns. Through this program, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address.

U.S. Fish and Wildlife Service

Partners for Fish and Wildlife

The Partners for Fish and Wildlife Program provides free technical and financial assistance to landowners, managers, tribes, corporations, schools, and nonprofits interested in improving wildlife habitat on their land. These projects range in size from a wetland of a few acres to a grassland restoration covering several hundred thousand acres.

Many Partners for Fish and Wildlife projects take place on working landscapes such as forests, farms, and ranches. Efforts are focused on areas of conservation concern, such as upland forests, wetlands, native prairies, marshes, rivers, and streams. Projects are designed to benefit federal trust species including migratory birds and endangered, threatened, or at-risk species.

U.S. Environmental Protection Agency

Smart Growth Implementation Assistance Program

The Smart Growth Implementation Assistance program focuses on complex issues such as stormwater management, code revision, transit-oriented development, affordable housing, infill development, corridor planning, green building, and climate change. Applicants can submit proposals under four categories: community resilience to disasters, job creation, the role of manufactured homes in sustainable neighborhood design, or medical and social service facilities siting.

Clean Water Act Section 604(b) Water Quality Planning Grants

Water Quality Planning Grants provide funding to implement regional comprehensive water quality management planning activities as described in Section 604(b) of the federal Clean Water Act. Funds are to be used for water quality management planning activities, including tasks to determine the nature, extent, and causes of point and nonpoint source water pollution problems, and to develop plans to resolve these problems.

U.S. Economic Development Administration

The U.S. Economic Development Administration (USEDA) is an agency of the U.S. Department of Commerce that supports regional economic development in communities around the country. It provides funding to support comprehensive planning and makes strategic investments that foster employment creation and attract private investment in economically distressed areas of the United States.

Public Works Program

Through its Public Works Program, USEDA invests in key public infrastructure, such as traditional public works projects, including water and sewer system improvements, expansion of port and harbor facilities, brownfields, multitenant manufacturing and other facilities, business and industrial parks, business incubator facilities, redevelopment technology-based facilities, telecommunications facilities, and development facilities.

Economic Adjustment Program

Through its Economic Adjustment Program, USEDA administers its Revolving Loan Fund Program, which supplies small businesses and entrepreneurs with the gap financing needed to start or expand their business in areas that have experienced or are under threat of serious structural damage to the underlying economic base.

National Park Service

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard natural areas, water resources, and cultural heritage, and to provide recreation opportunities. Using no taxpayer dollars, the LWCF invests earnings from offshore oil and gas leasing to help strengthen communities, preserve history, and protect the national endowment of lands and waters. The LWCF program is divided into the “State Side,” which provides grants to State and local governments, and the “Federal Side,” which is used to acquire lands, waters, and interests therein necessary to achieve the natural, cultural, wildlife, and recreation management objectives of federal land management agencies. The LWCF was permanently reauthorized in 2019 and permanently funded in August 2020.

Restore America’s Estuaries

Coastal Watersheds Grant Program

Restore America’s Estuaries, in close coordination with and financial support from EPA, administers the National Estuary Program (NEP) Coastal Watersheds Grant Program. This grant program funds projects within the geographic areas shown here and supports the following Congressionally set priorities:

- Loss of key habitats resulting in significant impacts on fisheries and water quality such as seagrass, mangroves, tidal and freshwater wetlands, forested wetlands, kelp beds, shellfish beds, and coral reefs.
- Recurring harmful algae blooms.
- Unusual or unexplained marine mammal mortalities.
- Proliferation or invasion of species that limit recreational uses, threaten wastewater systems, or cause other ecosystem damage.
- Flooding and coastal erosion that may be related to sea-level rise, changing precipitation, or salt marsh, seagrass, or wetland degradation or loss.

- Impacts of nutrients and warmer water temperatures on aquatic life and coastal ecosystems, including low dissolved oxygen conditions in estuarine waters.
- Contaminants of emerging concern found in coastal and estuarine waters such as pharmaceuticals, personal care products, and microplastics.

15.4.2 State

New Jersey Board of Public Utilities (BPU)

The New Jersey BPU works with private utility companies to provide analysis of natural hazard information affecting the provision of electric power, telecommunications, public water, sewage collection and treatment, and other regulated public utilities. The data are used during response and recovery efforts in the event of emergency or disaster and is also used to analyze impact of mitigation plans and projects. BPU also provides technical assistance for the Energy Resiliency Program

New Jersey Clean Energy Program (NJCEP)

NJCEP promotes increased energy efficiency and the use of clean, renewable sources of energy, including solar, wind, geothermal, and sustainable biomass. The results for New Jersey are a stronger economy, less pollution, lower costs, and reduced demand for electricity. NJCEP offers financial incentives, programs, and services for residential, commercial, and municipal customers.

The program also offers a Community Energy Plan Grant for government entities (e.g., municipality, county, Green Team or environmental commission, or other Sustainable Jersey organization within a community or county). The grant will provide funding for an entity to create a Community Energy Master Plan to align local communities with the State Energy Master Plan.

New Jersey Department of Environmental Protection

Sewage Infrastructure Improvement Act Grants (NJAC 7:22)

New Jersey Sewage Infrastructure Improvement Act establishes comprehensive requirements for NJDEP and municipalities/authorities to address combined sewer overflows and stormwater management.

NJDEP issues permits and provides below-market interest rate loans through the Environmental Infrastructure Financing Program to municipalities for capital improvements that improve water quality. To prioritize wastewater projects under the Environmental Infrastructure Financing Program, projects are ranked to address higher State priorities or high-water quality problems or improvements.

Environmental Aid Act (NJSA 13:1H – 1 to 7) Office of Environmental Services Matching Grants Program for Local Environmental Agencies (NJAC 7:5)

State aid may be granted by the department to a local environmental agency for any activity that the agency is authorized to perform by law and for the preparation of an environmental index. An environmental index shall be a report on environmental conditions within the locality and community objectives concerning open areas, parks, water supply, solid waste, wildlife protection, soil resources, air pollution, water pollution, and other related issues. The department may provide technical assistance in addition to (or in lieu of) State aid to any local environmental agency for the purpose indicated in this act. The purpose of the funding dedicated under this act is to assist local environmental commissions and soil conservation districts with funding for a variety of local environmental projects,

including community education projects; environmental resource inventories; beach monitoring and management projects; environmental trail designs; lake rehabilitation studies; stream and water quality testing; wellhead delineation; GIS mapping projects; National Environmental Performance Partnership System indicator projects; and surveys of threatened and endangered species. The maximum annual grant is $2,500. Applicants must match at least 50 percent of the total cost of the project (NJDEP n.d.).

Projects funded by this grant are reported online. Examples of mitigation projects that have been funded in the past include Waterways Beach Monitoring and Management Strategy, Dune Project, Beach Protection and Storm Drainage Plan, Beach Storm Water Drainage Analysis, Stream Corridor/Greenway Protection Plan, Shoreline Bioengineering Demonstration and Outreach Project, Stream, and the Pamphlet/Education Project.

Drinking Water State Revolving Fund

The DWSRF program assists water systems in financing the cost of infrastructure through the use of federal and New Jersey Infrastructure Trust funds. Additionally, the Water Supply program provides operator licensing and training support as well as financial assistance through the DWSRF program.

The New Jersey Infrastructure Bank

The New Jersey Infrastructure Bank is an independent State Financing Authority responsible for providing and administering low interest rate loans to qualified municipalities, counties, regional authorities, and water purveyors in New Jersey. Two programs provide and administer low interest rate loans to qualified municipalities, counties, regional authorities, and water purveyors in New Jersey. Approximately $350 million is awarded annually.

- NJEIT for the purpose of financing water quality infrastructure projects that enhance ground and surface water resources, ensure the safety of drinking water supplies, protect the public health, and make possible responsible and sustainable economic development.
- The New Jersey Transportation Infrastructure Bank (NJTIB) is an independent State Financing Authority responsible for providing and administering low interest rate loans to qualified municipalities, counties, and regional authorities in New Jersey for the purpose of financing transportation quality infrastructure projects.

The New Jersey Infrastructure Bank provides principal forgiveness opportunities and better financing packages for those projects that implement climate change resilience measures.

Environmental Infrastructure Financing Program

Qualified borrowers receive loans in two equal parts: Approximately one half to three quarters comes from a 0-percent interest State Revolving Fund maintained by the NJDEP. The other portion comes from proceeds of highly rated tax-exempt revenue bonds sold by the Trust. Combining these two funds result in a loan that is 50 to 75 percent lower than traditional loan rates.

Dam Restoration Loan Program

The New Jersey Dam Restoration Loan Program was established by the “Dam, Lake, Stream, Flood Control, Water Resources and Wastewater Treatment Project Bond Act of 2003”, Public Law 2003, c. 162. The purpose is to provide loans to dam owners for dam restoration projects.

NJDEP Dam Restoration and Inland Water Projects Loan Program

The New Jersey Dam Restoration and Inland Water Projects Loan Program was established by the “Green Acres, Clean Water, Farmland and Historic Preservation Bond Act of 1992”, Public Law 1992, c. 88. The purpose is to provide loans to dam owners for dam restoration or inland waters projects.

New Jersey Water Bank

The New Jersey Water Bank (NJWB) is a partnership between the NJDEP and the New Jersey Environmental Infrastructure Trust (NJEIT) to provide low-cost financing for the design, construction, and implementation of projects that help protect and improve water quality and help ensure safe and adequate drinking water.

The NJWB finances projects by utilizing two funding sources. The Trust issues revenue bonds which are used in combination with zero percent interest funds to provide very low-interest loans for water infrastructure improvements. The NJDEP administers a combination of Federal State Revolving Fund capitalization grants, as well as the State's matching funds, loan repayments, State appropriations, and interest earned on such funds.

Blue Acres Program

The Blue Acres Program purchases flood-prone properties. This land preservation program assists local government units and nonprofits in their efforts to increase and preserve permanent outdoor recreation areas for public use and enjoyment, and conservation areas for the protection of natural resources such as waterways, wildlife habitat, wetlands, forests, and view sheds. A secondary benefit of these laws and rules is that flood-prone properties are often purchased and not available for future development. Funding for Blue Acres is a combination of dedicated state funding from the cooperate business tax and federal grants. To date, the program has received five state funding appropriations from 2009-2019, ranging from $3 million to $12 million to effectuate buyouts in flood-prone areas. Most recently, the 3 Garden State Preservation Trust appropriation recommendation proposed Blue Acres receive an infusion of $10.5 million ($10 million for buyouts and $500,000 for administrative costs).

NJDEP Grant and Loan Programs

NJDEP offers a wide variety of funding opportunities for local governments and other types of organizations to fund numerous environmentally based projects involving mitigation of hazards such as flooding and wildfires. This includes funding for: air quality, energy, and sustainability; compliance and enforcement; engineering and construction; land use management; local government assistance; natural and historic resources; site remediation and waste management programs; and water resource management.

Green Acres Program

Together with public and private partners, Green Acres has protected well over a million and a half acres of open space and provided hundreds of outdoor recreational facilities in communities around the State. Green Acres provides low interest (2 percent) loans and grants to municipal and county governments to acquire open space and develop outdoor recreation facilities. Green Acres also provides matching grants to nonprofit organizations to acquire land for public recreation and conservation purposes. Over the years, voters have authorized $3.3 billion in Green Acres funding, approving every bond referendum put before them.

New Jersey State Agriculture Development Committee

Open Space and Farmland Preservation Programs

Farmland and open space preservation programs are often funded partially through grants administered by the NJ State Agriculture Development Committee and the New Jersey Green Acres Program. The objective of these programs is to expand the existing county and municipal park systems. Many counties in New Jersey also support land preservation acquisition through open space funding.

New Jersey Redevelopment Authority

The New Jersey Redevelopment Authority (NJRA) is an independent state financing authority committed exclusively to the redevelopment of New Jersey's urban areas. NJRA offers several financing resources, including site acquisition funding, predevelopment assistance, several development assistance resources, and technical assistance.

New Jersey Small Cities Communities Development Block Grants

The New Jersey Small Cities Communities Development Block Grants provide funds for economic development, housing rehabilitation, community revitalization, and public facilities designated to benefit people with low and moderate incomes or to address recent local needs for which no other source of funding is available to non-entitlement counties and municipalities.

New Jersey Department of Community Affairs

The New Jersey Department of Community Affairs (NJDCA) is a state agency created to provide administrative guidance, financial support, and technical assistance to local governments, community development organizations, businesses, and individuals to improve the quality of life in New Jersey. NJDCA offers a wide range of programs, funding, and services that respond to issues of public concern, including fire and building safety, housing production, community planning and development, and local government management and finance. Among other funding sources, NJDCA administers CDBG funding and is typically the CDBG-Disaster Relief funding recipient for the State of New Jersey.

New Jersey Conservation Foundation

The New Jersey Conservation Foundation (NJCF) is a private, not-for-profit organization. Through acquisition and stewardship, NJCF protects strategic lands, promotes strong land use policies, and forges partnerships to achieve conservation goals. Grants are used to help fund preservation activities.

New Jersey Department of Transportation

Local Aid and Economic Development

NJDOT is committed to advancing projects that enhance safety, renew the aging infrastructure and the State's economy and support new transportation opportunities. The Transportation Trust Fund (TTF) provides the opportunity for State assistance to local governments for the funding of road, bridge, and other transportation projects. Annually, the TTF provides $400 million in State Aid to municipalities and counties for local transportation improvements. In addition, several programs which provide funding to counties and municipalities are funded with federal monies available through the Transportation Equity Act for the 21st Century (TEA 21) legislation.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFE-TEA) legislation provides the opportunity for funding assistance to local governments for road, bridge, and other transportation projects. NJDOT has established several local aid programs that provide financial support to counties and municipalities for capital improvements to transportation infrastructure.

New Jersey Turnpike Authority

Capital Program

The New Jersey Turnpike Authority (Authority) is dedicated to the safe and efficient movement of people and goods over two of the busiest toll roads in the United States – the New Jersey Turnpike (NJTP) and the Garden State Parkway (GSP). The Authority's highways are a critical link in the transportation network of the Northeast Corridor. Under the current 10-year, $7 billion capital program adopted in 2008, the Authority has expanded capacity, repaired deteriorating bridges, reconfigured entrance and exit ramps, improved maintenance yards and toll plazas, and expanded the use of technology for collecting and communicating information about roadway conditions. Under this capital program, the following projects have been advanced addressing hazard mitigation: Bridge Security Program, Forest Fire Prevention, Roadside Weather Information System (RWIS), Coastal Evacuation.

Through the Asset Management Program, the Turnpike Authority invests approximately $50 million annually on drainage-related projects to better equip the Authority's roadways in response to major rainfall events.

15.4.3 County

Passaic County and individual jurisdictions are (legally, not necessarily practically) able to fund mitigation projects though existing local budgets, local appropriations (including referendums and bonding), and a variety of federal and state loan and grant programs.

Passaic County Improvement Authority

The Passaic County Improvement Authority (PCIA) finances and plans public improvements within Passaic County. The PCIA provides cost-effective financing for projects and promotes shared services to reduce costs and improve efficiency among municipalities and school districts (Passaic County 2025). The PCIA's programs are part of the County's broader efforts to stimulate economic growth, improve infrastructure, and enhance the quality of life for residents. Financial opportunities offered by PCIA are listed below.

Gap Financing for Developers Program

The Gap Financing program supports economic development and revitalization efforts within the County. This program provides financial assistance to developers to bridge the gap between the total project cost and the amount of financing they can secure from traditional sources, making development projects financially viable, especially in targeted redevelopment areas.

Redevelopment Area Bond Financing Programs

The Redevelopment Area Bond Financing program allows municipalities to issue bonds to finance redevelopment projects, typically backed by the anticipated increase in property tax revenues resulting from the redevelopment.

Passaic County Banc Program

The Passaic County Banc Program, managed by the PCIA, is a lease/purchase program to help local government entities finance capital equipment and other essential assets at competitive, tax-exempt interest rates. The program guarantees up to $15 million of leased capital assets, allowing municipalities, school districts, and other governmental entities to acquire items such as energy efficiency equipment, office equipment, vehicles, machinery, and health and safety equipment. Benefits of the program include no down payment, below-market interest rates, quick turnaround, minimal paperwork, and flexible payment schedules (Passaic County 2025).

Open Space, Farmland, and Historic Preservation Advisory Committee

This Committee is responsible for managing and providing grants to municipal and non-profit partners for open space acquisition, park development, and historic preservation projects. The committee ensures that these efforts align with the County's goals of preserving open space, conserving natural resources, and enhancing the quality of life for residents. The Committee provides funding from the Open Space, Farmland, and Historic Preservation Trust Fund, which was established following voter approval in 1996. Grant programs delivered by the Committee are listed below (Passaic County 2025).

Open Space Acquisition Grant Program

The Passaic County Open Space Acquisition Grant Program supports the preservation and enhancement of open spaces within the County. The program provides grants to municipalities and qualified nonprofit organizations for the acquisition of land for open space, park development, and historic preservation projects. The program aims to conserve natural resources, protect scenic and historic sites, and improve the quality of life for residents by ensuring sustainable land use and recreational opportunities.

Historic Preservation Grant Program

The Passaic County Historic Preservation Grant Program supports the preservation of historic sites in the County. The program provides grants to municipal governments and nonprofit organizations for activities such as stabilization, rehabilitation, restoration, and preservation of historic properties. Eligible properties include those listed on local, state, or national registers of historic places, or those certified as eligible by the State Historic Preservation Office. Applications are reviewed by the Open Space Coordinator and the Open Space Advisory Committee, which evaluates each project based on eligibility criteria and the applicant's ability to carry out the proposed work (Passaic County 2025).

Park Development Grant Program

The Passaic County Park Development Grants Program supports the development and enhancement of parks within the County. This program provides grants to municipalities and qualified nonprofit organizations for projects that improve public parks and recreational facilities.

16. MITIGATION STRATEGY

This chapter presents mitigation strategies for Passaic County to reduce potential vulnerability and losses identified as concerns in the risk assessment portion of this plan. The Steering Committee reviewed the risk assessment and capability assessment to identify and develop these mitigation strategies.

Hazard mitigation reduces the potential impacts of, and costs associated with, emergency and disaster-related events. Mitigation actions address a range of impacts, including impacts on the population, property, the economy, and the environment.

Mitigation actions can include activities such as revisions to land-use planning, training and education, and structural and nonstructural safety measures.

16.1 PAST MITIGATION ACCOMPLISHMENTS

The County, through previous and ongoing hazard mitigation activities, has demonstrated that it is proactive in protecting its physical assets and citizens against losses from natural hazards. Examples of previous and ongoing actions and projects include the following:

- The County facilitated the development of the original Passaic County HMP. The current planning process represents the regulatory five-year plan update process, which includes the participation of all 16 jurisdictions in the County, along with key County and regional stakeholders.
- All municipalities participating in this HMP update participate in the National Flood Insurance Program (NFIP), which requires the adoption of FEMA floodplain mapping and certain minimum standards for building within the floodplain.
- Reports, plans, and studies relating to or including information on natural hazards or natural hazard policies affecting Passaic County have been reviewed and incorporated into this plan update as appropriate, as discussed in Chapter 2 and the list of references.

16.2 REVIEW AND UPDATE OF MITIGATION GOALS AND OBJECTIVES

This section documents describes the process of updating hazard mitigation goals and objectives for reducing or avoiding long-term vulnerabilities to identified hazards. For the purposes of this plan, goals and objectives are defined as follows:

"The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards."

44 CFR 201.6(c)(3)(i)

- **Goals** are general guidelines that explain what is to be achieved. They are usually broad, long-term, policy-type statements and represent global visions. Goals help define the benefits that the plan is trying to achieve. The success of the plan, once implemented, should be measured by the degree to which its goals have been met (that is, by the actual benefits in terms of hazard mitigation).
- **Objectives** are short-term aims that form a strategy or course of action to meet a goal. Unlike goals, objectives are stand-alone measurements of the effectiveness of a mitigation action. The objectives also are used to help establish priorities. Broadly defined mitigation objectives were eliminated from the updated strategy unless accompanied by discrete actions.

The Steering Committee reviewed the 2020 goals and objectives and made revisions for the 2025 update based on the following considerations:

- Hazard events and losses since the 2020 plan
- The updated hazard profiles and risk assessment
- The goals and objectives established in the State of New Jersey 2019 HMP
- The Planning Partnership's interests in integrating this plan with other planning mechanisms, including Passaic County and local risk management plans
- Direct input from the Steering Committee, stakeholders, and the public on how the County and jurisdictions need to move forward to best manage their hazard risk
- Discussions and research on existing authorities, policies, programs, resources
- Support for mitigation through the protection of natural systems

As a result of this review process, the goals and objectives for the 2025 update were updated to the following:

- Goal 1: Protect Life
  - Objective 1.1: Improve warning and emergency communications systems.
  - Objective 1.2: Reduce the impacts of hazards on people, property, and vulnerable populations.
  - Objective 1.3: Maintain and strengthen local regulatory standards, including full and effective building code enforcement, floodplain management, and other vulnerability-reducing regulations.
- Goal 2: Protect Property
  - Objective 2.1: Protect and increase resilience of critical facilities and lifelines.
  - Objective 2.2: Reduce repetitive and severe repetitive losses.
  - Objective 2.3: Protect environmental resources that serve a natural hazard mitigation function.
  - Objective 2.4: Encourage cost-effective and environmentally sound development and land use.
  - Objective 2.5: Facilitate development and timely submittal of project applications meeting state and federal guidelines for funding for repetitive and severe repetitive loss properties, hardening/retrofitting infrastructure and critical facilities, and the removal of repetitive properties with highest vulnerability rankings.
  - Objective 2.6: Encourage the use of green stormwater infrastructure and programs for retrofitting existing stormwater management systems in urban areas lacking retention or treatment solutions.
  - Objective 2.7: Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
- Goal 3: Increase Public Preparedness and Awareness
  - Objective 3.1: Improve education and outreach efforts regarding risk, the potential impacts of hazards, and the identification of specific measures that can be taken to reduce their impact.
  - Objective 3.2: Improve data collection, use, and sharing to reduce the impacts of hazards.
  - Objective 3.3: Provide for user-friendly hazard data accessibility for mitigation and other planning efforts and for private citizens.

- Goal 4: Develop and Maintain an Understanding of Risks from Hazards
  - Objective 4.1: Acquire and maintain detailed critical facilities and lifelines such that these sites can be prioritized and risk-assessed for possible mitigation actions.
  - Objective 4.2: Improve hazard data available to the County and participating communities for use in future planning efforts.
  - Objective 4.3: Incorporate new state and FEMA guidance, rules, and regulations into the HMP.
  - Objective 4.4: Strengthen understanding of, and adaptation to, a changing climate.
- Goal 5: Enhance County and Local Mitigation Capabilities to Reduce Hazard Vulnerabilities
  - Objective 5.1: Increase local government official awareness regarding mitigation planning, project identification and funding opportunities for mitigation.
  - Objective 5.2: Provide government officials and local practitioners with educational opportunities and information regarding best practices for hazard mitigation planning, project identification, and implementation.
  - Objective 5.3: Improve capabilities, coordination, and opportunities at municipal and County levels to plan and implement hazard mitigation projects, programs, and activities.
  - Objective 5.4: Support increased participation in the National Flood Insurance Program Community Rating System.
  - Objective 5.5: Support increased integration of municipal/County hazard mitigation planning and floodplain management with effective municipal/County zoning regulation, subdivision regulation, and comprehensive planning implementation.
  - Objective 5.6: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.
- Goal 6: Support Continuity of Operations Pre-, During and Post-Hazard Events
  - Objective 6.1: Ensure continuity of operations of essential County and municipal government services.
  - Objective 6.2: Increase resiliency by facilitating rapid disaster recovery.
  - Objective 6.3: Support and encourage the implementation of alternative energy sources.
- Goal 7: Reduce the Risk of Natural Hazards for Socially Vulnerable Populations and Underserved Communities
  - Objective 7.1: Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit socially vulnerable populations and underserved communities.
  - Objective 7.2: Promote sustainable and equitable land development practices that direct future development away from vulnerable areas.
  - Objective 7.3: Encourage and support multi-jurisdictional mitigation projects that leverage funding and support from multiple levels of government and community organizations.
- Goal 8: Increase Hazard Mitigation Collaboration Within Watersheds and Along Waterways That Are Flood Prone to Ensure Cohesive Mitigation Strategies
  - Objective 8.1: Establish multi-agency partnerships to coordinate hazard mitigation efforts within flood-prone watersheds and waterways.
  - Objective 8.2: Develop and implement integrated flood management plans that align with local, state, and federal guidelines.

- Objective 8.3: Facilitate community engagement and education programs to promote awareness and participation in cohesive flood mitigation strategies.

- Goal 9: Address Long-Term Vulnerabilities from High Hazard Dams
  - Objective 9.1: Ensure that dam infrastructure is maintained.
  - Objective 9.2: Support the identification and access to funding to repair, rehabilitate, replace or remove dams.
  - Objective 9.3: Ensure that emergency action plans are developed and updated.

16.3 MITIGATION STRATEGY DEVELOPMENT AND UPDATE

16.3.1 Update of Local Jurisdiction Mitigation Strategies

Review of Previous Actions

FEMA defines ***Mitigation Actions*** as specific actions that help to achieve the mitigation goals and objectives.

To evaluate progress on local mitigation actions, each Planning Partner completed a Mitigation Action Plan Review Worksheet that listed all actions identified for their jurisdiction in the prior (2020) plan. The Planning Partners indicated the status of each action ("In Progress," "Ongoing Capability," "No Progress," or "Complete") and provided comments to quantify the extent of progress and provide reasons for the level of progress. This information is included in the jurisdictional annexes in Volume II.

Mitigation actions identified as "Complete" have been removed from the Planning Partners' updated mitigation strategies. Actions identified as "No Progress" or "In Progress" have been carried forward for inclusion in the updated local mitigation strategies or discontinued for specific reasons. Updated action descriptions provide new details on these actions to better define the projects, identify benefits and costs, and improve implementation.

Actions from the previous plan identified as "Ongoing Capability" represent programs that are now fully integrated into the normal operational and administrative framework of the community. These are removed from the updated mitigation strategy (marked as "Discontinued") and identified in the capabilities assessment of each annex.

Identifying New Actions

At the kickoff and during subsequent local level planning meetings, all participating jurisdictions were further surveyed to identify completed mitigation actions, in progress actions, or ongoing capabilities, as well as potential new actions. Communities also were made aware of potential new mitigation actions as such actions became evident during the plan update process (e.g., through the capability assessment, risk assessment, or the public and stakeholder outreach process).

Developing the Overall Strategy

Beginning in February 2024, members of the Steering Committee and contract consultants worked directly with each jurisdiction (by phone, email, or virtual meetings) to update their annex with mitigation strategies that focus on well-defined, implementable projects that meet the definition or characteristics of mitigation. Mitigation actions were selected with a careful consideration of benefits (risk reduction, losses avoided), costs, and possible funding sources (including mitigation grant programs).

Three annex support meetings were held for Planning Partners to assist in the development of additional actions, foster collaboration between neighboring jurisdictions for mitigation actions, discuss actions that involve cooperation between the County and jurisdictions, and identify steps needed to complete the jurisdictional annexes.

Addressing Known Vulnerabilities

To help support the selection of an appropriate risk-based mitigation strategy, each annex includes a summary of hazard vulnerabilities. These were identified during the plan update process by Planning Partner representatives, through review of available plans and reports, or through the hazard profiling and risk assessment process.

A mitigation strategy workshop was conducted on November 14, 2024, for all participating jurisdictions to support the development of focused problem statements based on the impacts of natural hazards in the County and their communities. These problem statements provide a detailed description of a problem area, including its impacts on the jurisdiction; past damage; loss of service; etc. An effort was made to include the street address of the problem location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements form a bridge between the hazard risk assessment, which quantifies impacts on each community, and the development of actionable mitigation strategies.

Incorporating a Range of Action Types

Concerted efforts were made to ensure that Planning Partners develop updated mitigation strategies that cover the range of mitigation action types described in recent FEMA planning guidance (FEMA “Local Mitigation Planning Handbook” May 2023):

- **Local Plans and Regulations**—These actions include government authorities, policies or codes that influence the way land and buildings are developed and built.
- **Structure and Infrastructure Project**—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 community lifelines and other critical facilities. This type of action also involves projects to construct structures to reduce the impact of hazards.
- **Natural Systems Protection**—These are actions that minimize damage and losses to natural systems and preserve or restore their functions.
- **Education and Awareness Programs**—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 the National Flood Insurance Program, Community Rating System, StormReady (NOAA), and Firewise (NFPA) Communities.

Efforts were also made to develop mitigation strategies that cover the range of mitigation action types described in recent CRS guidance (FEMA 2018):

- **Preventive Measures**—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**—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**—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**—Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Structural Flood Control Projects**—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**—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

Protecting Critical Facilities

Planning Partner mitigation actions that address vulnerable critical facilities have been proposed in consideration of protection against 500-year events or worst-case scenarios. However, in the case of projects funded through federal mitigation programs, the level of protection may be influenced by cost-effectiveness as determined through a formal benefit-cost analysis. In the case of "self-funded" projects, local jurisdiction discretion must be recognized. Further, it must be recognized that the County and jurisdictions have limited authority with regard to mitigation at any level of protection over privately owned critical facilities.

Accounting for Climate Change

As discussed in the hazard profiles in this HMP, the long-term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards (e.g., flood, severe weather, severe winter weather, and wildfire). Communities are working to evaluate and recognize these long-term implications and to incorporate their mitigation strategies into planning and capital improvement updates.

16.3.2 Update of County Mitigation Strategy

The update of the County-level mitigation strategies included a review of progress on the actions identified in the 2020 HMP using a process similar to that used to review local jurisdiction mitigation strategy progress. County department representatives completed a Mitigation Action Plan Review Worksheet listing all County-level actions from the 2020 plan. They indicated the status of each action ("In Progress," "Ongoing Capability," "No Progress," or "Complete") and provided comments on each. This information is included in the County's annex in Volume II.

Actions identified as "Complete" have been removed from this plan update. Actions identified as "No Progress" or "In Progress" were carried forward for inclusion in the County's updated mitigation strategy or been discontinued for specific reasons. Actions identified as "Ongoing Capability" are included in the updated plan as capabilities identified in the capability assessment.

Throughout the course of the plan update process, additional regional and County-level mitigation actions were identified by the following processes:

- Review of the results and findings of the updated risk assessment
- Review of available regional and County plans, reports, and studies

- Direct input from County departments and other regional agencies, including:
  - Passaic County Office of Emergency Management
  - Passaic County Department of Public Works
  - Passaic County Department of Planning and Economic Development
  - Passaic County Department of Health and Human Services
  - Passaic County Soil and Water Conservation District
  - Passaic County Department of Public Works
  - Passaic County Water Authority
- Input received through the public and stakeholder outreach process

As discussed within the hazard profiles in this HMP, the long-term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards including drought, flood, severe weather, and severe winter weather. The County has included mitigation actions, including continuing and long-term planning and emergency management support, to address these long-term implications and potential impacts.

Various County departments and agencies included mitigation actions to address vulnerable critical facilities. These actions were proposed in consideration of protection against 500-year events or worst-case scenarios. However, for projects funded through federal mitigation programs, the level of protection can be influenced by cost-effectiveness, as determined through a formal benefit-cost analysis. For "self-funded" projects, local government authority can affect the ability to implement. Further, the County has limited authority over privately owned critical facility owners regarding mitigation at any level of protection.

16.3.3 Mitigation Best Practices

Catalogs of hazard mitigation best practices were developed that present a broad range of alternatives to be considered for use in the mitigation strategies, in compliance with 44 CFR Section 201.6(c)(3)(ii). One catalog was developed for each hazard of concern evaluated in this plan. The catalogs present alternatives that are categorized based on the following considerations:

- Who would have responsibility for implementation:
  - Individuals—personal scale
  - Businesses—corporate scale
  - Government—government scale
- What the alternatives would do:
  - Manipulate the hazard
  - Reduce vulnerability to the hazard
  - Reduce impacts from the hazard
  - Build local capacity to respond to or be prepared for the hazard

The alternatives presented include actions that will mitigate current risk from hazards and actions that will help reduce risk from changes in the impacts of these hazards resulting from climate change. Hazard mitigation actions recommended in this plan were selected from among the alternatives presented in the catalogs. The catalogs provide a baseline of mitigation alternatives that are backed by a planning process, are consistent with the established goals and objectives, and are within the capabilities of the Planning Partners to implement. Some of

these actions may not be feasible based on the selection criteria identified for this plan. The purpose of the catalogs was to provide a list of what could be considered to reduce risk from natural hazards within the planning area. Actions in the catalog that are not included for the partnership's mitigation strategy were not selected for one or more of the following reasons:

- The action is not feasible
- The action is already being implemented
- There is an apparently more cost-effective alternative
- The action does not have public or political support.

The catalogs are included in Appendix M.

16.3.4 Mitigation Strategy Evaluation and Prioritization

Section 201.c.3.iii of 44 CFR establishes how mitigation strategies are to be prioritized, implemented, and administered by local jurisdictions. For this plan update, each mitigation strategy was prioritized using criteria suitable for evaluating hazard mitigation strategies. This method provided a systematic approach that considered the opportunities and constraints of implementing each mitigation action. The Steering Committee chose a set of 14 evaluation criteria for this process:

- Life Safety—How effective will the action be at protecting lives and preventing injuries? Will the proposed action adversely affect one segment of the population?
- Property Protection—How significant will the action be at eliminating or reducing damage to structures and infrastructure? For example: development in the floodplain or high-risk areas?
- Cost-Effectiveness—Are the costs to implement the action commensurate with the benefits achieved?
- Political—Is there overall public support for the action? Is there the political will to support it? Is the action at odds with development pressures?
- Legal—Does the jurisdiction have the authority to implement the action?
- Fiscal—Can the action be funded under existing program budgets (i.e., is this action currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?
- Environmental—What are the potential environmental impacts of the action? Will it comply with environmental regulations? Are there co-benefits of this action?
- Social Vulnerability—Does the action benefit socially vulnerable populations and underserved communities? Additional considerations can include appropriate numerical measures of social vulnerability.
- Administrative—Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary? Does the scale and scope of the action align with the jurisdiction's capabilities?
- Hazards of Concern—Does the action address one or more of the jurisdiction's high-ranked hazards?
- Climate Change—Does the action incorporate climate change projections? Is the action designed to withstand/address long-term conditions?
- Timeline—Can the action be completed in less than five years?
- Community Lifelines—Does this action benefit community lifelines?

- Other Local Objectives—Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

Participating jurisdictions were asked to use these criteria to prioritize their identified mitigation actions. For each mitigation action, the jurisdictions assigned a numeric score for each of the 14 evaluation criteria:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Jurisdictions were asked to provide a summary of the rationale behind the numeric rankings assigned. The numerical results were totaled and then used by each jurisdiction to help prioritize the action or strategy as *low*, *medium*, or *high*. Actions that had a numerical value between 0 and 6 were categorized as *low priority*; actions with numerical values between 7 and 10 were categorized as *medium priority*; and actions with numerical values between 11 and 14 were categorized as *high priority*. While this provided a consistent, systematic methodology to support the evaluation and prioritization of mitigation actions, jurisdictions may have additional considerations that could influence their overall prioritization of mitigation actions.

It is noted that jurisdictions may be carrying forward mitigation actions from prior mitigation strategies that were prioritized using a different, but not inherently contrary, approach. Mitigation actions in the 2020 Passaic County HMP were qualitatively evaluated against the mitigation goals and objectives and other evaluation criteria. They were then prioritized into three categories: high, medium, and low. At their discretion, jurisdictions carrying forward prior actions were encouraged to re-evaluate their priority, particularly if conditions that would affect the prioritization criteria had changed.

For the plan update there has been an effort to develop more clearly defined and action-oriented mitigation strategies. These local strategies include actions that are seen by the community as the most effective approaches to advance their local mitigation goals and objectives within their capabilities. In addition, each Planning Partner was asked to develop problem statements. With active support from NJOEM planning staff, the partners were able to develop action-oriented and achievable mitigation strategies. For that reason, many of the actions in the updated mitigation strategy were ranked as *high* or *medium* priority, as reflective of the community's clear intent to implement them, available resources not-withstanding. In general, actions that would have had *low* priority rankings were appropriately screened out during the local action evaluation process.

16.3.5 Benefit/Cost Review

Section 201.6.c.3iii of 44 CFR requires the prioritization of the mitigation strategy to emphasize the extent to which benefits are maximized according to a benefit/cost review of the proposed projects. For all actions identified in the local strategies, jurisdictions identified the associated costs and benefits as follows:

- **Costs** presented include the total project estimation. This can include administrative, construction (engineering, design, and permitting), and maintenance costs.
- **Benefits** are the savings from losses avoided attributed to project implementation. These can include life safety, structure and infrastructure damages, loss of service or function, and economic and environmental damage and losses.

When possible, jurisdictions were asked to identify the actual or estimated dollar costs and associated benefits. Where estimates of costs and benefits were available, the ratings were defined follows:

Low < = $10,000 Medium = $10,000 to $100,000 High > = $100,000

Where numerical costs or benefits could not be quantified, jurisdictions were asked to evaluate project cost-effectiveness using qualitative *high*, *medium*, and *low* ratings based on the following definitions:

- Costs
  - High—Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (e.g., bonds, grants, and fee increases).
  - Medium—The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
  - Low—The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing program.
- Benefits
  - High—Project will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium—Project will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
  - Low—Long-term benefits of the project are difficult to quantify in the short-term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-effective.

For some of the Passaic County actions identified, the Planning Partnership may seek financial assistance under FEMA's Hazard Mitigation Assistance (HMA) programs. These programs require detailed benefit/cost analysis as part of the application process. The benefit/cost review applied for the prioritization of actions in this update did not include the level of detail required by FEMA for project grant eligibility under HMA grant programs. These analyses will be performed when funding applications are prepared, using FEMA's Benefit-Cost Analysis model.

The Planning Partnership is committed to implementing mitigation strategies with benefits that exceed costs. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Planning Partnership reserves the right to define benefits according to parameters that meet its needs and the goals and objectives of this plan.

17. PLAN MAINTENANCE AND IMPLEMENTATION PROCEDURES

This chapter details the formal process that will ensure that the Hazard Mitigation Plan remains an active and relevant document and that the Planning Partnership maintains its eligibility for applicable funding sources. The plan maintenance process includes a schedule for monitoring and evaluating the plan annually and producing an updated plan every five years. In addition, this chapter describes how public participation will be integrated throughout the plan maintenance and implementation process. It explains how the mitigation strategies outlined in this plan update will be incorporated into existing planning mechanisms and programs, such as comprehensive land use planning processes, capital improvement planning, and building code enforcement and implementation.

17.1 HMP COORDINATOR AND JURISDICTION POINTS OF CONTACT

The HMP Coordinator is assigned to manage the maintenance and update of the plan during its approval period (the five-year period between FEMA's approval of the plan and its expiration), with the following responsibilities:

- Convene the Planning Partnership
- Be the prime point of contact for questions regarding the plan and its implementation
- Coordinate the incorporation of additional information into the plan.
- Manage the monitoring, evaluation, and updating responsibilities identified in this section.

Currently, the Passaic County HMP Coordinator is designated as:

George Rosenthal, County OEM Coordinator
Office of Emergency Management
300 Oldham Road
Wayne, NJ 07470-2209
Phone: (973) 904-3621
Email: georger@passaiccountynj.org

Primary and secondary mitigation planning representatives (points of contact) as of the date of this plan are identified in each jurisdictional annex in Volume II. It will be the responsibility of each jurisdiction and its representatives to inform the HMP Coordinator of any changes in representation.

17.2 MAINTENANCE AND IMPLEMENTATION TASKS

The procedures for monitoring, evaluating, and updating the plan are provided below. The plan maintenance matrix shown in Table 17-1 provides a synopsis of responsibilities for plan monitoring, integration, evaluation, and update, which are discussed in further detail in the sections below.

Table 17-1. Plan Maintenance Matrix

Task	Approach	Timeline	Lead Responsibility	Support Responsibility
Monitoring	Planning partners to recommend update of mitigation strategies, progress toward implementation of actions, identification of new actions, and update of information on funding opportunities.	Each June or after the occurrence of a presidentially declared disaster	Jurisdictional points of contact identified in Volume II	Jurisdictional implementation lead identified in Volume II
Integrating	Distribute the safe growth worksheet (see Table 17-2) for annual review and update by all participating jurisdictions.	June each year with interim email reminders to address integration in county and municipal activities	HMP Coordinator and jurisdictional points of contact identified in Volume II	HMP Coordinator
Evaluating	Review the status of previous actions, as submitted by the monitoring task lead, and assess the effectiveness of the plan; compile and finalize update of mitigation strategy.	Updated progress report completed by September 30 of each year	Jurisdictional points of contact identified in Volume II	Alternate jurisdictional points of contact
Updating	Reconvene the Planning Partners to guide a comprehensive update to review and revise the plan.	Every 5 years or upon major update to Comprehensive Plan or after the occurrence of a major disaster	HMP Coordinator	Jurisdictional points of contacts identified in Volume II
Grant Monitoring	Notify Planning Partners about grant opportunities, maintain a list of eligible jurisdiction-specific projects for funding consideration, and notify Planning Partners of fiscal year mitigation priorities.	Continuously and as grant opportunities are identified	HMP Coordinator	Jurisdictional points of contacts identified in Volume II
Public Involvement	Maintain the HMP, inform the public of hazard events via social media outlets, promote educational workshops on hazard topics, and track and file public comments received regarding the HMP.	Continuously	HMP Coordinator and jurisdictional points of contact identified in Volume II	Alternate jurisdictional points of contact

17.2.1 Monitoring

The Planning Partnership will be responsible for monitoring and documenting annual progress on the plan. Each year, beginning one year after plan development, Passaic County and local Planning Partnership representatives will collect and process information from the persons responsible for initiating or overseeing the mitigation projects in each department, agency, and organization involved in implementing mitigation actions identified in their jurisdictional annexes. In the first year of the approval period, this will be accomplished using an online performance progress reporting system (the BATool[SM]), which will enable each planning partner to:

- Directly access mitigation actions
- Easily update the status of each project
- Document successes or obstacles to implementation
- Add or delete projects to maintain mitigation strategy implementation

Participating partners will be prompted by the tool to update progress on a quarterly basis, providing an incentive for them to refresh their mitigation strategies and to continue implementation of actions. This reporting system facilitates the sorting and prioritization of projects and will support the submittal of an increased number of project grant fund applications. Planning Partnership representatives will be expected to document the following:

- Progress on the implementation of mitigation actions
- Obstacles or impediments to implementation of actions
- Any grant applications filed on behalf of any of the participating jurisdictions
- Hazard events and losses occurring in their jurisdiction
- Additional mitigation actions believed to be appropriate and feasible
- Public and stakeholder input.

Plan monitoring for years 2 through 4 of the approval period will be addressed via the BATool[SM] or manually.

17.2.2 Integrating the HMP into Municipal Planning Mechanisms

Hazard mitigation is sustained action taken to reduce or eliminate the long-term risk to human life and property from natural hazards. Integrating hazard mitigation into a community's existing plans, policies, codes, and programs leads to development patterns or redevelopment that reduce risk from known hazards. The Planning Partnership was tasked with identifying how hazard mitigation is integrated into existing planning mechanisms. The jurisdictional annexes in Volume II describe how this is done for each planning partner. During this process, many partners recognized the importance and benefits of incorporating hazard mitigation into future local planning and regulatory processes.

Effective mitigation is achieved when hazard awareness and risk management approaches and strategies become an integral part of public activities and decision-making. Within the County, there are many existing plans and programs that support hazard risk management, and it is critical that this HMP integrate and coordinate with and complement those existing plans and programs.

The Capability Assessment (Chapter 15) provides a summary and description of the existing plans, programs, and regulatory mechanisms at all levels of government (federal, state, county, and local) that support hazard mitigation within the County. In the jurisdictional annexes in Volume II, each planning partner identified how it has integrated hazard risk management into its existing planning, regulatory, and administrative framework ("existing integration") and how they intend to promote this integration further ("opportunities for future integration").

It is the intention of Planning Partnership representatives to incorporate mitigation planning as an integral component of daily government operations. Planning Partnership representatives will work with local government officials to integrate the newly adopted hazard mitigation goals and actions into the general operations of government and partner organizations. The sample adoption resolution (Appendix A – Adoption Resolution) includes a resolution item stating the intent of the local governing body to incorporate mitigation planning as an integral component of government and partner operations. By doing so, the Planning Partnership anticipates that:

- Hazard mitigation planning will be formally recognized as an integral part of overall emergency management efforts.
- The HMP, comprehensive plans, emergency management plans and other relevant planning mechanisms will become mutually supportive documents that work in concert to meet the goals and needs of county residents.

Other planning processes and programs to be coordinated with the recommendations of the HMP include the following:

- Emergency response plans
- Training and exercise of emergency response plans
- Debris management plans
- Recovery plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Community wildfire protection plans
- Comprehensive flood hazard management plans
- Resiliency plans
- Community Development Block Grant Disaster Recovery action plans
- Public information and improved public participation
- Educational programs
- Continued interagency coordination

During the HMP annual review process, each participating jurisdiction will be asked to document how they are utilizing and incorporating the HMP into their day-to-day operations and planning and regulatory processes. Each municipality will also identify additional policies, programs, practices, and procedures that could be modified to accommodate hazard mitigation actions and include these findings and recommendations in the annual HMP progress report. The checklist in Table 17-2, adapted from FEMA's 2013 Local Mitigation Handbook, will help a community analyze how hazard mitigation is integrated into local plans, ordinances, regulations, and policies. Completing the checklist will help jurisdictions identify areas that currently integrate hazard mitigation and where to make improvements and reduce vulnerability to future development.

Table 17-2. Safe Growth Check List

Planning Mechanisms	Yes	No	How is it being done or how will this be utilized in the future?
Operating, Municipal, and Capital Improvement Program Budgets			
When constructing upcoming budgets, are hazard mitigation actions funded as budget allows?			
Are construction projects evaluated to see if they meet the hazard mitigation goals?			
Does the municipality review mitigation actions when allocating funding during annual budget adoption processes?			
Do budgets limit expenditures on projects that would encourage development in areas vulnerable to natural hazards?			

Planning Mechanisms	Yes	No	How is it being done or how will this be utilized in the future?
Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?			
Do budgets provide funding for hazard mitigation projects identified in the HMP?			
Human Resource Manual			
Do any job descriptions specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk?			
Building and Zoning Ordinances			
Prior to zoning changes or development permitting, does the municipality review the HMP and other hazard analyses to ensure consistent and compatible land use?			
Does the zoning ordinance discourage development or redevelopment within natural areas, including wetlands, floodways, and floodplains?			
Does the zoning ordinance contain natural overlay zones that set conditions			
Does the zoning ordinance require developers to take additional actions to mitigate natural hazard risk?			
Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?			
Does the zoning ordinance prohibit development within or filling of wetlands, floodways, and floodplains?			
Subdivision Regulations			
Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?			
Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?			
Do the regulations allow density transfers where hazard areas exist?			
Comprehensive Plan			
Are the goals and policies of the plan related to those of the HMP?			
Does the future land use map clearly identify natural hazard areas?			
Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?			
Land Use			
Does the future land use map clearly identify natural hazard areas?			
Do the land use policies discourage development or redevelopment in natural hazard areas?			
Transportation Plan			
Does the transportation plan limit access to hazard areas?			
Is transportation policy used to guide growth to safe locations?			
Are transportation systems designed to function under disaster conditions (e.g., evacuation)?			

Planning Mechanisms	Yes	No	How is it being done or how will this be utilized in the future?
Environmental Management			
Are environmental systems that protect development from hazards identified and mapped?			
Do environmental policies maintain and restore protective ecosystems?			
Do environmental policies provide incentives to development located outside protective ecosystems?			
Grant Applications			
Are data and maps used as supporting documentation in grant applications?			
Municipal Ordinances			
Is hazard mitigation a priority when updating municipal ordinances?			
Economic Development			
Does the local economic development group take into account information regarding identified hazard areas when assisting new businesses in finding a location?			
Public Education and Outreach			
Does the municipality have any public outreach mechanisms/ programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events?			

17.2.3 Evaluating

Evaluation of the mitigation plan is an assessment of whether the planning process and actions have been effective, whether the HMP goals are being achieved, and whether changes are needed. The HMP Coordinator will consult with the Planning Partnership members to evaluate the effectiveness of the plan implementation and to reflect changes that could affect mitigation priorities or available funding.

The status of the HMP will be discussed and documented at an annual plan review meeting of the Planning Partnership to be held either in person or via teleconference approximately one year from the date of local adoption of this update and successively thereafter. The HMP Coordinator will be responsible for calling participants and coordinating the annual plan review meeting and soliciting input regarding progress toward meeting plan goals and objectives. At least two weeks before the annual plan review meeting, the HMP Coordinator will advise Planning Partnership members of the meeting date, agenda, and expectations of the members. These evaluations will assess whether:

- Goals and objectives address current and expected conditions
- The nature or magnitude of the risks has changed
- Current resources are appropriate for implementing the HMP and if different or additional resources are now available
- Actions were cost effective
- Schedules and budgets are feasible
- Implementation problems are present, such as technical, political, legal, or coordination issues with other agencies

- Outcomes have occurred as expected
- Changes in local resources impacted plan implementation (e.g., funding, personnel, and equipment)
- New agencies, departments, and staff are included, involving other local governments as defined under 44 CFR 201.6.

Specifically, the Planning Partnership will review the mitigation goals, objectives, and activities using performance-based indicators, including:

- New agencies/departments
- Project completion
- Underspending/overspending
- Achievement of the goals and objectives
- Resource allocation
- Timeframes
- Budgets
- Lead/support agency commitment
- Resources
- Feasibility

Finally, the Planning Partnership will evaluate how other programs and policies have conflicted with or augmented planned or implemented mitigation actions and will identify policies, programs, practices, and procedures that could be modified to accommodate hazard mitigation actions ("Implementation of Mitigation Plan through Existing Programs" subsection below discusses this process). Other programs and policies can include those that address:

- Economic development
- Environmental preservation
- Historic preservation
- Redevelopment
- Health and safety
- Recreation
- Land use and zoning
- Public education and outreach
- Transportation

The Planning Partnership should refer to evaluation forms in the FEMA 386-4 guidance document to assist in the evaluation process (Worksheets #2 and #4; see Appendix F – Plan Review Tools). Further, the Planning Partnership should refer to any process and plan review deliverables developed by the County or participating jurisdictions as a part of the plan review processes established for prior or existing local HMPs within the county.

The HMP Coordinator will be responsible for preparing an annual HMP progress report for each year of the approval period based on the information provided by the Planning Partners and other information as appropriate. These annual reports will provide data for the five-year update of this HMP and will assist in pinpointing any implementation challenges. By monitoring the implementation of the HMP, the Planning Partnership will be able to assess which actions are completed, which are no longer feasible, and which require additional funding.

Following any major disasters, the HMP will be evaluated and revised to determine if the recommended actions remain relevant and appropriate. The risk assessment will also be revisited to see if any changes are necessary based on the pattern of disaster damage or if data listed in the hazard profiles of this plan has been collected to facilitate the risk assessment. This is an opportunity to increase the community's disaster resistance and build a better and stronger community.

17.2.4 Updating

44 CFR 201.6.d.3 requires that local hazard mitigation plans be reviewed, revised as appropriate, and resubmitted for approval to remain eligible for benefits awarded under DMA 2000. It is the intent of the Passaic County HMP Planning Partnership to update this plan on a five-year cycle from the date of initial plan adoption.

To facilitate the update process, the HMP Coordinator, with support of the Planning Partnership, will use the second annual Planning Partnership meeting to develop and commence the implementation of a detailed plan update program. Prior to the five-year update, the HMP Coordinator will invite representatives from the New Jersey Office of Emergency Management to provide guidance on plan update procedures. At a minimum, this will establish who will be responsible for managing and completing the plan update effort, items that need to be included in the updated plan, and a detailed timeline with milestones to ensure that the update is completed according to regulatory requirements. At this meeting, the project team will determine what resources will be needed to complete the update and seek to secure these resources.

Following each 5-year update of the HMP, the updated plan will be distributed for public comment. After all comments are addressed, the HMP will be revised and distributed to all Planning Partners.

17.2.5 Grant Monitoring and Coordination

Passaic County intends to be a resource to the Planning Partnership in the support of project grant writing and development. The degree of this support will depend on the level of assistance requested by the Planning Partners during openings for grant applications. As part of grant monitoring and coordination, Passaic County intends to provide the following:

- Notification to Planning Partners about impending grant opportunities
- A current list of eligible, jurisdiction-specific projects for funding pursuit consideration
- Notification about mitigation priorities for the fiscal year to assist the Planning Partners in the selection of appropriate projects.

17.2.6 Continued Public Involvement

The Planning Partners are committed to the continued involvement of the public in the hazard mitigation process. This HMP update will continue to be posted online at the following link: https://www.passaiccountynjhmp.com/. In addition, public outreach and dissemination of the HMP will include the following:

- Links to the plan on local websites of each jurisdiction with capability
- Continued utilization of existing social media outlets (Facebook, X) to inform the public of natural hazard events, such as floods and severe storms; the public can be educated via the jurisdictional websites on how these applications can be used in an emergency situation

- Promotion of articles or workshops on hazards to educate the public and keep them aware of the dangers of hazards

The HMP Coordinator will be responsible for receiving, tracking, and filing public comments regarding this HMP. The public will have an opportunity to comment on the plan via the hazard mitigation website at any time. The HMP Coordinator will ensure that:

- Public and stakeholder comments and input on the plan, and hazard mitigation in general, are collected, recorded, and addressed as appropriate.
- The Passaic County HMP website is maintained and updated as appropriate.
- Copies of the latest approved plan are available for review at appropriate county facilities, along with instructions to facilitate public input and comment on the plan.

Public notices, including media releases, are made (as appropriate) to inform the public of the availability of the plan, particularly during plan update cycles.

ACRONYMS AND ABBREVIATIONS

A

AARP: American Association of Retired Persons

ACS: American Community Survey

ADA: Americans with Disabilities Act

ALICE: Asset Limited, Income Constrained, Employed

APA: Approvable Pending Adoption

ASCE: American Society of Civil Engineers

ASDSO: Association of State Dam Safety Officials

AT&T: American Telephone and Telegraph Company

B

BATool[SM]: Baseline Assessment Tool

BCA: Benefit Cost Analysis

BCEGS: Building Code Effectiveness Grading Schedule

BFE: Base Flood Elevation

BOH: Board of Health

BPU: Board of Public Utilities

C

CAC: Community Assistance Contacts

CART: County Animal Response Team

CAFRA: Coastal Area Facility Review Act

CAP: Compliance Assistance Program

CAV: Community Assistance Visits

CAT: Community Access Transit

CCAHA: Conservation Center for Art and Historic Artifacts

CDBG: Community Development Block Grant

CDBG-DR: Community Development Block Grant – Disaster Recovery

CDBG-MIT: Community Development Block Grant Mitigation

CDC: Center for Disease Control

CEDS: Comprehensive Economic Development Strategy

CERT: Community Emergency Response Team

CEO: Chief Executive Officer

CERCLIS: Comprehensive Environmental Response, Compensation and Liability Information System

CFM: Certified Floodplain Manager

CFR: Code of Federal Regulations

COOP: Continuity of Operations Plan

COVID: Coronavirus Disease

CPR: Cardiopulmonary Resuscitation

CR: County Route

CRS: Community Rating System

CSV: Comma-separated Values

CTP: Cooperating Technical Partners

CZM: Coastal Zone Management

D

DEM: Digital Elevation Model

DEP: Department of Environmental Protection

DFE: Design Flood Elevation

DFIRM: Digital Flood Insurance Rate Map

DHS: Department of Homeland Security

DMA: Disaster Mitigation Act

DMV: Department of Motor Vehicles

DOT: Department of Transportation

DPW: Department of Public Works

DR: Major Disaster Declaration

DWSRF: Drinking Water State Revolving Fund

E

EAP: Education and Awareness Programs

EAP: Emergency Action Plan

EC: Environmental Commission

EDC: Environmental Disposal Corporation

EF Scale: Enhanced Fujita Tornado Intensity Scale

EIA: Energy Information Administration

EM: Emergency Declaration

EMPG: Emergency Management Performance Grant

EMS: Emergency Medical Service

EO: Executive Order

EOC: Emergency Operations Center

EOP: Emergency Operations Plan

EPA: Environmental Protection Agency

ERF: Energy Resiliency Framework

ES: Emergency Services

ESF: Emergency Support Function

ESRI: Environmental Systems Research Institute

EWP: Emergency Watershed Protection

F

FEMA: Federal Emergency Management Agency

FERC: Federal Energy Regulatory Commission

FHWA: Federal Highway Administration

FIRM: Flood Insurance Rate Map

FIS: Flood Insurance Study

FMA: Flood Mitigation Assistance

FPA: Floodplain Administrator

FTA: Federal Transit Authority

FY: Fiscal Year

G

GDRO: Governor's Disaster Recovery Office

GIS: Geographic Information System

GPS: Global Positioning Station

GSP: Garden State Parkway

H

HAZMAT: Hazardous Materials

HAZUS: Hazards United States

HEP: Harbor and Estuary Program

HHPD: High Hazard Potential Dams

HMA: Hazard Mitigation Assistance

HMGP: Hazard Mitigation Grant Program

HMP: Hazard Mitigation Plan

HIFLD: Homeland Infrastructure Foundation Level Data

HR: Human Resources

HSGP: Homeland Security Grant Program

HUD: U.S. Department of Housing and Urban Development

HVAC: Heating, Ventilation, and Air Conditioning

I

IA: Individual Assistance

IBC: International Residential Code

IIJA: Infrastructure Investment and Jobs Act

IPAWS: Integrated Public Alert and Warning System

IPCC: Intergovernmental Panel on Climate Change

ISO: International Organization for Standardization

IT: Information Technology

J

JCP&L: Jersey Central Power and Light

K

KBDI: Keetch-Byram Drought Index

L

LDR: Land Development Regulations

LEED: Leadership in Energy and Environmental Design

LGIA: Limited Growth Investment Areas

LLC: Limited Liability Company

LOSAP: Length of Service Award Program

LPR: Local Plans and Regulations

LUB: Land Use Board

LWCF: Land and Water Conservation Fund

M

MH: Multi-Hazard

MLUL: Municipal Land Use Law

MMI: Modified Mercalli Intensity

MOU: Memorandum of Understanding

MPH: Miles Per Hour

MRP: Mean Return Period

MSWMP: Municipal Stormwater Management Plan

MUA: Municipal Utility Authority

N

N/A: Not Applicable

NA: Not Applicable

NAICS: North American Industry Classification System

NAS: National Academy of Sciences

NASA: National Aeronautics and Space Administration

NCDC: National Climatic Data Center

NCEI: National Centers for Environmental Information

NEHRP: National Earthquake Hazard Reductions Program

NDMC: National Drought Mitigation Center

NDSP: National Dam Safety Program

NEP: National Estuary Program

NESEC: Northeast States Emergency Consortium

NFDRS: National Fire Danger Rating System

NFIP: National Flood Insurance Program

NFPA: National Fire Prevention Association

NHC: National Hurricane Center

NID: National Inventory of Dams

NIDIS: National Integrated Drought Information System

NIMS: National Incident Management System

NIST: National Institute of Standards and Technology

NJ: New Jersey

NJ Transit: New Jersey Transit

NJAC: New Jersey Administrative Code

NJADAPT: New Jersey Climate Adaptation Alliance

NJAW: New Jersey American Water

NJCEP: New Jersey Clean Energy Program

NJCF: New Jersey Conservation Foundation

NJDCA: New Jersey Department of Community Affairs

NJDEP: New Jersey Department of Environmental Protection

NJDOH: New Jersey Department of Health

NJDOT: New Jersey Department of Transportation

NJEIT: New Jersey Environmental Infrastructure Trust

NJFHADF: New Jersey Flood Hazard Area Design Flood

NJFFS: New Jersey Forestry Fire Service

NJGIN: New Jersey Geographic Information Network

NJGWS: New Jersey Geological and Water Survey

NJOEM: New Jersey Office of Emergency Management

NJOIT: New Jersey Office of Information Technology

NJPDES: New Jersey Pollutant Discharge Elimination System

NJRA: New Jersey Redevelopment Authority

NJSA: New Jersey State Act

NJSEA: New Jersey Sports and Exposition Administration

NJSPC: New Jersey State Planning Commission

NJTIB: New Jersey Infrastructure Bank

NJTPA: New Jersey Transportation Planning Authority

NJWB: New Jersey Water Bank

NJWSA: New Jersey Water Supply Authority

NLCD: National Land Cover Database

NLDN: National Lightning Detection Network

NOAA: National Oceanic and Atmospheric Administration

NPL: National Priorities List

NPS: National Park Service

NR: Natural Resource Protection

NRI: National Resources Inventory

NRCS: Natural Resources Conservation Service

NSIDC: National Snow and Ice Data Center

NSP: Natural Systems Protection

NWS: National Weather Service

NYNJPA: Port Authority of New York and New Jersey

O

OEM: Office of Emergency Management

ONJSC: Office of the New Jersey State Climatologist

OPA: Office of Planning Advocacy

P

PA: Public Assistance

PDM: Pre-Disaster Mitigation

PDSI: Palmer Drought Severity Index

PGA: Peak Ground Acceleration

PI: Public Information

PL: Public Law

PP: Property Protection

PR: Preventative Measures

PSAP: Public Safety Answering Point

PSE&G: Public Service Electric and Gas

Q

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R

RAISE: Rebuilding American Infrastructure with Sustainability and Equity

RCV: Replacement Cost Value

RFP: Request for Proposal

RFQ: Request for Qualifications

RL: Repetitive Loss

RSI: Regional Snowfall Index

RTP: Recreational Trails Program

RSIS: Residential Site Improvement Standards

RWIS: Roadside Weather Information System

S

SAFE-TEA: Safe, Accountable, Flexible, Efficient Transportation Equity Act

SARS: Severe Acute Respiratory Syndrome

SAR: Search and Rescue

SBA: Small Business Administration

SFHA: Special Flood Hazard Area

SHMO: State Hazard Mitigation Officer

SHMP: State Hazard Mitigation Plan

SHMT: State Hazard Mitigation Team

SIP: Structure and Infrastructure Project

SLOSH: Sea, Lake, and Overland Surge from Hurricanes

SP: Structural Flood Control Projects

SPC: Storm Prediction Center

SPI: Standard Precipitation Index

SRL: Severe Repetitive Loss

SSHWS: Saffir-Simpson Hurricane Wind Scale

SSBG: Social Services Block Grant

SSTS: Sanitary Sewer Transmission System

STAB: Sewerage Transmission Advisory Board

STAP: Scientific and Technical Advisory Panel

STAPLEE: Social, Technical, Administrative, Political, Legal, Economic, and Environmental

SVI: Social Vulnerability Index

SWMP: Storm Water Management Program

SWPPP: Stormwater Pollution Prevention Plan

SWTP: Surface Water Treatment Plant

T

TBD: To Be Determined

TEA: Transportation Equity Act

THIRA: Threat & Hazard Identification and Risk Assessment

TIFF: Tagged Image Fire Format

TRI: Toxics Release Inventory

TTF: Transportation Trust Fund

TV: Television

U

UASI: Urban Areas Security Initiative

UCC: Uniform Construction Codes

UHI: Urban Heat Index

US: United States

USA: United States of America

USACE: United States Army Corp of Engineers

USC: United States Code

USDA: U.S. Department of Agriculture

USDM: United States Drought Monitor

USEDA: United States Economic Development Administration

USEPA: U.S. Environmental Protection Agency

USGS: U.S. Geological Survey

USFS: United States Forest Service

V

VFD: Volunteer Fire Department

VH: Very High

W

WCT: Wind Chill Temperature

WFO: Weather Forecasting Office

WHO: World Health Organization

WHP: Wildfire Hazard Potential

WMA: Watershed Management Area

WMP: Wastewater Management Plans

WQMP: Water Quality Management Planning

WUI: Wildland Urban Interface

WWTP: Wastewater Treatment Plant

X

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Y

-

Z

ZBA: Zoning Board of Adjustment

ZIP: Zone Improvement Plan

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None

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Passaic County Hazard Mitigation Plan

2025 Update

Volume II—Jurisdictional Annexes



TETRA TECH

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1. INTRODUCTION

1.1 BACKGROUND

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

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

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

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

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

1.2 PLANNING PARTNER INVOLVEMENT

1.2.1 Initial Solicitation and Letters of Intent

Passaic County solicited the participation of all eligible jurisdictions in the County at the commencement of this project. All jurisdictions interested signed a letter of intent and/or a resolution committing their participation and resources to the development of the Passaic County HMP (Appendix A). The following is a list of the jurisdictions that participated in the update process and have met the minimum requirements of participation as established by the County and the Steering Committee:

- Passaic County
- Bloomingdale (B)
- Clifton (C)
- Haledon (B)
- Hawthorne (B)
- Little Falls (Twp)
- North Haledon (B)
- Passaic (C)
- Paterson (C)
- Pompton Lakes (B)
- Prospect Park (B)
- Ringwood (B)
- Totowa (B)
- Wanaque (B)
- Wayne (Twp)
- West Milford (Twp)
- Woodland Park (B)

1.2.2 Planning Partner Expectations

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

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

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

- Assist with the identification of stakeholders within the community who should be informed and potentially involved with the planning process.
- Complete data and information collection survey forms in a timely manner.
- Identify specific mitigation actions to address each of the natural hazards posing significant (or high or medium) risk to the community.
- Involve the local NFIP Floodplain Administrator in the planning process.
- Review draft plan sections when requested and provide comment and input as appropriate.
- Adopt the plan by resolution of the local governing body after FEMA conditional approval.
- Periodically provide the Steering Committee with reports of municipal staff and volunteer labor spent on the planning process.

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

1.3 JURISDICTIONAL ANNEX PREPARATION PROCESS

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

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

1.3.1 Incorporation of Information from Previous HMP

In order to facilitate the update of the jurisdictional annexes, data from the 2020 Passaic County HMP annexes was transferred to the most current annex format, which has evolved to meet changing federal and state criteria. Clear instructions were provided to the representatives of each planning partner. This transfer of information provided a basis to address the following:

- Changes in local capabilities and vulnerabilities
- The current status of the 2020 HMP mitigation strategy
- A new mitigation strategy to address identified issues and to increase community resiliency

1.3.2 Kickoff Meeting

The County invited all municipalities to participate in a planning partner kickoff meeting held on February 20, 2024, to provide an overview of the planning process, including meetings and worksheets that would be used to gather information for annex preparation. Key elements of the worksheets were discussed and subsequently completed by the appropriate jurisdictional personnel for each worksheet. The worksheets were collected, and the information

was incorporated into each jurisdictional annex. In the event additional information was needed, the jurisdictional point of contact was contacted to provide more input into their annex.

1.3.3 Hazard Ranking Exercise

At the risk assessment meeting on November 14, 2024, the consultant summarized the findings of the risk assessment for the hazards of concern evaluated in this HMP, including an initial ranking of hazards using the risk-related ranking methodology described in Volume I. Each planning partner was asked to review the hazard ranking for its jurisdiction and revise as appropriate based on history of events, probability of occurrence, and the potential impact on people, property, and the economy. This exercise familiarized the planning partners with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as “high” for each jurisdiction as a result of this exercise were considered to be priorities for identifying appropriate mitigation actions, although jurisdictions also identified actions to mitigate “medium” or “low” ranked hazards as appropriate.

1.3.4 Mitigation Strategy Workshop

A mitigation strategy workshop was held on November 14, 2024, to provide an overview on how to develop a strong mitigation strategy. In preparation for this workshop, the consultant provided a list of problem areas and vulnerabilities identified during the planning process, along with feedback from the citizen survey, to support the development of relevant projects for the mitigation strategy. Workshop participants received the following FEMA publications to use as a resource as part of a comprehensive review of all possible activities and mitigation measures to address hazards of concern:

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

This workshop included the development of focused problem statements based on the impacts of natural hazards in the County and its communities. These problem statements provide detailed descriptions of problem areas, including known impacts on the jurisdiction (past damage, loss of service, etc.). Where possible, the statements include the street address of the problem location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing site conditions (topography, terrain, hydrology). The problem statements form a bridge between the risk assessment (which quantifies impacts on each community), the capability assessment (which identifies capabilities for reducing hazard risks and supporting hazard mitigation), and the development of actionable mitigation strategies.

The County and the mitigation consultant worked with each jurisdiction to identify clear, implementable mitigation actions and to further support the completion of the jurisdictional annexes. The Action Worksheet template and instructions are provided in Appendix E.

1.4 JURISDICTIONAL ANNEX FORMAT

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

- Providing a locally relevant synthesis of the overall mitigation plan that can be readily presented, distributed, and maintained

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

The following are the elements of the jurisdictional annex.

- **Section X.1: Hazard Mitigation Planning Team:** Identifies the hazard mitigation planning primary and alternate contacts and floodplain administrator. Provides details on which departments were involved in the development of the jurisdictional annex. The widest range of departments, stakeholders, and persons familiar with the jurisdiction should be involved in the development of the jurisdictional annexes. Further detail on participants is provided in Volume I.
- **Section X.2: Community Profile:** Provides a profile of the jurisdiction, including population and socially vulnerably populations.
- **Section X.3: Jurisdictional Capability Assessment and Integration:** Provides an inventory and evaluation of the jurisdiction's tools, mechanisms, and resources available to support hazard mitigation and natural hazard risk reduction. Tables provide an inventory of the jurisdiction's planning, regulatory, administrative, technical, and fiscal capabilities, its level of participation in state and federal programs designed to promote and incentivize local risk reduction efforts, and its adaptive capacity to adjust to damage and respond to consequences.
- **Section X.4: National Flood Insurance Program (NFIP) Compliance:** Summarizes jurisdiction-specific information related to managing and regulating the regulatory floodplain, including current and future compliance with the NFIP.
- **Section X.5: Growth/Development Trends:** Summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.
- **Section X.6: Jurisdictional Risk Assessment:** Provides information regarding each jurisdiction's vulnerability to the identified hazards. Full data and information on the hazards of concern, the methodology used to develop the vulnerability assessments, and the results of those assessments that serve as the basis of these local hazard rankings may be found in Volume I.
  - ***Hazard Area:*** Each annex includes a map (or series of maps) illustrating identified hazard zones and critical facilities. The maps also show areas of known or anticipated future development, as available.
  - ***Hazard Event History:*** Identifies hazard events that have caused significant impacts within the jurisdiction, including a summary characterization of those impacts identified by the jurisdiction.
  - ***Hazard Ranking and Vulnerabilities:*** Each jurisdiction has differing degrees of risk exposure and vulnerability. The local hazard ranking identifies each jurisdiction's local degree of risk to each hazard, supporting the selection and prioritization of actions to reduce the highest levels of risk for each community.
  - ***Critical Facilities:*** Identifies potential flood losses to critical facilities in the jurisdiction based on the flood vulnerability assessment process presented in Volume I.
  - ***Identified Issues:*** Presents other specific hazard vulnerabilities as identified by the jurisdiction.

- **Section X.7: Mitigation Strategy and Prioritization:** Discusses and provides the status of past mitigation actions and status and describes proposed hazard mitigation actions and prioritization.
  - ***Past Mitigation Action Status:*** Where applicable, a review of progress on the jurisdiction's prior mitigation strategy is presented, identifying the disposition of each prior action in the jurisdiction's updated mitigation strategy. Other completed or ongoing mitigation activities that were not specifically part of a prior local mitigation strategy may be included in this subsection as well.
  - ***Completed Mitigation Actions Not Identified in the Previous Mitigation Strategy:*** Other completed or ongoing mitigation activities that were not specifically part of a prior local mitigation strategy may be included in this subsection as well.
  - ***Proposed Hazard Mitigation Actions for the Plan Update:*** Tables and action worksheets at the end of each annex present the jurisdiction's updated mitigation strategy, a summary of the local mitigation strategy prioritization and a summary of the action categories and hazards addressed.

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

1.5 COVERAGE UNDER THE PLAN

Of the 17 original planning partners, all have fully met the participation requirements specified by the Steering Committee and have annexes included in this volume. Those that did not meet the requirements will not be able to seek FEMA or state approval at the time of plan submittal, nor will they be eligible to obtain FEMA grant funding. Table 1-1 lists the status of each jurisdiction. Note that participation in scheduled Planning Partnership meetings provides only a partial indication of the level of participation of each jurisdiction. Appendices in Volume I provide details on further participation and meeting attendance.

Table 1-1. Jurisdictional Status

	Letter of Intent to Participate	Attended Workshops, Meetings, and Calls	Provided Update on Past Projects	Submitted Mitigation Actions for Current Plan	Seeking Approval for Adoption (meets all previous requirements)
Passaic County	N/A	X	X	X	X
Bloomingdale (B)	X	X	X	X	X
Clifton (C)	X	X	X	X	X
Haledon (B)	X	X	X	X	X
Hawthorne (B)	X	X	X	X	X
Little Falls (Twp)	X	X	X	X	X
North Haledon (B)	X	X	X	X	X
Passaic (C)	X	X	X	X	X
Paterson (C)	X	X	X	X	X
Pompton Lakes (B)	X	X	X	X	X
Prospect Park (B)	X	X	X	X	X
Ringwood (B)	X	X	X	X	X
Totowa (B)	X	X	X	X	X
Wanaque (B)	X	X	X	X	X
Wayne (Twp)	X	X	X	X	X
West Milford (Twp)	X	X	X	X	X
Woodland Park (B)	X	X	X	X	X

2. COUNTY OF PASSAIC

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

2.1 HAZARD MITIGATION PLANNING TEAM

The County of Passaic identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many County departments. The Passaic County Office of Emergency Management represented the community on the Passaic County HMP Planning Partnership and Steering Committee 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 2-1 summarizes County officials who participated in the development of the annex and in what capacity. Additional documentation of the County's planning activities through Planning Partnership meetings is included in Volume I.

Table 2-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: George Rosenthal, OEM Coordinator, Office of Emergency Management Address: 300 Oldham Road Wayne, NJ 07470 Phone Number: 973-904-3621 Email: georger@passaiccountynj.org	Name/Title: Robert Scott, Deputy Coordinator, Office of Emergency Management Address: 300 Oldham Road Wayne, NJ 07470 Phone Number: 201-697-3890 Email: rscott@passaiccountynj.org
National Flood Insurance Program Floodplain Administrator	
This is reported at the municipal level.	
Additional Contributors	
Name/Title: George Rosenthal, OEM Coordinator, Office of Emergency Management Method of Participation:	
Name/Title: Robert Scott, Deputy Coordinator, Office of Emergency Management Method of Participation:	
Name/Title: Maria Dombayci, Coordinator, Office of Emergency Management Method of Participation:	
Name/Title: Andras Holzman, Director of Planning Method of Participation: Participated on the steering committee and throughout the planning process.	
Name/Title: Dr. Arti Kakka, Director of Human Services Method of Participation: Participated on the steering committee and throughout the planning process.	
Name/Title: Jonathan Pera, County Engineer Method of Participation: Participated on the steering committee and throughout the planning process.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Kelly Ruffel, Director of Cultural and Historic Affairs Method of Participation: Participated on the steering committee and throughout the planning process.	
Name/Title: Kenneth Simpson, Supervisor of Roads Method of Participation: Participated on the steering committee and throughout the planning process.	
Name/Title: George Rosenthal, Sheriff's Office Method of Participation: Participated on the steering committee and throughout the planning process.	

2.2 COMMUNITY PROFILE

2.2.1 Brief History

Passaic County was formed in 1837 from sections of Bergen and Essex Counties. The County is situated in northeastern New Jersey and is made up of 16 municipalities that span approximately 197 square miles. Passaic County is bordered to the north by New York State, to the south by Essex and Morris Counties, to the east by Bergen County, and to the west by Sussex County. The boundaries of the County naturally divide it into northern and southern halves. The northern section of Passaic County is older suburban and rural to semi-rural, entirely in the Highlands Preservation and Planning Areas, with scenic vistas and environmentally sensitive forested areas surrounding reservoirs. Southern Passaic County is suburban and urban and includes the Cities of Passaic, Clifton, and Paterson (Passaic County HMP 2020).

2.2.2 Location

The County is located in the U.S. Census-defined New York-New Jersey Metropolitan Statistical Area. It is located 11.5 miles from the George Washington Bridge, 13 miles from the Lincoln Tunnel, and 17 miles from the Holland Tunnel. Because of its central location, Passaic County boasts easy accessibility by automobile, bus, freight, passenger train, and air from the Tri-State Region. Passaic County is at the crossroads of a number of New Jersey's major interstate highways (Routes 80, 287, 3, 20, 21, 23, 46, the Garden State Parkway, and the New Jersey Turnpike), which link the County to New York, Pennsylvania, and Connecticut. The County's location also provides ready accessibility to three international airports (Newark Liberty, LaGuardia, and John F. Kennedy) along with major international shipping ports (Port Newark and the Elizabeth Marine Terminal). Major freight rail service includes Norfolk Southern and New York, Susquehanna and Western (Passaic County HMP 2020).

Governing Body Format

Passaic County is governed by a seven-member Board of County Commissioners. Each County Commissioner is elected at large for a three-year term. The board is headed by a director, who is selected for a one-year term at the board's annual reorganization meeting (at the first meeting of the year in January). Under Passaic County's commission form of government, County Commissioners discharge both executive and legislative responsibilities.

2.2.3 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Passaic was 524,118, a 4.6 percent increase 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 2020 U.S. Census indicates that 6.4 percent of the population is 5 years of age or younger, 15.1 percent is 65 years of age or older, 13.3 percent is non-English speaking, 13.3 percent is below the poverty threshold, and 9.0 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

2.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

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

2.3.1 Planning and Regulatory Capability and Integration

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

Table 2-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Zoning/Land Use Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Subdivision Code	Yes	Subdivision Resolution, amended 2014	County	Passaic County Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? All subdivision of land within Passaic County shall be submitted to the County Planning Board for review. All subdivision of land within Passaic County that affects County roads or drainage facilities as set forth herein shall be submitted to the County Planning Board for review and approval. A subdivision of land within Passaic County that has been classified as a minor subdivision or is exempt from municipal approval pursuant to 40:55-1. 14 and does not abut or affect County roads or drainage facilities shall be deemed to have been reviewed by the County Planning Board upon receipt of a copy of the sketch plat of said subdivision and shall not require response from the County Planning Board to the municipal agency, however the County Planning Board reserves the right to issue comments thereon. A complete subdivision application shall be submitted to the Passaic County Planning Board by the applicant. Incomplete applications shall be returned, if possible, to the applicant with a checklist of missing items.				
Site Plan Code	Yes	Site Plan Resolution, amended 2014	County	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The County Planning Board conducts site plan review for land development along county roads or areas affecting county drainage facilities. For these types of projects, the County Planning Board must approve for development. All other development, the site plan review process is done at the municipal level.				
Stormwater Management Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this?	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
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

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?
- 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.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Environmental Protection Ordinance(s)	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Flood Damage Prevention Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Wellhead Protection	No	-	County and Local	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
PLANNING DOCUMENTS				
Comprehensive/Master Plan	Yes	Passaic County Master Plan	County	Planning and Economic Development
How has or will this be integrated with the HMP and how does this reduce risk? Contains several elements to address a variety of issues around the County, including – • Transportation • Corridor Enhancement • Green Stormwater Infrastructure • Parks, Recreation and Open Space • Sustainability				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? This is included in the county's budget each year and performed by the County Administration and Freeholders.				
Disaster Debris Management Plan	Pending	-	County	County Administrator
How has or will this be integrated with the HMP and how does this reduce risk? In progress for the County and all municipalities. County's HMP vulnerability assessment to obtain estimated debris produced during each storm.				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this?	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
Stormwater Management Plan	Yes	Passaic County Master Plan, Green Stormwater Infrastructure Element	County	Planning Department
How has or will this be integrated with the HMP and how does this reduce risk? Outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.				
Open Space Plan	Yes	Passaic County Master Plan, Parks, Recreation and Open Space Element, 2014	County	Parks and Recreation
How has or will this be integrated with the HMP and how does this reduce risk? Provides detailed recommendations for the maintenance and improvement of all County Parks and Open Space areas.				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Habitat Conservation Plan	No	-	County	-
How has or will this be integrated with the HMP and how does this reduce risk? Consider the following: • Does the plan identify and map environmental systems that protect development from hazards? • Do environmental policies maintain and restore protective ecosystems? • Do environmental policies encourage development outside of protective ecosystems?				
Economic Development Plan	Yes	Passaic County, New Jersey Comprehensive Economic Development Strategy, 2015	County	Economic Development
How has or will this be integrated with the HMP and how does this reduce risk? Brings together the public, non-profit and private sectors to establish a comprehensive framework for economic growth and revitalization in the County. The CEDS Plan is designed to accelerate public/private investment, create job opportunities, advance regional competitiveness, and attract and retain skilled workforce participants.				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Forest Management Plan	Yes	Forest Management Plan, 2020	County	County Forester
How has or will this be integrated with the HMP and how does this reduce risk? The Forest Management Plan has directed the County on how to proceed with staying ahead of the Emerald Ash Borer infestation of ash trees. The Forester is working to develop a tree inventory to help guide in the future on all hazard trees. See 2020-Passaic-007.				
Transportation Plan	Yes	Passaic County Master Plan, Transportation Element, 2012	County	Planning Department
How has or will this be integrated with the HMP and how does this reduce risk? Serves as the blueprint for the county's future transportation system including roads, transit, waterways, and bicycle and pedestrian facilities. It identifies the types of policies and investments needed to ensure future mobility for our residents, support economic vitality, and contribute to a high quality of life throughout the County over the next several decades.				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this?	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
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Business/ Downtown Development Plan	Yes	Passaic County New Jersey Comprehensive Economic Development Strategy, 2015	County	Economic Development
How has or will this be integrated with the HMP and how does this reduce risk? Brings together the public, non-profit and private sectors to establish a comprehensive framework for economic growth and revitalization in the County. The CEDS Plan is designed to accelerate public/private investment, create job opportunities, advance regional competitiveness, and attract and retain skilled workforce participants.				
Other	Yes	Storm Water Pollution Prevention Plan (SWPPP) or 5G3 General Construction Stormwater Permit Guidance	County	Engineering Department
How has or will this be integrated with the HMP and how does this reduce risk? Stormwater runoff from construction sites can cause significant harm to New Jersey's rivers, lakes, and coastal waters if not managed properly. To address these impacts, it is necessary to control soil erosion and sedimentation during land disturbance, as well as minimize stormwater contamination from other construction related activities.				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Emergency Operations Plan	County and Local	Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? Details what each facility or agency will do during a disaster (incident command implementation, command center location and activities, specific plans by department, etc.).				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	Yes	Passaic County Code Blue Alert Plan	County	Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? Ensures that at risk individuals are being protected from weather related exposure and possible death.				

2.3.2 Development and Permitting Capability

Table 2-3 summarizes the capabilities of Passaic to oversee and track development.

Table 2-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Planning Board reviews and approves all developments abutting County roads
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	The Planning Board does not issue building permits. The Planning Board provides approvals which then allow applicants to apply for the appropriate permits. Building permits are a municipal responsibility and are issued (along with occupancy permits) only after the applicant receives County Planning Board approval when required. There are County permits that can be required which are obtained through the Passaic County Roads and/or Engineering department including road opening permits and right-of-way access permits. They also need approval to connect to the County stormwater system or encroach into County rights-of-way (Freeholder approval).
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No	-
Describe the level of buildout in your jurisdiction.	N/A	

2.3.3 Administrative and Technical Capability

Table 2-4 summarizes potential staff and personnel resources available to Passaic and their current responsibilities that contribute to hazard mitigation.

Table 2-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Prior to the issuance of any building permit by a municipal building official or any other agency or individual with authority to approve a site plan or issue a building permit, the site plan for any proposed land development along County roads or which will cause stormwater to drain either directly or indirectly to a County road or through any drainage-way, structure, pipe, culvert or facility for which the County is responsible for the construction, maintenance or proper functioning shall be submitted to the County Planning Board for review and approval.
Zoning Board of Adjustment	Yes	The Passaic County Construction Board of Appeals serves as a quasi-judicial body to hear appeals filed by owners of properties in Passaic County from decisions, actions or inaction made by a municipal official.
Planning Department	Yes	The Department of Planning and Economic Development serves as the staff resource for the Board of County Commissioners, the Passaic County Planning Board, Passaic County Agriculture Development Board, and the Open Space, Farmland and Historic Preservation Trust Fund Advisory Committee. Planning and Economic Development also administers the Community Development Block Grant (CDBG) program. The department facilitates the development and redevelopment of communities that offer citizens a high quality of life by meeting their needs for employment, affordable housing, efficient transportation, and access to leisure, recreational and cultural opportunities. The department provides a process that assists citizens and community leaders in directing future changes in the county. The Department maintains and develops spatial data for Passaic County and provides geographic information system (GIS) resources to citizens, businesses, and other county departments. The Passaic County GIS mapping is compiled from existing state GIS datasets such as digitized parcels created from scanned tax maps. The base mapping is organized into Shapefiles and File Geodatabases and is available as countywide data or by municipality.
Mitigation Planning Committee	Yes	Office of Emergency Management – Mitigation Plan Lead
Environmental Board/Commission	No	-
Open Space Board/Committee	Yes	Open Space, Farmland, and Historic Preservation Advisory Committee. The citizens approved an Open Space and Farmland Preservation Trust Fund referendum and an Open Space and Parks Improvement referendum, which were ultimately consolidated as a result of legislative initiative. The County manages and provides grants to municipal and non-profit partners for open space acquisition, park development, and historic preservation

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		projects from the Open Space, Farmland, and Historic Preservation Trust Fund on an annual basis.
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The Passaic County Roads Division maintains and repairs all county roadways, culverts, catch basins, and guide rails. This consists of 246 miles of roadway throughout 16 municipalities. Roadway maintenance include pavement between the curblines, drainage system, street cleaning, and snow and ice control. Within County Right-of-Ways, warning and guide signs and trees are maintained. The services and programs carried out by the Division are to provide for the safe passage of both motorists and pedestrians while using County roads. The Engineering Department protects and enhances the quality of life of residents through various infrastructure projects, including bridges, culverts, drainage systems, and road/traffic operations. This department is charged with preparing plans and specifications, project management and construction inspection of the County's capital improvement projects for the County's 122 bridges, 292 culverts, 246 miles of roadway, associated drainage, five dams, buildings and parks projects. The Engineering Department also maintains records of County facilities, recommends traffic rules and regulations.
Construction/Building/Code Enforcement Department	No	
Emergency Management/Public Safety Department	Yes	The Office of Emergency Management acts as a coordinating agency among local, state, and federal agencies. The Office of Emergency Management works in conjunction with county and municipal health agencies and health care providers, and emergency service personnel including police, fire, EMS, and the Sheriff's Office to coordinate responses in the event of an emergency. The mission of the Office of Emergency Management is to provide expertise and leadership for the Department’s emergency management responsibilities through the integration of emergency management programs, functions, and supporting activities to prevent, protect against, mitigate the effects of, respond to, and recover from all hazards
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Engineering, Office of Emergency Management
Mutual aid agreements	Yes	Fire and HazMat
Human Resources Manual - Do any job descriptions specifically include identifying	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
or implementing mitigation projects or other efforts to reduce natural hazard risk?		
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Department of Planning, Department of Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Department of Engineering
Planners or engineers with an understanding of natural hazards	Yes	Department of Engineering
Staff with expertise or training in benefit/cost analysis	Yes	Department of Engineering
Professionals trained in conducting damage assessments	Yes	Department of Engineering
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Department of Planning and Economic Development
Staff that work with socially vulnerable populations or underserved communities	Yes	Board of Social Services, Board of Mental Health, Youth Services Commission, Public Housing Agency
Environmental scientists familiar with natural hazards	Yes	Contract out on per project basis, as needed
Surveyors	No	-
Emergency manager	Yes	Emergency Management Coordinator at OEM
Grant writers *Consider the following:* Are data and maps from the HMP used to support documentation in grant applications?	Yes	Contract, Millennium and in-house.
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

2.3.4 Fiscal Capability

Table 2-5 summarizes financial resources available to Passaic.

Table 2-5. Fiscal Capabilities

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

2.3.5 Education and Outreach Capability

Table 2-6 summarizes the education and outreach resources available to Passaic.

Table 2-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	County has Public Information Officer
Personnel skilled or trained in website development	Yes	IT Department
Hazard mitigation information available on your website	Yes	Mitigation Plan published and OEM mitigation page, Hurricane Survival Guide, natural disaster and emergency preparedness information
Social media for hazard mitigation education and outreach	Yes	Facebook and X (Formerly Twitter)
Citizen boards or commissions that address issues related to hazard mitigation	No	N/A
Warning systems for hazard events	Yes	Rave Alert – Sheriff's Department
Natural disaster/safety programs in place for schools	Yes	Refer to individual jurisdiction annexes for more information.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	The Department of Human Services is an umbrella social service agency concerned with the planning and funding services for the county's disadvantaged and homeless citizens. Programs operate out of four divisions: Mental Health and Addiction Services, Community Outreach and Family Services, Juvenile Administration, and Workforce Development Board (WDB).
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	CERT Outreach

2.3.6 Community Classifications

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

Table 2-7. Community Classifications

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

N/A = Not applicable
— = Unavailable

2.3.7 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 2-8 summarizes the adaptive capacity for each identified hazard of concern and the County’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 2-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

2.4 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 2-1 is responsible for maintaining this information.

2.4.1 NFIP Statistics

Table 2-9 summarizes the NFIP policy and claim statistics for Passaic.

Table 2-9. Passaic County NFIP Summary of Policy and Claim Statistics

# Policies	**2,150**
# Claims (Losses)	**9,538**
Total Loss Payments	**$267,215,197**
# Repetitive Loss Properties (NFIP definition)	**884**
# Repetitive Loss Properties (FMA definition)	**20**
# Severe Repetitive Loss Properties	**510**

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: NJOEM 2024

2.4.2 Flood Vulnerability Summary

Table 2-10 provides a summary of the NFIP program in Passaic.

Table 2-10. NFIP Summary

NFIP Topic	Comments
Floodplain administration is conducted at the municipal level. Refer to the municipal annexes.	

2.5 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 2-11 through Table 2-13.

Table 2-11. 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
Construction permits are issued at the municipal level. Refer to the municipal annexes.				

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

Table 2-12. 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
DPW Garage	Garage	1	Route 23	N/A	Fully Built

** Only location-specific hazard zones or vulnerabilities identified.*

Table 2-13. 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
None Identified					

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

2.6.1 Hazard Area

Hazard area maps provided are shown in the hazard profiles in Volume 1. The 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 Passaic has significant exposure.

2.6.2 Hazard Event History

The history of natural and non-natural hazard events in Passaic is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 2-14 provides details on loss and damage in Passaic during hazard events since the last hazard mitigation plan update.

Table 2-14. Hazard Event History in Passaic

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Passaic
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	-
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	-
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	-

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

2.6.3 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 Passaic

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. Passaic 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 Country agreed with the following preliminary rankings.

Table 2-15 shows Passaic's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 2-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 2-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 2-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
None Identified			

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

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

- Post Brook Dam
- Green Swamp #1 Dam
- Irish Brook Dam
- Kampfe Lake Dam
- Star Lake Upper Dam
- Cedar Grove North Res Dam
- Haledon Reservoir Dam
- Oldham Pond Dam
- Pompton Lakes Dam
- Sallys Pond Dam
- Monksville Dam
- Furnace Road Dam
- Skyline Lake #2 (Upper) Dam
- Skyline Lake #1 (Lower) Dam
- Erskine Upper Lake Dam
- Cupsaw Lake Dam
- Raymond Dam
- Green Swamp #3 Dam
- Midvale Dam
- Green Swamp #2 Dam
- Overflow Weir Dam
- Wolf Den Dam
- Green Swamp #4 Dam
- Pines Lake Dam
- Point View Dam
- Packanack Lake Dam
- Preakness Hills C.C. Dam No. 1
- Lionshead Lake Dam
- Echo Lake Spillway Dam
- Greenwood Lake Dam
- River Wall Dam
- Upper Mount Glen Lake Dam
- High Crest Lake Dam
- New Jersey No Name # 40 Dam
- Lower Mount Glen Lake Dam
- Macopin Reservoir Dam
- Green Turtle Pond Dam
- Upper Greenwood Lake Dam
- Lookover Lake Dam
- West Milford Lake Dam
- Charlotteburg Dam
- Gordon Lakes Dam
- Echo Lake Intake Dam
- Clinton Reservoir Dam
- Lake Arcadia Dam #1
- Pinecliff Lake Dam
- Lindy's Lake Dam
- Highland Lake Dam
- New Street Reservoir Dam
- Great Notch Reservoir Dam

2.6.4 Identified Issues

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

- The requirements of Green Stormwater Infrastructure within the County Site Plan and Subdivision resolution are not included.
- There is no spatial platform to track asset inventories and their associated status and needs for maintenance and mitigation. An interdepartmental system is needed to support web mapping.
- The County-owned Mount Prospect Avenue in Clifton has drainage issues that produce flooding that affects nearby properties.
- There are several roads throughout the County that frequently flood and become impassable. Drivers will ignore signs or cones to detour traffic and use the flooded roadway, putting themselves and others at risk of potential injury.
- The County experiences consistent flooding along the Passaic River, where there is significant residential development.
- Passaic County contains many underground tanks that provide heating oil and fuel for various critical facilities and other functions. Some tanks are decades old and may be more vulnerable to physical

damage in the event of a hazard (i.e., rising water table, soil movement, soil aridity). The Engineering Department recently successfully relocated an underground tank that was beneath a golf course.

- Several critical facilities lack backup generators, which are needed to ensure their continuous accessibility during a hazard event, as exemplified by Hurricane Sandy.
- Portions of the Highlands Rail Trail, both new and future extensions, experience occasional flooding that may block users from traveling along the path.

2.7 MITIGATION STRATEGY AND PRIORITIZATION

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

2.7.1 Past Mitigation Action Status

Table 2-17 indicates progress on the County's mitigation strategy identified in the 2020 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.

2.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 2-17, Passaic identified the following mitigation efforts completed since the last HMP:

- None Identified

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

- None Identified

Table 2-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Passaic County-001	Countywide Debris Management Plan	Flood, Coastal Storm, Severe Weather, Severe Winter Storm	Passaic County Office of Emergency Management; New Jersey Department of Environmental Protection	**Problem:** The County does not have a countywide debris management plan with staging areas. **Solution:** Passaic County OEM will develop a countywide debris management plan, in coordination with NJDEP. OEM will work with all municipalities to identify staging areas and NJDEP will assist with determining if proposed staging areas are located in the floodplain.	1. In Progress 2. Plan is in need of update.	1. Include. 2. 3.

Project Number	Project Name	Hazards 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.
2020-Passaic County-002	Stormwater Infrastructure Upgrades	Flood, Coastal Storm, Severe Weather	Passaic County Engineer	**Problem:** The storm sewer system requires an increase in capacity along County roadways; locations may be in all municipalities. Currently there are three high priority locations identified in need of this work to alleviate flooding **Solution:** Install new storm sewer systems, consisting of reinforced concrete pipe, inlets, manholes and slope stabilization to eliminate existing ponding, localized flooding and slope erosion along the below listed project limits. The work includes final restorations including replacement of sidewalk impacted by the work, asphalt restorations, and topsoiling and seeding of disturbed areas. Valley Road, Wayne – Location between Little Pond Road and Rose Terrace Jackson Avenue, Wayne – Location between Harmony Lane and a point 600' westerly Passaic Ave, Passaic – Location Terhune Avenue to Pleasant Avenue	1. Complete 2.	1. Discontinue 2. Not Applicable 3. This action has been completed.

Project Number	Project Name	Hazards 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.
2020-Passaic County-003	Ensure continuity of operations at critical facilities and lifelines by ensuring there is backup power	Flood, Coastal Storm, Severe Weather	Passaic County Office of Emergency Management	**Problem:** There is no backup power available at County assets that are also considered critical facilities and community lifelines. **Solution:** Install a permanent generator at the following facilities: • County Jail • 495 River Street - Procurement, Paterson • 77 Hamilton Street, Paterson • 63 Hamilton Street – Courthouse Annex, Paterson • 930 Riverview Drive, Totowa	1.In progress 2. County Jail (Building is being demolished so this will be discontinued from mitigation action) · 495 River Street - Procurement, Paterson (Currently in design phase) · 77 Hamilton Street, Paterson; currently in conceptual development. · 63 Hamilton Street – Courthouse Annex, Paterson: currently in conceptual development · 930 Riverview Drive, Totowa(Currently ordered and in procurement)	1. Continue 2. Remove county jail. 3.

Project Number	Project Name	Hazards 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.
2020-Passaic County-004	Inventory of dam maintenance and deficiency status	Dam Failure	Department of Engineering	**Problem:** The County has 49 high hazard dams. Their ownership and status of maintenance and deficiencies is not known at the County to assist with identifying projects and conducting outreach to owners. **Solution**: Request status of all dams from NJDEP and develop an outreach program to all dam owners with identified deficiencies and discuss next steps to bring to compliance, funding sources, etc.	1. Ongoing 2.	1. Discontinue 2. Not Applicable 3. This is an ongoing capability.
2020-Passaic County-005	Evacuation Routes	Costal Storm	Office of Emergency Management	**Problem:** Coastal Storm is a high ranked hazard at the County. The County needs updated evacuation routes mapped and accessible to residents in the event of evacuation. **Solution**: The Office of Emergency Management will coordinate with State Police and State Department of Transportation to identify and map evacuation routes in the County. These routes will be accessible via online through the State's ArcGIS Online system.	1. In progress 2. Meeting is scheduled for April 28 to discuss updating evacuation routes.	1. Include 2. 3.

Project Number	Project Name	Hazards 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.
2020-Passaic County-006	Tree Inventory	Infestation and Invasive Species	Department of Parks and Recreation	**Problem:** There is no countywide tree inventory to guide the Department of Parks and Recreation on infested trees. **Solution**: Develop an inventory of trees in the County and identify the trees that are hazards, such as ash trees susceptible to Emerald Ash Borer and other infestations/invasive species.	1. In progress. 2. Ongoing capability from the Parks Department.	1. Discontinue. 2. Not applicable. 3. This action will be removed from HMP as it is a permanent ongoing capability from the Parks Department.
2020-Passaic County-007	Pandemic Preparedness	Disease Outbreak	Department of Health	**Problem:** The COVID-19 pandemic has put a tremendous strain on local and county resource with insufficient supplies and training. **Solution**: Passaic County needs additional supplies/equipment and storage facility space to stockpile to prepare for a pandemic. In addition, a hot wash is needed to gather lessons learned and gaps/needs from the current pandemic and implement training to prepare for the next event.	1. Complete 2. County also is constructing satellite office in West Milford and has been procuring backup generators for the department and other critical facilities, such as DPW.	1. Discontinue 2. Not Applicable 3. This action has been completed.

Project Number	Project Name	Hazards 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.
2020-Passaic County-008		Disease Outbreak	Division of Economic Development	**Problem:** The COVID-19 pandemic has impacted businesses and the local economy. **Solution**: The COVID-19 pandemic has prompted the US Congress to provide funds to the NJEDA to develop a grant program for companies who have been impacted by COVID-19. The Division of Economic Development is currently assessing how they can assist businesses in the County recover. This action is in the early stages of development and will continue to be updated.	1. Complete 2. This was a one-time funding opportunity and has been expended.	1.Discontinue 2.Not Applicable 3. This action has been completed.
2020-Passaic County-009	County Site Plan and Subdivision Ordinance Update	Flood, Coastal Storm, Severe Weather	Department of Planning and Economic Development	**Problem:** The requirements of Green Stormwater Infrastructure within the County Site Plan and Subdivision resolution are not included. **Solution**: Adopt an update to the County's Site Plan and Subdivision Resolutions to incorporate Low Impact Development/Green Stormwater Infrastructure.	1. In Progress 2. Anticipated approval Fall 2025	1. Include 2.Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Passaic County-010	Establish an Enterprise GIS system to manage assets/maintenance/mitigation needs	All	Department of Planning and Economic Development, County Engineer	**Problem:** There is no spatial platform to track asset inventories and their associated status and needs for maintenance and mitigation. An interdepartment system is needed to support web mapping. **Solution**: Passaic County Department of Planning will develop an Enterprise GIS system which will allow for departments to store and are live data services and support web mapping products. This would be a password-protected system to display the County's asset inventory to include but not limited to roads, bridges and associated status and needs.	1. In Progress 2. County has developed inventory of County buildings and is currently working with agencies/municipalities to develop inventory of roads and bridges.	1. Include 2.Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Passaic County-011	Green Stormwater Infrastructure Implementation Plan	Coastal Storm, Flood, Severe Storm	Department of Planning and Economic Development	**Problem:** Passaic County does not have a countywide green stormwater infrastructure implementation plan as identified as a follow-up item in the Green Stormwater Infrastructure Master Plan Element. **Solution**: Develop a green stormwater infrastructure implementation plan to prioritize actions and identify funding opportunities and mechanisms to implement green stormwater infrastructure in the County.	1. Complete 2. Plan was completed in 2018	1.Discontinue 2.Not Applicable 3. This action has been completed.

2.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Passaic 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 Passaic would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in County priorities.

Table 2-18 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 2-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 2-18. 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					
Drought	X	X			X	X		X		
Extreme Temperature	X	X			X					X
Flood	X	X	X		X	X		X		X
Geological Hazards	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

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 2-19. 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-PassaicCounty-001	County Site Plan and Subdivision Ordinance Update	0	1	1	1	1	1	1	0	1	1	1	1	0	1	**11**	High
2025-PassaicCounty-002	Establish and Enterprise GIS System to Manage Assets/Maintenance/Mitigation Needs	0	0	1	1	1	1	0	0	1	1	0	1	1	1	**9**	Medium
2025-PassaicCounty-003	Mount Prospect Avenue Drainage	1	1	1	1	1	-1	1	0	1	1	1	1	0	0	**10**	Medium
2025-PassaicCounty-004	Flood Prone Roadways	1	1	1	1	1	-1	1	1	1	1	1	1	1	1	**13**	High
2025-PassaicCounty-005	Flood Prone Property Buyout	1	1	1	1	1	-1	1	1	1	1	1	1	0	1	**12**	High
2025-PassaicCounty-006	Removal of Underground Tanks	0	1	1	1	1	1	1	0	1	1	1	1	0	0	**10**	Medium
2025-PassaicCounty-007	Backup Generators – Critical Facilities	1	1	1	1	1	-1	0	1	1	1	1	1	1	1	**12**	High
2025-PassaicCounty-008	Flooding at Highlands Rail Trail	0	1	1	1	1	1	1	0	1	1	1	1	0	1	**11**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-PassaicCounty-001. County Site Plan and Subdivision Ordinance Update

Lead Agency:	Department of Planning and Economic Development
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The requirements of Green Stormwater Infrastructure within the County Site Plan and Subdivision resolution are not included.
Description of the Solution:	Adopt an update to the County's Site Plan and Subdivision Resolutions to incorporate Low Impact Development/Green Stormwater Infrastructure. Anticipated approval in Fall 2025.
Estimated Cost:	Low
Potential Funding Sources:	County Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,4,5,7
Benefits:	Adopting Low Impact Development and Green Stormwater Infrastructure reduces runoff and improves water quality, while also lowering infrastructure costs.
Impact on Socially Vulnerable Populations:	This action will help mitigate flooding in areas that are often disproportionately affected, reducing the risk of property damage and displacement.
Impact on Future Development:	Low Impact Development/Green Stormwater Infrastructure help meet environmental regulations and standards, making it easier for developers to comply with legal requirements.
Impact on Critical Facilities/Lifelines:	This action will minimize the risk of flooding around essential infrastructure, ensuring that critical services remain operational during adverse conditions.
Impact on Capabilities:	Low Impact Development/Green Stormwater Infrastructure provide more effective and sustainable stormwater management solutions, improving overall infrastructure management.
Climate Change Considerations:	Climate change is leading to more frequent and intense storms, which can increase stormwater runoff. This can overwhelm existing stormwater management systems, causing localized flooding and water pollution.
Mitigation Category	Local Plans and Regulation
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Detention Basins	Requires regular maintenance, can be costly.
Combined Sewer Systems	Can lead to overflow issues.

Action 2025-PassaicCounty-002. Establish and Enterprise GIS System to Manage Assets/Maintenance/Mitigation Needs

Lead Agency:	Department of Planning and Economic Development
Supporting Agencies:	County Engineering
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	There is no spatial platform to track asset inventories and their associated status and needs for maintenance and mitigation. An interdepartmental system is needed to support web mapping.
Description of the Solution:	Passaic County Department of Planning will develop an Enterprise GIS system which will allow for departments to store and access live data services and support web mapping products. This would be a password-protected system to display the County's asset inventory to include but not limited to roads, bridges and associated status and needs. Currently, the County has developed inventory of County buildings and is currently working with agencies/municipalities to develop inventory of roads and bridges.
Estimated Cost:	Medium
Potential Funding Sources:	County Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,4,5,6,7
Benefits:	This action will ensure accurate and up-to-date information on the County's asset inventory, including roads, bridges, and buildings.
Impact on Socially Vulnerable Populations:	This action will enhance data management allowing for better identification and allocation of resources to areas with high social vulnerability.
Impact on Future Development:	The platform will provide detailed spatial data that can guide sustainable development practices and ensure environmental considerations are integrated into planning.
Impact on Critical Facilities/Lifelines:	This action will ensure accurate and real-time data, helping to maintain the functionality of critical facilities during emergencies.
Impact on Capabilities:	This will promote interdepartmental and interagency collaboration through shared data and resources.
Climate Change Considerations:	N/A
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Paper-Based System	Time consuming and difficult to share across departments.
Open-source GIS solutions	Requires customization and ongoing maintenance.

Action 2025-PassaicCounty-003. Mount Prospect Avenue Drainage

Lead Agency:	County Roads Division
Supporting Agencies:	County Engineering
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The County-owned Mount Prospect Avenue in Clifton has drainage issues that produce flooding that affects nearby properties.
Description of the Solution:	The County Roads Division will initiate the design phase for the construction of an adequate drainage system on Mount Prospect Avenue to prevent flooding to nearby properties. Construction is anticipated to begin in the 2026/2027 timeframe.
Estimated Cost:	Medium
Potential Funding Sources:	County Budget, HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6,7,8
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Capabilities:	Not applicable
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures, Property Protection
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Elevate roadway	Costly and may not solve problem
Relocate roadway	Not possible

Action 2025-PassaicCounty-004. Flood Prone Roadways

Lead Agency:	County Road Division
Supporting Agencies:	County Engineering
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	There are several roads throughout the County that frequently flood and become impassable. Drivers will ignore signs or cones to detour traffic and use the flooded roadway, putting themselves and others at risk of potential injury.
Description of the Solution:	The County will develop a countywide feasibility study to scope potential mitigation solutions for flooded roadways. The study will focus on County-owned assets but will also examine how to better support municipalities that are also experiencing this issue on locally owned roads.
Estimated Cost:	Medium
Potential Funding Sources:	County Budget. HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,3,7
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Capabilities:	Not applicable
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures, Property Protection
Priority	High

Alternatives:

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

Action 2025-PassaicCounty-005. Flood Prone Property Buyout

Lead Agency:	Department of Planning and Economic Development
Supporting Agencies:	County Engineering
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The County experiences consistent flooding along the Passaic River, where there is significant residential development.
Description of the Solution:	The County is looking at properties along the Passaic in Paterson for potential buyouts. It is currently completing the environmental investigation to determine impacts.
Estimated Cost:	Medium
Potential Funding Sources:	HMGP, FMA, match from property owners
Implementation Timeline:	1-5 years
Goals Met:	1,2,3,7,8
Benefits:	Eliminates flood damage to homes and residences, which creates an open space for the municipality and increases flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

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

Action 2025-PassaicCounty-006. Removal of Underground Tanks

Lead Agency:	County Engineering
Supporting Agencies:	-
Hazard(s) of Concern:	Drought, Flood, Geological Hazards
Description of the Problem:	Passaic County contains many underground tanks that provide heating oil and fuel for various critical facilities and other functions. Some tanks are decades old and may be more vulnerable to physical damage in the event of a hazard (i.e., rising water table, soil movement, soil aridity). The Engineering Department recently successfully relocated an underground tank that was beneath a golf course.
Description of the Solution:	The County Engineering will oversee the removal of all underground tanks by 2030. This includes identifying tanks that can be relocated aboveground and determining alternative solutions for those that can be replaced with non-tank systems.
Estimated Cost:	Medium
Potential Funding Sources:	County Budget
Implementation Timeline:	1-5 years
Goals Met:	2,5,6
Benefits:	Relocating tanks aboveground or replacing them with non-tank systems minimizes the risk of physical damage from natural hazards.
Impact on Socially Vulnerable Populations:	This action will assist with reducing the risk of leaks and contamination protects the health and safety of socially vulnerable populations who may be more affected by environmental hazard.
Impact on Future Development:	By addressing potential environmental hazards, the project supports sustainable development and makes the area more attractive for future investments.
Impact on Critical Facilities/Lifelines:	Protecting critical facilities from potential hazards ensures they remain operational during emergencies, supporting community resilience.
Impact on Capabilities:	Aboveground tanks and non-tank systems are easier to monitor and maintain, improving overall infrastructure management capabilities.
Climate Change Considerations:	Climate change is leading to more frequent and intense storms, which can raise water tables and increase the risk of flooding. Underground tanks are particularly vulnerable to flooding, which can cause physical damage and lead to leaks or contamination.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection, Preventative Measures, Natural Resource Protection
Priority	Medium

Alternatives:

Action	Evaluation
No action	-
Enhanced Monitoring/Maintenance	Temporary Solution, High Costs
Repairing damage when it occurs	Temporary Solution

Action 2025-PassaicCounty-007. Backup Generators – Critical Facilities

Lead Agency:	County Engineering
Supporting Agencies:	-
Hazard(s) of Concern:	Extreme Temperatures, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Several critical facilities lack backup generators, which are needed to ensure their continuous accessibility during a hazard event, as exemplified by Hurricane Sandy.
Description of the Solution:	Procure new backup generators for County-owned critical facilities. The County has already procured backup generators for Health Department and Public Works facilities.
Estimated Cost:	Medium
Potential Funding Sources:	County Budget, HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6
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	Structure and Infrastructure Projects
CRS Category	Emergency Services
Priority	High

Alternatives:

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

Action 2025-PassaicCounty-008. Flooding at Highlands Rail Trail

Lead Agency:	County Parks and Recreation
Supporting Agencies:	County Planning and Economic Development
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	Portions of the Highlands Rail Trail, both new and future extensions, experience occasional flooding that may block users from traveling along the path.
Description of the Solution:	Determine feasibility of green infrastructure and nature-based solutions based on local conditions, such as soil types. For example, a portion of the trail constructed in Wanaque used pervious asphalt to mitigate flooding.
Estimated Cost:	Medium
Potential Funding Sources:	County budget
Implementation Timeline:	1-5 years
Goals Met:	2,5,7
Benefits:	This action will improve the Highlands Rail Trail's resilience to flooding, enhance environmental quality, and provide social and economic benefits to the community.
Impact on Socially Vulnerable Populations:	This action will ensure that the trails are accessible and safe, offering recreational spaces which improve quality of life.
Impact on Future Development:	Not applicable
Impact on Critical Facilities/Lifelines:	This action will mitigate flood risks and ensure the continued functionality of the transportation routes provided by the trail.
Impact on Capabilities:	This action provides more effective and sustainable flood management solutions, improving overall infrastructure management.
Climate Change Considerations:	Climate change is leading to more frequent and intense storms, which can increase the risk of flooding. Portions of the trail are already experiencing occasional flooding, and these events are likely to become more common and severe.
Mitigation Category	Structure and Infrastructure Project, Natural Systems Protection
CRS Category	Preventative Measures, Property Protection, Natural Resource Protection
Priority	High

Alternatives:

Action	Evaluation
No action	-
Installing retention ponds	Requires regular maintenance and can be costly
Elevating the trial	May not be feasible in all areas

3. BOROUGH OF BLOOMINGDALE

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

3.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Bloomingdale identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management represented the community on the Passaic 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 3-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 3-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Michael Hudson, OEM Coordinator Address: 101 Hamburg Turnpike, Bloomingdale, NJ 07403 Phone Number: 973-296-6010 Email: oem@bloomingdalenj.net	Name/Title: Ray Muller, Deputy OEM Coordinator Address: 101 Hamburg Turnpike, Bloomingdale, NJ 07403 Phone Number: 973-592-2601 Email: rmuller@bloomingdalepolice.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Thomas Boorady, PE PP CME CFM Address: 86 Newark Pompton Turnpike, Riverdale, NJ 07457 Phone Number: 973-835-8300 Email: tab@darmofalski.com	
Additional Contributors	
Name/Title: Michael Hudson, OEM Coordinator Method of Participation: Provided updated information on hazard event history, capability assessment, NFIP summary, building permits and new development, and previous mitigation actions; attended Planning Partnership Kick Off.	
Name/Title: Ray Muller Method of Participation: Served as alternate point of contact for the Borough.	
Name/Title: Mike Sondermeyer, Business Administrator Method of Participation: Provided updated information on the capability assessment, NFIP summary	

3.2 COMMUNITY PROFILE

3.2.1 Brief History

The Borough of Bloomingdale was incorporated as an independent municipality when Pompton Township was divided into the Boroughs of Bloomingdale, Wanaque and Ringwood in 1918 (Borough of Wanaque n.d.).

3.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 9.2 square miles, of which 8.7 square miles is land and 0.45 square miles is water. The Borough is in the New Jersey Highlands, with land area in both the Preservation and Planning Areas. It contains approximately 5,114 acres of Forest Resource Areas, which are forested areas that have high ecological by the Highlands Council. The 2009 Highlands Environmental Resource Inventory for the Borough of Bloomingdale indicated that all the forested area in the Borough as “High Integrity Forest Area,” meaning it has little fragmentation and is in good ecological heal. (Borough of Bloomingdale 2011)

3.2.3 Governing Body Format

The Borough of Bloomingdale is governed by a mayor and borough council, comprising of six council members.

3.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Bloomingdale was 7,777, a 1.6 percent increase 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 2020 U.S. Census indicates that 3.2 percent of the population is 5 years of age or younger, 14.7 percent is 65 years of age or older, 1.3 percent is non-English speaking, 9.0 percent is below the poverty threshold, and 7.6 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, childcare, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can’t afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

3.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Bloomingdale 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 Bloomingdale to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

3.3.1 Planning and Regulatory Capability and Integration

Table 3-2 summarizes the planning and regulatory tools that are available to Bloomingdale.

Table 3-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14; International Building Code – New Jersey Edition, 2018; NJAC 5:24-3.14 Adopted, 2019; Chapter 11 – Building and Housing; Chapter 15, Article 3.6 – Property Maintenance	State and Local	Construction Official

How has or will this be integrated with the HMP and how does this reduce risk?
Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures.

Chapter 11: There is hereby established in the Borough a State Uniform Construction Code enforcing agency to be known as the "Bloomingdale Building Department," consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.

Chapter 15: The purpose of this chapter is the following:

(a) To protect public health, safety and welfare by establishing minimum standards governing the maintenance, appearance and condition of residential and nonresidential premises.
(b) To fix certain responsibilities upon owners, operators, occupants and other persons.
(c) To authorize and establish procedures for the inspection of residential and nonresidential premises.
(d) To fix penalties for the violations of this chapter and provide procedures for correcting violations in those cases requiring municipal action.

	Jurisdiction has this?	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
Zoning/Land Use Code	Yes	State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, effective Aug 1, 1976, 40-55D-62: 49; Chapter 92 – Zoning, 2018	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? It is the intent and purpose of this chapter to: A. Encourage action to guide the appropriate use or development of all lands in the Borough of Bloomingdale, in a manner which will promote the public health, safety, morals, and general welfare. B. Secure safety from fire, flood, panic, and other natural and man-made disasters. C. Provide adequate light, air, and open space. D. Ensure that the development of the Borough of Bloomingdale does not conflict with the development, and general welfare of neighboring municipalities, the County, or the State as a whole. E. Promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods and the entire municipality and preservation of the environment. F. Encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies. G. Provide sufficient space in appropriate locations for a variety of residential, recreational, commercial, and industrial uses and open space, both public and private, according to their respective environmental requirements in order to meet the needs of all the Borough's citizens. H. Encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight. I. Promote a desirable visual environment through creative development techniques and good civic design and arrangements. J. Promote the conservation of open space and valuable natural resources and prevent urban sprawl and degradation of the environment through improper use of land. K. Provide for senior citizen community housing.			
Subdivision Code	Yes	P.L.1975, c.291 (C.40:55D-47): 40:55D-37; Municipal Land Use Law. NJ Statute 40:27-6.2; Chapter 69 – Site Plan Review and Subdivision of Land	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter is to provide rules, regulations and standards to guide the process of site plan review and land subdivision approval in the Borough of Bloomingdale in order to promote the public health, safety, convenience, morals, and general welfare of the Borough. It shall be administered to ensure orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities, and services and to achieve the purposes set forth in Article 1 of the Municipal Land Use Law, P.L. 1975, c. 291.				
Site Plan Code	Yes	Municipal Land Use Law; NJ Statute 40:27-6.2, 40:27-6.10; Ordinance No 3-2017, Chapter 69 - Site Plan Review and Subdivision of Land	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter is to provide rules, regulations and standards to guide the process of site plan review and land subdivision approval in the Borough of Bloomingdale in order to promote the public health, safety, convenience, morals and general welfare of the Borough. It shall be administered to ensure orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services and to achieve the purposes set forth in Article 1 of the Municipal Land Use Law, P.L. 1975, c. 291.				

	Jurisdiction has this?	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
Stormwater Management Code	Yes	Title 7 of the NJ Administrative Code, N.J.A.C. 7:8; Borough Code Chapter 31 Drainage and Stormwater Management; Borough Code Chapter 31A – Stormwater Control Requirements	Local	DPW

How has or will this be integrated with the HMP and how does this reduce risk?
Chapter 31: It is hereby determined that the lakes and waterways within the Borough are at times subject to flooding; that such flooding is also a danger to the lives and property of the public; that such flooding is also a danger to the natural resources of the County of Passaic and State of New Jersey; that development tends to accentuate such flooding by increasing stormwater runoff, due to alteration of the hydrological response of the watershed in changing from the undeveloped to the developed condition; that such increased flooding produced by the development of real property contributes increased quantities of waterborne pollutants and tends to increase channel erosion; that such increased flooding, increased erosion and increased pollution constitutes deterioration of the water resources of the Borough; and that such increased flooding, increased erosion and increased pollution can be controlled to some extent by the regulation of stormwater runoff from such development. It is therefore determined that it is in the public interest to regulate the additional discharge stormwater runoff from such developments as provided in this chapter.

Chapter 31A: The purpose of this chapter is to establish minimum stormwater management requirements and controls for "major development."

Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
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

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.

	Jurisdiction has this?	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
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? • 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? This law went into effect in March 2024 during the planning process of this plan update.				
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Environmental Protection Ordinance(s)	Yes	Title 7 of the NJ Municipal Administrative Code; Chapter 24 Environmental Regulations; Chapter 23 Shade Trees	State and Local	Borough Council
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 24: Sets requirements/restrictions for pesticide spraying and privately owned salt storage. Chapter 23: The purpose of this section is to discourage indiscriminate and excessive removal, cutting and destruction of trees, which has caused environmental damage and adversely affected property values, to prevent soil erosion and stream pollution and silting, to augment flood control, to restrict the cutting of trees to a minimum during construction, to reduce dust and air pollution, to preserve wildlife habitat, to beautify the streets and to reforest the municipality by encouraging the planting of trees wherever and whenever possible.				

	Jurisdiction has this?	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
Flood Damage Prevention Ordinance	Yes	NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP); Ordinance No 23-2023, Chapter 30 – Floodplain Management Regulations	Federal, State and Local	Construction Official, Floodplain Administrator

How has or will this be integrated with the HMP and how does this reduce risk?
These regulations, in combination with the flood provisions of the Uniform Construction Code (UCC) N.J.A.C. 5:23 consisting of the Building Code, Residential Code, Rehabilitation Subcode, and related codes, and the New Jersey Flood Hazard Area Control Act, N.J.A.C. 7:13, shall be known as the Floodplain Management Regulations of the Borough of Bloomingdale

The purposes and objectives of these regulations are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to:

a. Protect human life and health.
b. Prevent unnecessary disruption of commerce, access, and public service during times of flooding.
c. Manage the alteration of natural floodplains, stream channels and shorelines;
d. Manage filling, grading, dredging and other development which may increase flood damage or erosion potential.
e. Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards.
f. Contribute to improved construction techniques in the floodplain.
g. Minimize damage to public and private facilities and utilities.
h. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas.
i. Minimize the need for rescue and relief efforts associated with flooding.
j. Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas.
k. Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events.
l. Meet the requirements of the National Flood Insurance Program for community participation set forth in Title 44 Code of Federal Regulations, Section 59.22.

The ordinance follows the latest model code coordinated ordinance available from NJDEP.

Wellhead Protection	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Emergency Management Ordinance	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Climate Change Ordinance	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Other	N/A	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

	Jurisdiction has this?	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/Master Plan	Yes	Bloomingdale Master Plan, 2004, Amendment in 2015	County	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The Master Plan supports the goals of the HMP because its objectives include the preservation and protection natural features including lakes, streams, woods, wetlands, floodplains, open spaces, and steep slopes. The development of these features could increase risks related to hazards, such as landslides or flooding.				
Capital Improvement Plan	Yes	Bloomingdale Capital Improvement Plan, 2018	Local	Governing Board
How has or will this be integrated with the HMP and how does this reduce risk? Per NJSA 40:55D-29) the governing body is authorized to direct the planning board to prepare a CIP with at least a six-year planning horizon. Updated in 2018; utility lines, stormwater; recently took advantage of loans from NJDEP and replaced 5 streets of water lines ($800K); focus on infrastructure due to age including stormwater; $100K for stormwater issues with outflows needing attention; stream and wetland restoration focus.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Floodplain Management or Watershed Plan	Yes	Chapter 30 Ordinance No 23-2023	Local	Construction Official/Town Engineer
How has or will this be integrated with the HMP and how does this reduce risk? Wanaque Reservoir has a plan; In November 2019, the Borough updated their annex to the 2015 plan which serves as the Borough's Floodplain Management Plan under the Community Rating System Activity 510.				
Stormwater Management Plan	Yes	Chapter 31	Local	Engineer and Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Past December 2019 to satisfy MS4 permit, Borough is doing what the State requires. NJDEP reviewed the draft plan and stormwater best management practices. This is still in draft format. Developed a full digital mapping of drinking water, sewer and stormwater infrastructure and maintain these layers/maps with maintenance – so digitized infrastructure. Digitized outfalls to the river as well – self funded. NJDEP Is mandating green infrastructure be included in new redevelopment plan for stormwater.				

	Jurisdiction has this?	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
Stormwater Pollution Prevention Plan	Yes	NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). Chapter 31A Ordinance No 3-2021	Local	Engineer and DPW/Property Maintenance
How has or will this be integrated with the HMP and how does this reduce risk? The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004, and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). There is a public outreach and education component as discussed in the Integration section later in this annex. This includes creating signage for the parks regarding washing your car; pet waste; that impacts what goes into stormwater.				
Open Space Plan	Yes	Open Space Master Plan, dated 2013	Local Environmental	Bloomingdale Environmental Commission
How has or will this be integrated with the HMP and how does this reduce risk? The plan provides background information on natural resources and recreation in Bloomingdale and provide an Action Plan on how to preserve these resources. The Open Space Plan supports the goals of the HMP by aiming to preserve open green spaces, wetlands, steep slopes, and other critical environmental resources that provide ecosystem services to attenuate hazard impacts.				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Highlands Environmental Resource Inventory for the Borough of Bloomingdale (2009)	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The inventory assesses the existing status of riparian resources, such as wetlands and surface water bodies, that provide protection against floods and help to ameliorate the effects of prolonged droughts. The findings are integrated into the HMP in the Borough's Community Profile and its mitigation strategy.				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Borough of Bloomingdale Emergency Operations Plan	County	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years. Details what each facility or agency will do during a disaster (incident command implementation, command center location and activities, specific plans by department, etc.).				
Continuity of Operations Plan	Yes	Borough of Bloomingdale Emergency Operations Plan	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? The Plan aligns with the goals of the HMP by aiming to assess the ability of essential functions and services to continue during and after as a disaster and identify potential mitigation strategies to minimize those disruptions.				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	Yes	Borough of Bloomingdale Emergency Operations Plan	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? The Plan aligns with the goals of the HMP by aiming to assess the ability of essential functions and services to continue after a disaster and identify potential mitigation strategies to minimize those disruptions or quickly restore operations.				

	Jurisdiction has this?	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
Public Health Plan	Yes	Borough of Bloomingdale Emergency Operations Plan	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? The Plan aligns with the goals of the HMP by aiming to assess the ability of essential public health functions and services to continue during and after as a disaster and identify potential mitigation strategies to minimize those disruptions.				
Other	N/A	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

3.3.2 Development and Permitting Capability

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

Table 3-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Yes, Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Roadrunner software ties to the zoning and could pull out permits in the floodplain.
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	Less than 10 parcels, because they are located in Highlands State Forest. Borough is built-out or large parcel already identified for future development.
Describe the level of buildout in your jurisdiction.	N/A	-

3.3.3 Administrative and Technical Capability

Table 3-4 summarizes potential staff and personnel resources available to Bloomingdale and their current responsibilities that contribute to hazard mitigation.

Table 3-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Autonomous
Zoning Board of Adjustment	Yes	Autonomous
Planning Department	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	The Environmental Commission makes recommendations concerning open space preservation, water resources management; air pollution control; solid waste management; noise control; the protection of all trees, soil, and landscapes; protection of flora and fauna; and environmental appearances. It may conduct research into the use or potential use of open land areas of the Borough, and study and make recommendations concerning all of the Borough's parkland, preserves and natural open space. The Environmental Commission oversees the passive recreation sites and parkland. In addition, applications to the Planning Board and the Zoning Board of Adjustment are reviewed by the Environmental Commission, as appropriate.
Open Space Board/Committee	Yes	Mayor and Council
Economic Development Commission/Committee	Yes	Mayor and Council
Public Works/Highway Department	Yes	Public Works The Bloomingdale Water and Sewer Department continuously strives to provide its customers with an adequate supply of high quality water.
Construction/Building/Code Enforcement Department	Yes	The Building Department processes construction permit applications and enforces compliance with construction sub-code requirements.
Emergency Management/Public Safety Department	Yes	Emergency Management, Fire Department and Police Department. The mission of the Emergency Management Office is to prepare for and protect residents from disasters. OEM is responsible for directing all disaster responses within the Borough of Bloomingdale.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Maintains stormwater basins, pre-storms part of DPW operations, walks through brooks to clean
Mutual aid agreements	Yes	Mayor Council
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer/Planner and Planning Board
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Department

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Planners or engineers with an understanding of natural hazards	Yes	Hired Professional
Staff with expertise or training in benefit/cost analysis	Yes	Finance
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	Yes	Engineering Firm
Surveyors	Yes	Contractors as needed
Emergency manager	Yes	Office of Emergency Management
Grant writers	Yes	Employees and Outside firm write on behalf of their departments.
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

3.3.4 Fiscal Capability

Table 3-5 summarizes financial resources available to Bloomingdale.

Table 3-5. Fiscal Capabilities

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

3.3.5 Education and Outreach Capability

Table 3-6 summarizes the education and outreach resources available to Bloomingdale.

Table 3-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Police Department, Borough Clerk
Personnel skilled or trained in website development	Yes	Consultant
Hazard mitigation information available on your website	Yes	Links to FEMA, NJOEM
Social media for hazard mitigation education and outreach	Yes	Facebook, Municipal Website
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Planning Board/OEM
Warning systems for hazard events	Yes	Reverse 911 and Outdoor Warning Sirens
Natural disaster/safety programs in place for schools	Yes	Pending
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	Facebook / Municipal Website

3.3.6 Community Classifications

Table 3-7 summarizes classifications for community programs available to Bloomingdale.

Table 3-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	Yes	8	10/23/2020
Building Code Effectiveness Grading Schedule (BCEGS)	-	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Class 4Y	10/1/2020
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	-	N/A
Other: Organizations with mitigation focus (advocacy group, non-government)	N/A	-	-

N/A = Not applicable
— = Unavailable

3.3.7 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 3-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough'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 3-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

3.4 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 3-1 is responsible for maintaining this information.

3.4.1 NFIP Statistics

Table 3-9 summarizes the NFIP policy and claim statistics for Bloomingdale.

3.4.2 Flood Vulnerability Summary

Table 3-10 provides a summary of the NFIP program in Bloomingdale.

Table 3-9. Bloomingdale NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**38**
Total Loss Payments	**$414,533**
# Repetitive Loss Properties (NFIP definition)	**13**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**0**
# Severe Repetitive Loss Properties (FMA definition)	**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: NJOEM 2024

Table 3-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Van Dam Avenue (multiple areas). Brandt Lane, Portions of Main St
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Determinations are made in accordance with Borough Code Chapter 30-4.15.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	There have been no recent determinations made.
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 Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	Floodplain Administrator – Borough Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Borough Engineer
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? 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)	Services are provided by the Floodplain Administrator
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Determinations are made in accordance with Borough Code Chapter 30-4.15.
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	July 2015
What is the local law number or municipal code of your flood damage prevention ordinance?	Borough Code Chapter 30. We have adopted the NJDEP model code.
What is the date that your flood damage prevention ordinance was last amended?	It was amended on 6-27-2023 by Ord. No. 23-2023.
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes. Site plan and subdivision review is performed by the planning board. Borough Code Chapters 31 and 31A are also implemented for stormwater control.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Bloomingdale belongs to CRS with a Class 8 rating.

3.5 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 3-11 through Table 3-13.

Table 3-11. 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
2020				
Total Permits`	2	1	0	3
Permits within SFHA	N/A	-	-	-
2021				
Total Permits	1	0	2	3
Permits within SFHA	N/A	-	-	-
2022				
Total Permits	1	0	0	1
Permits within SFHA	N/A	-	-	-
2023				
Total Permits	1	0	0	1
Permits within SFHA	N/A	-	-	-

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

Table 3-12. Recent Major Development and Infrastructure from 2017 to Present

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

** Only location-specific hazard zones or vulnerabilities identified.*

Table 3-13. 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
Federal Hill	Residential	500	Union Ave		In Planning / Negotiations

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

3.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 3-1 through Figure 3-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Bloomingdale has significant exposure. The maps show the location of potential new development, where available.

Figure 3-1. Bloomingdale Hazard Area Extent and Location Map 1

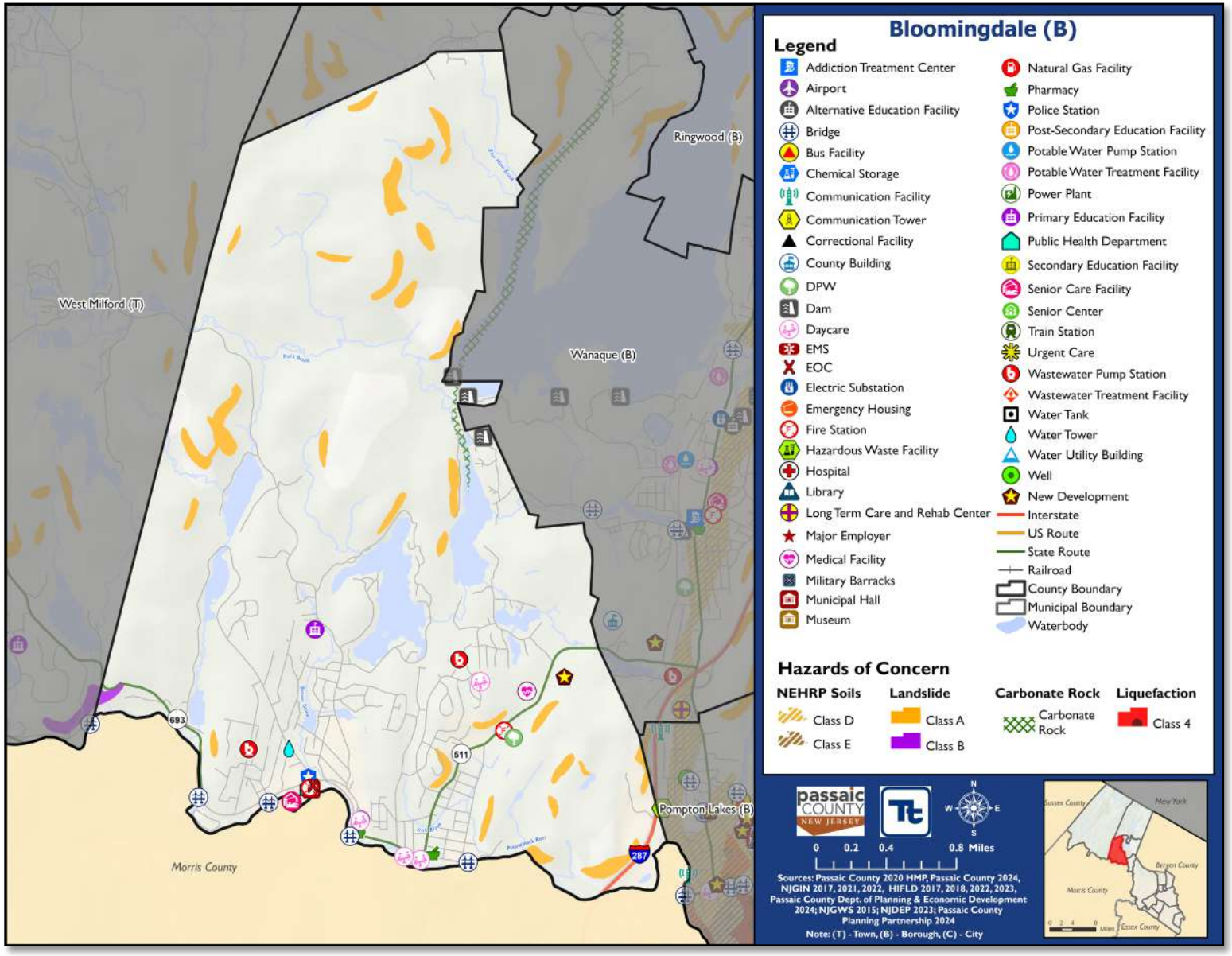
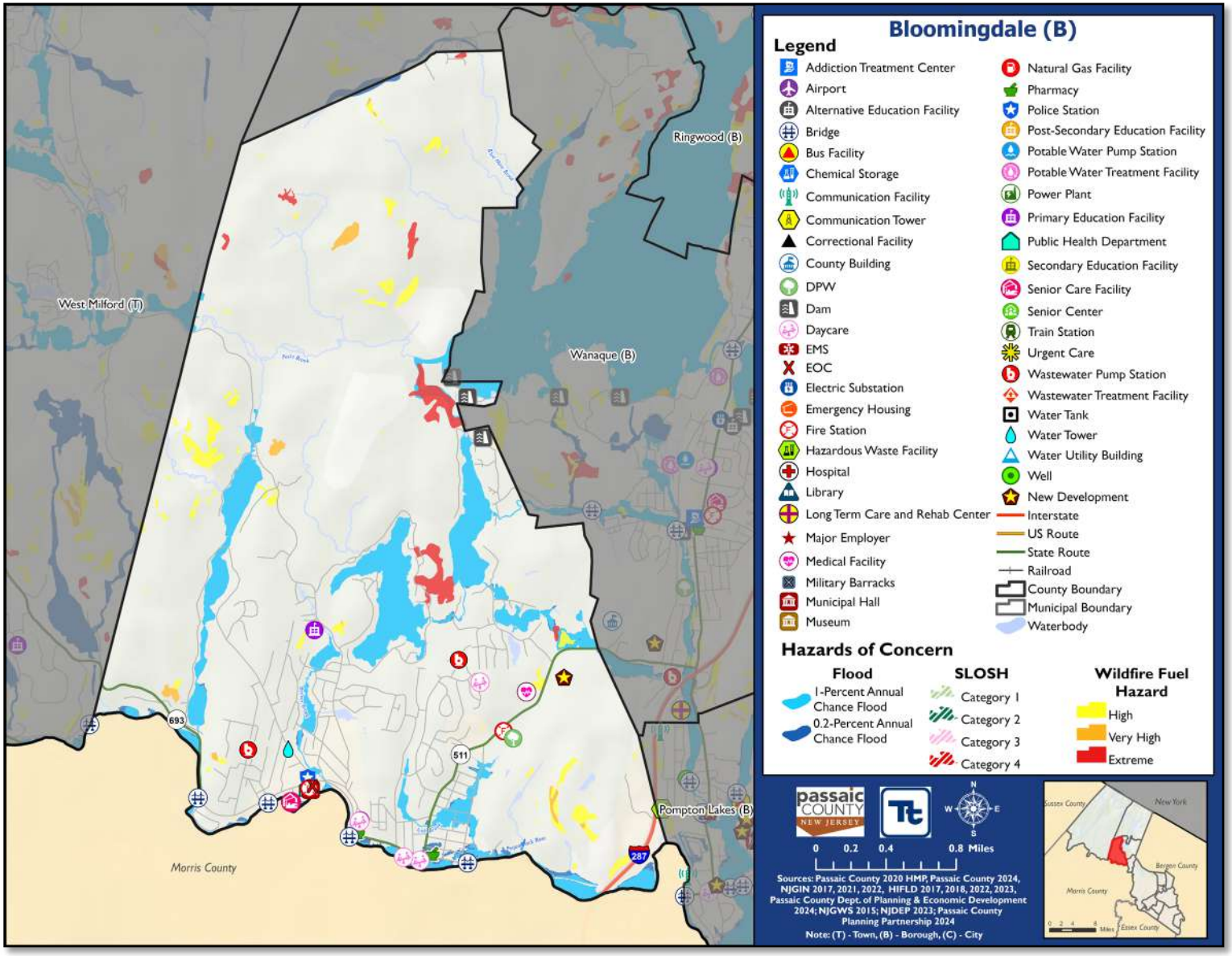


Figure 3-2. Bloomingdale Hazard Area Extent and Location Map 2



3.6.2 Hazard Event History

The history of natural and non-natural hazard events in Bloomingdale is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 3-14 provides details on loss and damage in Bloomingdale during hazard events since the last hazard mitigation plan update.

Table 3-14. Hazard Event History in Bloomingdale

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Bloomingdale
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Town followed Nationally mandated social distancing and closure of public areas. This impacted the community and economy of the Town. Impacts were also seen to the critical facilities, such as first responding agencies and hospitals due to the spread of the virus. The Borough received grant money from FEMA to Passaic County which offset costs for PPE and specific approved items purchased during the pandemic.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	Bloomingdale experienced minor road flooding and closures. Downed Trees and Power Lines
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Bloomingdale experienced minor road flooding and closures. Downed trees and power lines.

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

3.6.3 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 Bloomingdale.

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. Bloomingdale 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 Borough indicated agreement with the individual rankings for the municipality.

Table 3-15 shows Bloomingdale's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 3-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	Medium
Geological Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 3-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

In addition to critical facilities that are exposed to flooding, the Borough of Bloomingdale contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

Table 3-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600029	Bridge	Yes	Yes
1600030	Bridge	Yes	Yes
1600032	Bridge	Yes	Yes
1600031(P) 1400143 (M)	Bridge	Yes	Yes
Little Bees Educational Daycare Center 2	Daycare	Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

3.6.4 Identified Issues

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

- Due to the over capacity of stormwater, streams cannot handle water, causing localized flooding issues impacting roadways and homes.
- The animal shelter, a critical facility, is prone to flooding due to the low river walls in the area. This not only endangers the animals and disrupts shelter operations but also poses a risk to the two repetitive loss properties on Brandt Lane. Addressing this flooding issue is a top priority for the Borough, especially during severe weather events, to ensure the safety and functionality of these important sites.
- During hazard events creating power outages, schools in the Borough do not have backup power. These schools may serve multiple functions, like emergency shelters, and their malfunction could have outsized effects on the community.
- Stormwater from the area drains into the wetland area and then into Oakwood Lake during severe weather events. The wetland has become inefficient and does not drain quick enough. Due to lack of capacity of the existing drainage and existing wetland at Oakwood Lake, water backs up resulting in neighborhood flooding.
- The Borough will be updating its Master Plan, and it does not integrate the HMP or climate change considerations. Disregarding mitigation considerations may cause gaps in the ability to fully prepare for hazard events.
- There are floodplains in the Borough, and properties, including repetitive loss properties in the Borough that have experienced historic flood losses and are vulnerable to flooding. However, the Borough does not maintain a list of property owners that may be interested in support for mitigation measures.

3.7 MITIGATION STRATEGY AND PRIORITIZATION

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

3.7.1 Past Mitigation Action Status

Table 3-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

3.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 3-17, Bloomingdale did not identify additional mitigation efforts completed since the last HMP.

Table 3-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Bloomingdale-001	Van Dam Avenue Stream Restoration	Coastal Storm, Flood, Severe Weather	Borough Engineer	**Problem:** Due to the over capacity of stormwater, steams cannot handle water, causing localized flooding issues impacting roadways and homes. **Solution:** Implement streambank management techniques and restoration to provide increased capacity of the stream as well as additional floodplain capacity via green infrastructure solutions.	1. In Progress 2. Seeking funding for engineering study, permitting and construction. Short-term solutions include desilting and disengaging which has been partially implemented along a portion Van Dam Brook in 2023. Additional work is being pursued for 2024 and beyond.	1. Include. 2. No changes. 3. N/A
2020-Bloomingdale-002	Brandt Lane Flood Wall	Coastal Storm, Flood, Severe Weather	Borough Engineer	**Problem:** Due to low river walls, flooding occurs at the animal shelter which is a critical facility. There are also two repetitive loss properties on Brandt Lane as well. This is the Borough's priority to address flooding. **Solution:** Install a flood wall to keep water from impacting the shelter and properties	1.No Progress 2. Seeking funding for engineering study, permitting and construction.	1. Include in 2025 HMP. 2. Keep as is. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Bloomingdale-003	Backup power for Sewer Pump Station and Schools	Coastal Storm, Earthquake, Extreme Temperature, Flood, Geological, Severe Weather, Severe Winter Weather, Wildfire	Borough Engineer	**Problem:** During hazard events creating power outages, the sewer pump station, which is a critical facility cannot operate and service the residents and business of the service area. This facility requires 24/7 operation. In addition, the schools in the Borough do not have backup power. **Solution:** Install a natural gas generator. W.T. Bergen School on 225 Glenwild Avenue and Vreeland Avenue Sewer Pump Station Generator	1. In Progress 2. Pump stations have been completed. School is in progress. School is seeking funding to purchase and install a generator.	1. Include in 2025 HMP 2. Backup power for Schools. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Bloomingdale-004	Oakwood Lake Wetland Restoration	Coastal Storm, Flood, Severe Weather	Governing Body, Borough Engineer	**Problem:** Stormwater from the area drains into the wetland area and then into Oakwood Lake. The wetland has become inefficient and does not drain quick enough. Due to lack of capacity of the existing drainage and existing wetland at Oakwood Lake, water backs up resulting in neighborhood flooding. **Solution:** Redirect stormwater flow and increase capacity of this wetland area to reduce flood impacts. Additional studies may be required to identify natural system solutions to implement.	1. No Progress 2. Seeking funding for engineering study, permitting and construction.	1. Include in 2025 HMP 2. Keep as is. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Bloomingdale-005	Integrate the HMP and climate change in the Master Plan Update	Coastal Storm, Dam Failure, Disease Outbreak, Earthquake, Extreme Temperature, Flood, Geological, Infestation and Invasive Species, Severe Weather, Severe Winter Weather, Wildfire	Mayor and Governing Body	**Problem:** The Borough will be updating its Master Plan and it does not integrate the 2020 HMP and climate change. **Solution:** On the horizon - implementing in the Master Plan that future developments require electric charging stations for car; Environmental Commission; participate in Sustainable NJ	1. In Progress 2. Master Plan being completed this year. Should be completed by 2025.	1. Include in 2025 HMP 2. Keep as is. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Bloomingdale-006	Repetitive Loss Properties	Coastal Storm, Flood, Severe Storm	Mayor and Governing Body	**Problem:** There are floodplains in the Borough, and properties, including repetitive loss properties in the Borough that have experienced historic flood losses and are vulnerable to flooding. **Solution:** The Borough Mayor will distribute letters to flood-vulnerable property owners to inform them of their vulnerability; and mitigation options available. They can connect with the Borough Construction Official, Engineer and NFIP Floodplain Administrator to discussion options. The Borough will develop a grant application to implement elevations for volunteers who wish to mitigate their property.	1. No Progress 2. Seeking funding.	1. Include in 2025 HMP 2. Keep as is. 3. N/A

3.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Bloomingdale 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 Bloomingdale 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 Borough priorities.

Table 3-18 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 3-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 3-18. 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				
Drought	X	X			X	X				
Extreme Temperature	X	X			X	X				
Flood	X	X	X		X	X		X		
Geological Hazards	X	X			X	X				
Severe Weather	X	X	X		X	X		X		
Severe Winter Weather	X	X			X	X				
Wildfire	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 3-19. 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-BloomingdaleB-001	Van Dam Avenue Stream Restoration	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
2025-BloomingdaleB-002	Brandt Lane Flood Wall	1	1	1	1	0	0	0	1	1	1	1	1	1	1	**11**	High
2025-BloomingdaleB-003	Install a Natural Gas Generator at W.T. Bergen School	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2025-BloomingdaleB-004	Oakwood Lake Wetland Restoration	0	1	1	1	1	0	1	1	1	1	1	1	1	0	**11**	High
2025-BloomingdaleB-005	Integrate the HMP and Climate Change in Master Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2025-BloomingdaleB-006	Repetitive Loss Properties	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

2025-BloomingdaleB-001. Van Dam Avenue Stream Restoration

Lead Agency:	Borough Engineer
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	Due to the over capacity of stormwater, streams cannot handle water, causing localized flooding issues impacting roadways and homes.
Description of the Solution:	The Borough Engineer will implement streambank management techniques and restoration to provide increased capacity of the stream as well as additional floodplain capacity via green infrastructure solutions.
Estimated Cost:	High
Potential Funding Sources:	FEMA HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6,7,8
Benefits:	These techniques increase the capacity of streams and floodplains, effectively reducing localized flooding.
Impact on Socially Vulnerable Populations:	Mitigating flooding ensures that vulnerable communities are less likely to experience displacement and property damage.
Impact on Future Development:	Nature-based solutions help meet environmental regulations and standards, facilitating smoother development processes.
Impact on Critical Facilities/Lifelines:	Reducing flood risks helps maintain the functionality of essential services and transportation routes.
Impact on Capabilities:	Provides more effective and sustainable stormwater management solutions, improving overall infrastructure management.
Climate Change Considerations:	Climate change is leading to more frequent and intense storms, which can increase the risk of flooding.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Installing retention ponds	Need regular maintenance which can be costly
Converting to concrete channelization	Disrupts natural habitats, and is expensive to maintain

2025-BloomingdaleB-002. Brandt Lane Flood Wall

Lead Agency:	Borough Building Department
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The animal shelter, a critical facility, is prone to flooding due to the low river walls in the area. This not only endangers the animals and disrupts shelter operations but also poses a risk to the two repetitive loss properties on Brandt Lane. Addressing this flooding issue is a top priority for the Borough, especially during severe weather events, to ensure the safety and functionality of these important sites.
Description of the Solution:	To mitigate the flooding risk, the Building Department plans to install a flood wall. This flood wall will act as a barrier to prevent water from reaching the animal shelter and the properties on Brandt Lane. By implementing this solution, the Borough aims to protect these critical facilities from future flooding, ensuring their continued operation and safety during severe weather conditions.
Estimated Cost:	High
Potential Funding Sources:	FEMA HMGP, FMA, Borough Budget
Implementation Timeline:	Within 5 years
Goals Met:	2,5,6,8
Benefits:	Critical facility will be protected from flooding.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for emergency responders to stage and deploy resources to vulnerable and hazard prone areas.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow operations to adapt and resume in a more efficient manner.
Impact on Critical Facilities/Lifelines:	With a protected critical facility, communications are likely to remain intact between responding agencies.
Impact on Capabilities:	Ensuring continuity of operations allows for a more rapid return to normalcy after a hazard event.
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

Action	Evaluation
No action	Flooding continues
Elevate properties	Costly and may not solve issue
Relocate properties	Not possible

2025-BloomingdaleB-003. Install a Natural Gas Generator at W.T. Bergen School

Lead Agency:	Borough Building Department
Supporting Agencies:	Office of Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	During hazard events creating power outages, schools in the Borough do not have backup power.
Description of the Solution:	The Borough Engineer will oversee installation of a natural gas generator and necessary components to supply backup power to W.T. Bergen School located at 225 Glenwild Avenue.
Estimated Cost:	High
Potential Funding Sources:	FEMA HMGP, Borough Budget
Implementation Timeline:	Within 5 years.
Goals Met:	1,2,5,6
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, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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.

2025-BloomingdaleB-004. Oakwood Lake Wetland Restoration

Lead Agency:	Borough Building Department
Supporting Agencies:	Borough Council
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	Stormwater from the area drains into the wetland area and then into Oakwood Lake during severe weather events. The wetland has become inefficient and does not drain quick enough. Due to lack of capacity of the existing drainage and existing wetland at Oakwood Lake, water backs up resulting in neighborhood flooding.
Description of the Solution:	The Borough Engineer will be responsible for redirecting stormwater flow and increase capacity of this wetland area to reduce flood impacts. Additional studies may be required to identify natural system solutions to implement.
Estimated Cost:	Medium
Potential Funding Sources:	FEMA HMGP, Borough Capital
Implementation Timeline:	Within 5 years
Goals Met:	1,2,7,8
Benefits:	Reduction in flood risk, stormwater flood damage, maintains emergency access.
Impact on Socially Vulnerable Populations:	Enhanced drainage can reduce the risk of flooding in neighborhoods, protecting homes and personal property, which is especially crucial for socially vulnerable populations who may lack resources for recovery.
Impact on Future Development:	Improved infrastructure makes the area more attractive for residential and commercial development, fostering economic growth.
Impact on Critical Facilities/Lifelines:	By preventing flooding, critical facilities can maintain continuity of operations.
Impact on Capabilities:	Improved stormwater management increases the community's resilience to severe weather events, reducing the overall impact and recovery time.
Climate Change Considerations:	Climate change is expected to increase the frequency and intensity of weather events, which can overwhelm existing drainage systems, leading to more frequent and severe flooding.
Mitigation Category	Natural Systems Protection
CRS Category	Natural Resource Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	Current problem continues
Elevate neighborhood homes	Costly and would not solve flooding issue
Buyout neighborhood	Costly and would not solve issue

2025-BloomingdaleB-005. Integrate the HMP and Climate Change in Master Plan Update

Lead Agency:	Planning Board
Supporting Agencies:	Borough Council
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The Borough will be updating its Master Plan and it does not integrate the 2025 HMP and climate change. Disregarding mitigation considerations may cause gaps in the ability to fully prepare for hazard events.
Description of the Solution:	During the Master Plan update, the Borough Planning Board will integrate hazard mitigation principals and recommendations into the plan. The Borough will also use available tools and resources from FEMA and other sources to integrate climate adaption planning such as FEMA's "Climate Adaptation Planning: Guidance for Emergency Managers" document. Additionally, the Borough will implement into the Master Plan that future developments require electric charging stations for car; Environmental Commission; participate in Sustainable NJ.
Estimated Cost:	Low
Potential Funding Sources:	Borough Budget
Implementation Timeline:	1-2 years
Goals Met:	1, 2, 4, 5, 6
Benefits:	Provides an opportunity for coordination amongst agencies and their planning efforts to improve the overall ability to prepare for, respond to, and recover from events.
Impact on Socially Vulnerable Populations:	Communities that collaborate and coordinate their planning efforts are more likely to have identified ways to best work with vulnerable populations to increase their level of preparedness.
Impact on Future Development:	Coordinated planning efforts provide an opportunity for efficient and safe growth and development.
Impact on Critical Facilities/Lifelines:	Integrating mitigation into building and zoning protects existing infrastructure and guides the safe development of new construction.
Impact on Capabilities:	A consolidated planning process brings together the capabilities of agencies and departments and better identifies what resources are available at any given point in time and where they are needed most.
Climate Change Considerations:	As the climate changes, planning processes will require a more intense focus on plan maintenance and gathering of the best data to remain current and accurate over time. The Borough will use available tools and resources from FEMA and other sources to integrate climate adaptation planning such as FEMA's "Climate Adaptation Planning: Guidance for Emergency Managers" document.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Integrate hazard mitigation principles in only hazard mitigation appendices	The plan will miss integration opportunities in the master plan.
	Using only the Boroughs resources	Provides limited guidance

2025-BloomingdaleB-006. Repetitive Loss Properties

Lead Agency:	Mayor
Supporting Agencies:	Floodplain Administrator, Borough Building Department
Hazard(s) of Concern:	Severe Weather, Flood
Description of the Problem:	There are floodplains in the Borough, and properties, including repetitive loss properties in the Borough that have experienced historic flood losses and are vulnerable to flooding.
Description of the Solution:	The Borough Mayor will distribute letters to flood-vulnerable property owners to inform them of their vulnerability, and mitigation options available. They can connect with the Borough Construction Official, Engineer and NFIP Floodplain Administrator to discussion options. The Borough will develop a grant application to implement elevations for volunteers who wish to mitigate their property.
Estimated Cost:	Low
Potential Funding Sources:	Borough Budget, FMA, HMGP
Implementation Timeline:	Within 5 years
Goals Met:	1,2,3,4,5,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	Issue continues
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

4. CITY OF CLIFTON

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

4.1 HAZARD MITIGATION PLANNING TEAM

The City of Clifton identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many City departments. The Office of Emergency Management represented the community on the Passaic County HMP Planning Partnership and Steering Committee 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 4-1 summarizes City officials who participated in the development of the annex and in what capacity. Additional documentation of the City's planning activities through Planning Partnership meetings is included in Volume I.

Table 4-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Lt. Angelina Tirado, Coordinator, Office of Emergency Management Address: 900 Clifton Avenue, Clifton, NJ 07013 Phone Number: (973) 277-7813 Email: atirado@cliftonnj.org	Name/Title: Captain Jeffrey Bracken, Deputy Coordinator, Office of Emergency Management Address: 900 Clifton Avenue, Clifton, NJ 07013 Phone Number: 973-979-3695 Email: jbracken@cliftonnj.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Ernest Tedesco, Construction Officer Address: 900 Clifton Avenue, Clifton, NJ 07013 Phone Number: (973) 470-5809 Email: etedesco@cliftonnj.org	
Additional Contributors	
Name/Title: Lt. Angelina Tirado, Coordinator, Office of Emergency Management Method of Participation: Attended Planning Partnership Kickoff meeting; Provided updated information on hazard event history, capability assessment, and previous mitigation actions.	
Name/Title: Captain Jeffrey Bracken, Deputy Coordinator, Office of Emergency Management Method of Participation: Attended Planning Partnership Kickoff meeting; Participated in the planning process.	
Name/Title: Ernest Tedesco, Construction Official Method of Participation: Attended Planning Partnership Kickoff meeting; Provided updated information on NFIP, and building permits and new development.	
Name/Title: Captain Darren Kester, Commander, Police Department Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Edith Mayton, Finance Department Method of Participation: Attended Planning Partnership Kickoff meeting.	

Name/Title: Jason Van Winkle, Department of Public Works Method of Participation: Attended Planning Partnership Kickoff meeting.
Name/Title: Jennifer Terwilliger, HAZMAT Coordinator, Health Department Method of Participation: Attended multiple meetings in the planning process.
Name/Title: Michael Onder, Deputy OEM Coordinator Method of Participation: Attended Planning Partnership Kickoff meeting.

4.2 COMMUNITY PROFILE

4.2.1 Brief History

The City of Clifton was incorporated as a city by an act of the New Jersey State Legislature on April 26, 1917. Previously the city had been known as Acquackanonk Township, but two days before the act was passed, a referendum was held and the residents voted to give the city the name as it is known today.

4.2.2 Location

The City is located in the southeast portion of Passaic County. It is bordered to the north by the City of Paterson and Borough of Woodland Park, to the east by the City of Passaic, to the west by the Township of Little Falls, and to the south by Essex County.

4.2.3 Governing Body Format

The City of Clifton is governed by the 1923 Municipal Manager Law form of government. The City has a mayor and six councilpersons.

4.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Clifton was 90,296, a 7.3 percent increase 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 2022 U.S. Census, American Community Survey (ACS), indicates that 6.4 percent of the population is 5 years of age or younger, 15.1 percent is 65 years of age or older, 13.3 percent is non-English speaking, 13.3 percent is below the poverty threshold, and 9 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

4.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Clifton 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 Clifton to identify opportunities for integrating mitigation concepts into ongoing City procedures.

4.3.1 Planning and Regulatory Capability and Integration

Table 4-2 summarizes the planning and regulatory tools that are available to Clifton.

Table 4-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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 197 – Uniform Construction Codes	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures. There is hereby established in the City of Clifton a State Uniform Construction Code enforcing agency to be known as the "Clifton Enforcing Agency," consisting of a construction official, building subcode official, plumbing subcode official, electrical subcode official, fire protection subcode official, and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.			

	Jurisdiction has this?	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
Zoning/Land Use Code	Yes	Chapter 461 – Zoning, Ordinance 4502-79, 2006	Local	Zoning Department
How has or will this be integrated with the HMP and how does this reduce risk? The code guides the future growth and development of the City in accordance with a comprehensive plan of land use and population density, as set forth in the Master Plan of the City of Clifton that represents the most beneficial, economically productive and socially satisfactory relationships among the residential, commercial and industrial areas within the City of Clifton. The code has a steep slope overlay zone and establishes special land use development controls in the area along the west side of Valley Road to the western boundary of the City with Montclair, Little Falls, West Paterson, and Paterson. The vacant parcels of land in this area are considered environmentally sensitive due to the steep slope topography and susceptible to flooding, soil erosion, or damage/destroy public resources. The goal of this overlay zone is to mitigate potential hazards which exist in steep-sloped areas by reason of soil erosion, sedimentation, soil slippage, flooding, surface water runoff, rockfall, destruction of unique views, loss of vegetation and damage to downhill areas. Furthermore, it is appropriate that special design and construction practices be conducted within steep-sloped areas to preserve and maximize the best use of the natural terrain and to maintain the critical landforms intact to the extent reasonably possible and desirable.				
Subdivision Code	Yes	Chapter 399 – Subdivision of Land, 1954	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Ensures safe and uniform construction and permitting of approved facilities. The chapter is currently undergoing revision.				
Site Plan Code	Yes	Chapter 461, Article 7 – Site Plan Approval	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? No building permit shall be issued for the following uses until site plan approval has been granted by the Planning Board or, in the case of a use variance by the Board of Adjustment, in accordance with the procedures set forth in the Land Use Procedures Ordinance of the City of Clifton.				
Stormwater Management Code	Yes	Chapter 394 – Stormwater Control, 2006; Chapter 375 – Sewers, 2016; Chapter 374 – Sewer Utility	Local	Police Department, Engineering Department and the Health Department
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 394 (Stormwater Control); adopted by the municipal council on 3/21/2006 by ordinance number 6567-06. This code establishes minimum stormwater management requirements and controls for major developments. Any development needs to incorporate a maintenance plan for the stormwater management measures incorporated into the design of a major development. The actions in the ordinance limit soil erosion, encourages non-structural controls, encourages recharge, and improves stormwater quality and reduce quantity. • Chapter 375 (Sewers) – this code was last amended on April 5, 2016. Through rules, regulations, and inspections illicit use of the sanitary and stormwater system is controlled. This code makes it unlawful to discharge restricted waste into any natural outlet within the City. • Chapter 374 (Sewer Utility) – this code enforces the operation, management, control, and maintenance of the sewer system and all extensions and improvements throughout the City. The overall goal is to safeguard and maintain the City's sanitary sewer system.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Tree Removal and Protection Ordinance, 2002	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? The ordinance mandates that permits are required to cut down or remove any tree 4 inches or greater measured at the height of 4.5 feet above the ground. The application shall be submitted for all commercial, multifamily and one- and two-family properties. All applications are filed with our Department of Public Works (DPW). Warnings are issued as a first step of enforcement but then fines would be issued for non-compliance through the DPW.				
Flood Damage Prevention Ordinance	Yes	Chapter 239 – Flood Damage Prevention, 2020	Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? These regulations, in combination with the flood provisions of the Uniform Construction Code and FHACA shall apply to all proposed development in flood hazard areas established in Article II of these regulations. The purposes and objectives of these regulations are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to: A. Protect human life and health. B. Prevent unnecessary disruption of commerce, access, and public service during times of flooding. C. Manage the alteration of natural floodplains, stream channels and shorelines; D. Manage filling, grading, dredging and other development which may increase flood damage or erosion potential. E. Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards. F. Contribute to improved construction techniques in the floodplain. G. Minimize damage to public and private facilities and utilities. H. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas. I. Minimize the need for rescue and relief efforts associated with flooding. J. Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas. K. Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events. L. Meet the requirements of the National Flood Insurance Program for community participation set forth in 44 CFR 59.22. The ordinance follows the latest model code coordinated ordinance from NJDEP.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other	Yes	Chapter 57 – Land Use Procedures; Chapter 433 – Trees and Shrubbery, 2002; Chapter 393 – Special Improvement District, 1998	-	-

How has or will this be integrated with the HMP and how does this reduce risk?

- Chapter 433 (Trees and Shrubbery) - The City of Clifton adopted the Tree Removal and Protection Ordinance in 2002. The ordinance mandates that permits are required to cut down or remove any tree 4 inches or greater measured at the height of 4.5 feet above the ground. The application shall be submitted for all commercial, multifamily and one- and two-family properties. All applications are filed with our Department of Public Works (DPW). Warnings are issued as a first step of enforcement but then fines would be issued for non-compliance through the DPW.
- Chapter 57 (Land Use Procedures) - The Planning Board and Zoning Board both have the authority in certain instances to review and approve Subdivisions and Site Plans in accordance with the development regulations that control improvements and buildings in flood hazard areas. This code refers to the flood damage prevention ordinance, subdivision of land, and zoning.
- Chapter 393 (Special Improvement District) – adopted September 15, 1998

PLANNING DOCUMENTS				
General/Comprehensive Plan	Yes	Master Plan of the City of Clifton, 2014, Reexamination Report, 2021	Local	Zoning Department

How has or will this be integrated with the HMP and how does this reduce risk?
Encourages City actions to guide the appropriate use or development of all lands in Clifton which will promote public health, safety, morals and general welfare, while securing the public from fire, flood, panic and other natural and manmade disasters.

Capital Improvement Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
Capital improvements are included in the annual budget.

Disaster Debris Management Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Floodplain Management or Watershed Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Stormwater Management Plan	Yes	City of Clifton Stormwater Management Plan, 2008	Local	Department of Public Works

How has or will this be integrated with the HMP and how does this reduce risk?
The City's Stormwater Management Plan addresses the potential risks due to increased stormwater runoff from major new developments and outlines design and performance standards for stormwater management. The goals of this Plan include, reducing flood damage, soil erosion and nonpoint source pollution, maintain groundwater recharge and maintain the integrity of stream channels. The Plan details specific changes to the City's Code, which will incorporate nonstructural stormwater management strategies into the ordinances. Additionally, the plan provides specific mitigation projects that could be implemented if on-site stormwater management criteria cannot be met.

	Jurisdiction has this?	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
Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan, 2020	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	Local	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	Yes	Community Forest Management Plan, 2022	Local	Council, Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of the plan is to improve the quality of life in the City by maximizing the environmental, social, and economic benefits of trees to the community while minimizing the associated costs and liabilities. Several of the goals align with hazard mitigation and are to secure safety from fire, flood, panic and other natural and man-made disasters consistent with the Master Plan, and the preservation, planting and/or maintenance of buffers and filter strips along waterways and drainage courses, minimization of impervious groundcover, and the design and construction of stormwater collection systems in conjunction with new development to ensure efficient, natural drainage, minimize the risk of serious flooding, and minimize the runoff of silt, nutrients, and pollutant laden stormwater into local water networks as related to the Stormwater Management Plan. Additionally, the City's master plan is used to guide future growth and development in the City and this plan refers to the master plans' goals, along with the stormwater management plan and the tree removal protection ordinance.				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Risk Communications Plan for Clifton Health Department, 2017	Local	Health Department
How has or will this be integrated with the HMP and how does this reduce risk? This plan discusses the responsibilities of the health department during a disaster or public health emergency. They are responsible for providing public information and educational programs to: Provide support during the four phases of the emergency: mitigation, preparedness, response, and recovery operations; Provide the public with accurate, timely and easily understood event- related information concerning protective actions, health notices and assistance information; control rumors; coordinate information releases with all participating public and private agencies, emergency responders, and all levels of government to support public officials and media representatives in satisfying the public's demand for accurate and consistent information; limit public information activities to the Clifton-specific events and actions; the Local Health Officer of the City of Clifton may serve as spokesperson for the EOC or be a subject matter expert and support the Municipal PIO. This determination is made in cooperation with the Municipal Government and/or OEM Coordinator; provide information using health literacy principles for limited language proficient populations; and coordinate with NJDOH, Northwest Region, Passaic County Health Department, St. Mary's General Hospital, and St. Joseph's Regional Medical Center for Subject Matter Experts as needed.			
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	City of Clifton Emergency Operations Plan	Local	Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? The Clifton Health Department has an Emergency Operations Plan (EOP) that is used to prepare for, respond to, and recover from major disasters. The plan has annexes which are updated every year if needed. The plan is approved by NJSP every two years. There are appendixes that go along with the plan and staff changes are updated if there is a new hire, promotion, or retirement.				
Continuity of Operations Plan	Yes	Continuity of Operations Plan for Clifton Health Department (2021)	Local	Health Department
How has or will this be integrated with the HMP and how does this reduce risk? This plan was developed for the Clifton Health Department and is designed to be a major component of a comprehensive and effective program to ensure the continuity of essential functions and governance under all circumstances, including hazard events. The plan serves as a supplemental tool for the Health Department, in addition to the EOP.				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	Yes	City of Clifton Community Health Improvement Plan, 2019	Local	Health Department
How has or will this be integrated with the HMP and how does this reduce risk? Action-oriented, living document intended to mobilize the community in areas where we can be most impactful on improving the health of all Clifton residents, particularly those most vulnerable. Serves as a comprehensive set of policy and program recommendations for our community based on the most current information we have regarding the health status of our community.				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

4.3.2 Development and Permitting Capability

Table 4-3 summarizes the capabilities of Clifton to oversee and track development.

Table 4-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Zoning and Planning Departments/Board
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No	-
Describe the level of buildout in your jurisdiction.	N/A	City is nearly built out.

4.3.3 Administrative and Technical Capability

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

Table 4-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning Board is authorized to adopt bylaws and rules and regulations governing its procedural operation. It shall also have the following powers and duties: A. To make and adopt and from time to time amend a Master Plan for the physical development of the City B. To administer the provisions of the Land Subdivision Ordinance and ordinances pertaining to site plan review of the City in accordance with the provisions of said ordinances and the Municipal Land Use Law C. To grant conditional uses in accordance with the provisions of Chapter 461, Zoning, and any other ordinance of the City applicable to conditional uses D. To participate in the preparation and review of programs or plans required by state or federal law or regulations. E. To assemble data on a continuing basis as part of a continuous planning process. F. To annually prepare a program of municipal capital improvement projects projected over a term of six years, and amendments thereto, and recommend same to the governing body. G. To consider and make report to the governing body as to any proposed development regulation submitted to it H. Whenever the proposed development requires approval of a subdivision, site plan or conditional use, to grant to the same extent and subject to the same restrictions as the Zoning Board of Adjustment variances
Zoning Board of Adjustment	Yes	The Board of Adjustment exercises the power to review and make decisions on appeals relating to interpretation of the Zoning Ordinance.
Planning Department	Yes	The City of Clifton Office of City Planning is responsible for all Planning Board Applications and Zoning Board Applications as it pertains to planning in the City of Clifton. All applications shall be in compliance with Chapter 461 of the Code of the City of Clifton. Some of the functions that the Office of City Planning performs are: • Review all Planning Board Applications • Review Zoning Board of Adjustment Applications on an as needed basis • Advise Mayor and Council on Planning Issues facing the City of Clifton • Advise and Assist the City of Clifton Agencies on Planning Issues • Revise the City of Clifton Master Plan as per the Municipal Land Use Law or when requested by the Planning Board • Prepare Grant applications for special projects and preservation in the City of Clifton • Prepare Ordinances and Rezoning requests

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		• Prepare documentation to have the City of Clifton in compliance with the state of New Jersey State Development and Redevelopment Plan
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	The Clifton Environmental Commission is an advisory body composed of Clifton residents appointed by the Mayor. The Commission plays a coordinating role among the diverse actors in environmental protection: the NJ Department Protection (NJDEP), US Environmental Protection Agency (USEPA), Soil Conservation Districts, local planning boards, boards of health and utilities authorities.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	The Clifton Office of Economic Development is available to assist businesses in the City and businesses seeking to relocate to the City with a variety of services and programs. The Office brings together the public, non-profit and private sectors to establish a comprehensive framework for economic growth and revitalization in the City.
Public Works/Highway Department	Yes	The goals of the Department of Public Works are to help provide a sanitary and safe quality of life for the residents of Clifton and to help preserve the beauty of the community for the citizens to enjoy. To achieve this quality of life, the Department is divided into the following seven divisions: • Building and Grounds: The Building and Grounds Division is responsible for cleaning and repair of all City owned buildings, dealing with problems such as heating and air conditioning, plumbing and electrical repair, and small construction projects. • Fleet Management: The Fleet Management Division is responsible for the maintenance and repair of all City owned vehicles. • Recreation Maintenance Parks: The Recreation Maintenance Division is also responsible for the Parks Division. These divisions are responsible for maintaining all of the City ball fields and other City owned property. • Recycling: The Recycling Division is responsible for the collection of curbside recycling materials • Sewers: The Sewer Division maintains and repairs the City's underground infrastructure. There are 158.8 miles of sanitary sewer lines in the City as well as 50 miles of storm drains, 3,335 manholes an uncounted number of catch basins and two

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		pump stations. This division responds to sanitary sewer blockages, house lateral stoppages, and storm drain problems. A separate crew is responsible for the maintenance and repair of storm drain inlets and manhole repairs. They also maintain brooks, streams and drainage ditches. Beginning this year, this division will also be responsible for storm basin cleaning. The division will also start preventative maintenance of sanitary sewer lines to include grease and root treatment. • Shade Tree: The Shade Tree division is responsible for curbside branch pickup, the City's tree farm, and fall leaf collection. This division also responds to requests for tree trimming, removal, and stump grinding. • Streets and Roads: The Street and Roads Division is responsible for maintenance of all 148 miles of City streets. They deal primarily with pothole patching, street sweeping, and small strip paving projects. They also work with the Sewer Division to replace and repair sidewalks and curbs. The Engineering Department provides engineering, surveying and other technical services to the administration and all other departments and divisions of the City. The Department implements the Public Works Capital Improvement plan, as authorized and funded by the City Council, by planning and prioritizing needs, collecting information and preparing plans and specifications for the construction of various Public Works projects.
Construction/Building/Code Enforcement Department	Yes	The Building Department issues permits for residential, commercial and industrial construction and certificates of approval and occupancy. It conducts building, electric and plumbing subcode inspections in order to determine that all work is completed in accordance with the State Uniform Construction Code and all applicable prior approvals. All subcode officials are licensed by the State of New Jersey as Class 1, which is the highest rating offered by the State.
Emergency Management/Public Safety Department	Yes	Emergency Management and Public Safety. Should an emergency arise that would cause the activation of the Office of Emergency Management Organization, chiefs and department heads would remain in charge of their respective sections. However, requests for communications, movements, resources and needs would be coordinated through the incident command post site or at the Emergency Operations Center.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Tree trimming, storm drain clearing, and sewer maintenance
Mutual aid agreements	Yes	Surrounding municipalities, American Red Cross, and Passaic County; UASI

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering and Zoning
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering and Construction Code
Planners or engineers with an understanding of natural hazards	Yes	Engineering and Construction Code
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	Yes	Engineering and OEM
Staff that work with socially vulnerable populations or underserved communities	Yes	Staff that work with socially vulnerable populations or underserved communities- Health Dept -3 Full time & 1 Consultant & Social Services- 2 Social Workers, 2 Social Workers Assistants Botany Office- provides services to these populations.
Environmental scientists familiar with natural hazards	No	-
Surveyors	Yes	Engineering
Emergency manager	Yes	Office of Emergency Management Coordinator
Grant writers	Yes	Consultant
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	Yes	CERT Program Manager

4.3.4 Fiscal Capability

Table 4-5 summarizes financial resources available to Clifton.

Table 4-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes

Financial Resources	Accessible or Eligible to Use?
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
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

4.3.5 Education and Outreach Capability

Table 4-6 summarizes the education and outreach resources available to Clifton.

Table 4-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	City Manager is the Public Information Office
Personnel skilled or trained in website development	Yes	Website built by consultant; city maintains
Hazard mitigation information available on your website	Yes	Rave (reverse 911); public access TV channel; municipal website; CERT; LEPC/Hazardous Material Control Board; social media (Facebook and Twitter). The City posts important information and alerts before, during, and after storm events to inform residents and keep them up-to-date.
Social media for hazard mitigation education and outreach	Yes	Facebook, X (Formerly Twitter), and Instagram
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Hazardous Material Control Board - makes recommendations to ensure that storage and use of hazardous chemicals in Clifton are done in accordance to federal, state, and local laws to ensure the safety of the residents and businesses in Clifton. All new businesses within the City of Clifton are required to complete a Building Department CBC application and must report any hazardous materials that will be used or stored on-site via HMCB application and Fire Department Inventory Sheet.
Warning systems for hazard events	Yes	Rave (reverse 911); public access TV channel; municipal website; CERT and LEPC; social media (Facebook and Twitter)
Natural disaster/safety programs in place for schools	No	-

Outreach Resources	Available?	Comment
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	Health and Human Services includes: • Individuals with Disabilities and Special Needs: Clifton's Advisory Committee for Individuals was created by the Municipal Council in 1980 according to the provisions of New Jersey law to advise the Council in matters concerning residents with disabilities. • Senior Services: The activities provided to residents are divided into three categories: Older Adult Services, Nutrition Programs, and Outreach/Transportation • Social Services: The Clifton Health Department - Social Services Division offers assistance in a wide variety of areas. the goal of this division is to improve the overall well-being of individuals. families, and the community as a whole.
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Social media, Clifton magazine, Channel 40 public access

4.3.6 Community Classifications

Table 4-7 summarizes classifications for community programs available to Clifton.

Table 4-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Class 2 rating 4 – 1 and 2 family 3 – commercial and industrial	July 1, 2023
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Community	Yes	Bronze	September 21, 2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

4.3.7 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 4-8 summarizes the adaptive capacity for each identified hazard of concern and the City’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 4-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

4.4 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 4-1 is responsible for maintaining this information.

4.4.1 NFIP Statistics

Table 4-9 summarizes the NFIP policy and claim statistics for Clifton.

4.4.2 Flood Vulnerability Summary

Table 4-10 provides a summary of the NFIP program in Clifton.

Table 4-9. Clifton NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**45**
Total Loss Payments	**$2,964,266**
# Repetitive Loss Properties (NFIP definition)	**11**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**2**
# Severe Repetitive Loss Properties (FMA definition)	**3**

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

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

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

Source: NJOEM 2024

Table 4-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Mixed use properties in low-lying areas and adjacent to open waters, large scale conveyance and County stormwater infrastructure
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	The City is aware of approximately 5 properties that have engaged New Jersey Department of Environmental Protection Blue Acres to explore mitigation options
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Unknown
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
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	

NFIP Topic	Comments
What local department is responsible for floodplain management?	Construction 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?	No
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)	Permit reviews, inspections
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Have not experienced this situation before.
What are the barriers to running an effective NFIP program in the community, if any?	N/A
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)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	239-26
What is the date that your flood damage prevention ordinance was last amended?	2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, Stormwater Ordinance adopted in accordance with New Jersey Department of Environmental Protection General Permit.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes

4.5 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 4-11 through Table 4-13.

Table 4-11. 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
2020				
Total Permits	8	3	0	11
Permits within SFHA	N/A	N/A	N/A	N/A
2021				
Total Permits	4	2	2	8
Permits within SFHA	N/A	N/A	N/A	N/A
2022				
Total Permits	11	2	1	14
Permits within SFHA	N/A	N/A	N/A	N/A
2023				
Total Permits	2	-	6	8
Permits within SFHA	N/A	N/A	N/A	N/A

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

Table 4-12. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Clifton Station Apts	Res	300	631 Clifton Ave		Construction in progress
Redev of 340 Kingsland	Comm	2 buildings	340 Kingsland		CACC BLDG + Garage-in progress
Med School Parking Garage	Comm	??	340 Kingsland		Complete
Quest Diagnostics	Comm	New Bldg	1153 Bloomfield Ave		Complete
Clifton Main Mews II	Res	95	1000 Main Ave		Complete

** Only location-specific hazard zones or vulnerabilities identified.*

Table 4-13. 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
None reported.					

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

4.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the City are shown in Figure 4-1 through Figure 4-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Clifton has significant exposure. The maps show the location of potential new development, where available.

Figure 4-1. Clifton Hazard Area Extent and Location Map 1

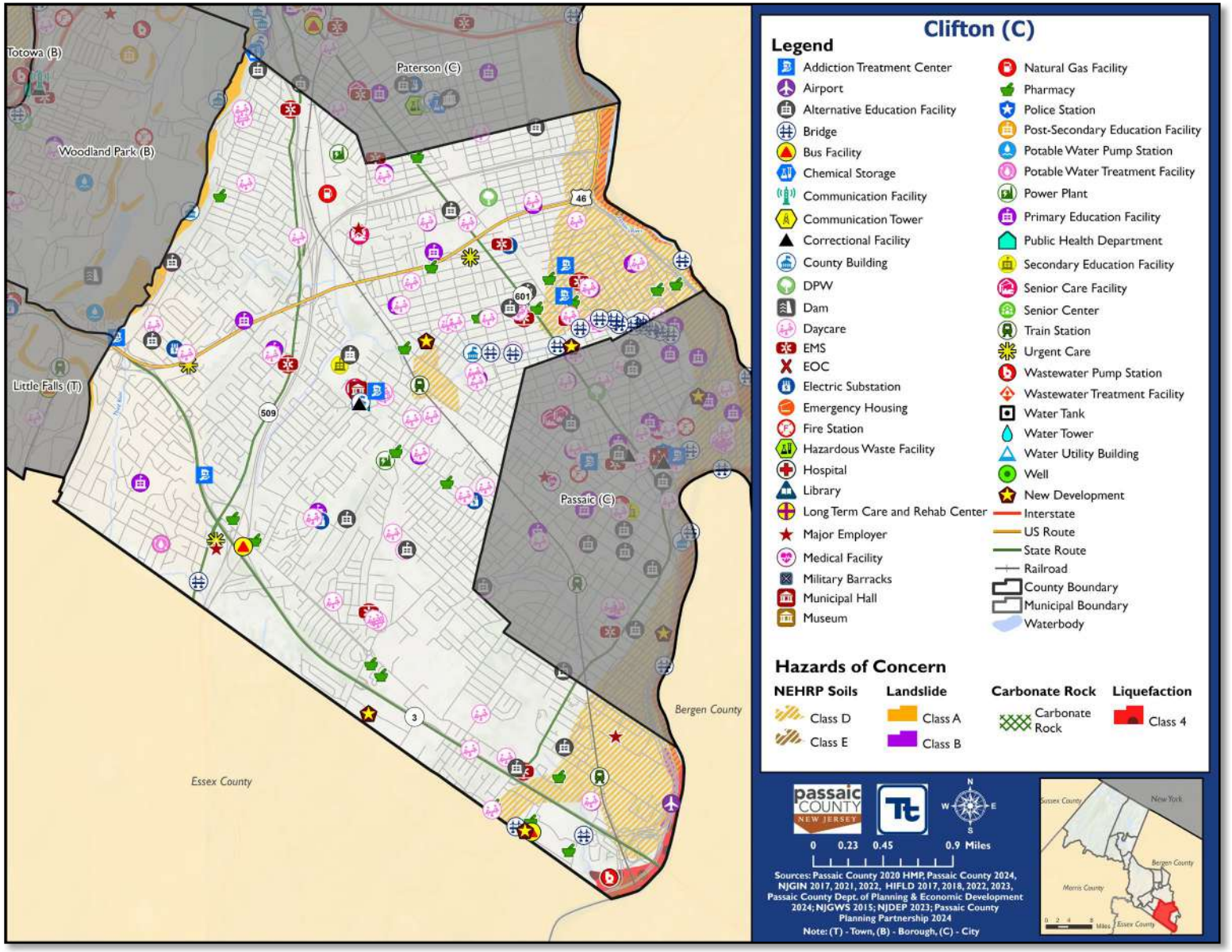
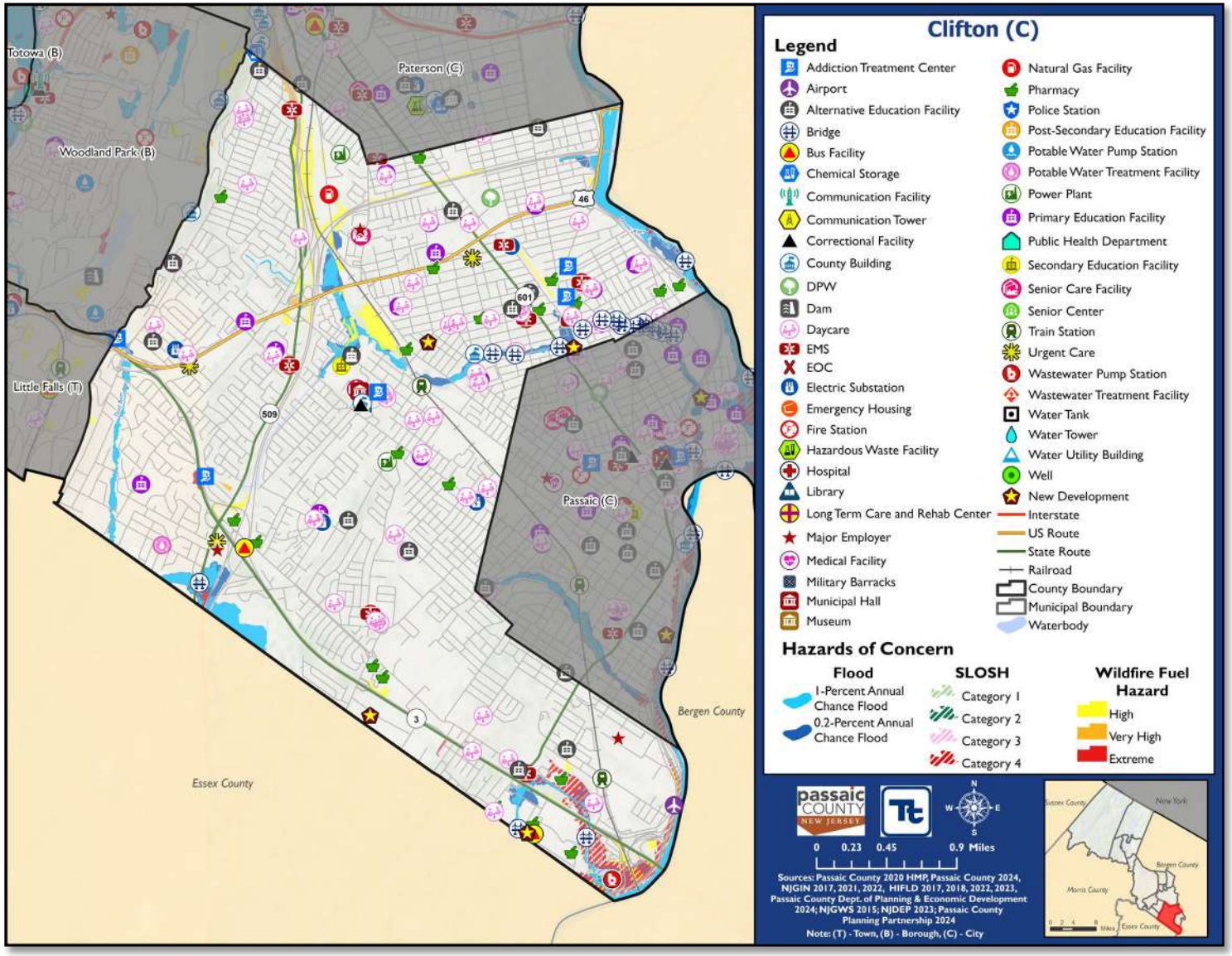


Figure 4-2. Clifton Hazard Area Extent and Location Map 2



4.6.2 Hazard Event History

The history of natural and non-natural hazard events in Clifton is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 4-14 provides details on loss and damage in Clifton during hazard events since the last hazard mitigation plan update.

Table 4-14. Hazard Event History in Clifton

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Clifton
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	As of May 11, 2023, Clifton accounted for 27,864 positive cases and 5,113 probable cases totaling 32,977 cases for the City and 389 deaths (State of NJ, 2024)
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	17 residents were displaced and required temporary housing. Resulting in $12,000 spent on relocating these individuals.
December 17-23,2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Road Closures: Route 3 by GSP Paulison Ave and Clifton Ave to Fornelius Third River Flooding Route 46 under Main Ave flooding

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

4.6.3 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 Clifton.

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. Clifton 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 City indicated the following:

- The City identified that runoff from the Passaic River as a significant weakness in the event of a dam failure. As a result, the City increased the hazard ranking from Low to Medium.
- The City identified shelters as a strength for extreme temperature events. However, a significant weakness is the lack of sufficient cots and the absence of a designated warming or cooling center.
- For flooding events, the City identified several weaknesses, including insufficient manpower and resources, specifically noting that 21 schools lack generators. Additionally, schools such as School 12, 16, and 17, as well as the Sylvan Transportation Depot, are prone to flooding. An obstacle during these events is the presence of clogged sewer drains, low-lying areas, and densely populated areas. As a result, the City increased the hazard ranking from Medium to High.
- For geological hazards, the City identified elevated areas as a strength. However, low-lying areas prone to flooding were noted as a weakness. Additionally, the lack of sufficient funds to address or mitigate these geological challenges was identified as a significant obstacle.
- During severe weather events, the City identified the lack of generators in schools as a weakness. As a result, the City increased the hazard ranking from Medium to High.
- The City identified several significant weaknesses for severe winter weather: the lack of a designated shelter, cots, and necessary supplies. As a result, the City increased the hazard ranking from Medium to High.
- The City identified the limited areas with wildfire potential as a strength and agreed with the ranking for Wildfire as Low.

Table 4-15 shows Clifton's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 4-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

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 4-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 4-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600056	Bridge	Yes	Yes
1600057	Bridge	No	Yes
1600058	Bridge	No	Yes
1600059	Bridge	No	Yes
1600060	Bridge	No	Yes
1600062	Bridge	Yes	Yes
1600063	Bridge	No	Yes
1600064	Bridge	No	Yes
1600080	Bridge	Yes	Yes
1600081	Bridge	Yes	Yes
1600083	Bridge	Yes	Yes
0200-21E (I-7 "old");1600007	Bridge	Yes	Yes
Keystone Recovery Center, Inc. dba BlueCrest Recovery Center	Addiction Treatment Center	Yes	Yes
Passaic Valley Sewerage Pump Station	Wastewater Pump Station	Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

No high hazard dams are located in the City of Clifton.

4.6.4 Identified Issues

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

- The following areas within the City are prone to flooding and require mitigation*:
  - Third River
  - Senior Horizons 714 Clifton Avenue
  - Weasel Brook
  - 1000 Main Avenue
  - Route 3 near Garden State Parkway
  - Route 46 under Main Avenue
  - Station 1 relocation: Flooded during Hurricane Ida: it was mitigated but relocation is needed
- In 2022, the City of Clifton was directed by Passaic County to open a facility for unhoused individuals under the Code Blue initiative. Currently, the Clifton Recreation Center is being used for this purpose, which has resulted in the suspension of recreation programs previously available to Clifton residents. This

situation has created a need for an alternative facility to host the Code Blue program without disrupting the services provided by the Recreation Center.

- The City lacks warming and cooling centers, and the necessary supplies to equip them. Extreme temperature events, particularly cold weather events, warrant the establishment of appropriate facilities to fill this need.*
- Backup power sources are necessary to maintain critical services for critical facilities. Schools in the City provide immediate sheltering for students in the event of a hazard event. There are a total of 21 schools within the City that lack generators. Additionally, Fire Station 4 provides essential services post-disaster, and needs backup power.*
- Current emergency power for these critical facilities is limited and not enough to provide adequate power for sheltering and essential services. *
- Schools such as School 12, 16, and 17, as well as the Sylvan Transportation Depot, are prone to flooding. The presence of clogged sewer drains, low-lying areas, and densely populated regions exacerbates the flooding issues, leading to disruptions in education and transportation services. *
- The City has identified runoff from the Passaic River as a significant weakness in the event of a dam failure. This runoff can lead to severe flooding, causing extensive damage to infrastructure, homes, and critical facilities, and posing a significant risk to public safety. *
- The City has identified elevated areas as a strength in mitigating geological hazards. However, low-lying areas prone to flooding are a significant weakness. Additionally, the lack of sufficient funds to address or mitigate these geological challenges poses a substantial obstacle. *
- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The City has 11 repetitive loss, and 2 severe repetitive loss properties, but other properties may be impacted by flooding as well.
- The Passaic Valley Sewage Pump Station is located in the 1% annual chance flood area.

* This issue was identified as a specific area of concern based on resident response to the Passaic County Hazard Mitigation Strengths, Weaknesses, Obstacles, and Opportunities (SWOO) worksheet.

4.7 MITIGATION STRATEGY AND PRIORITIZATION

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

4.7.1 Past Mitigation Action Status

Table 4-17 indicates progress on the City's mitigation strategy identified in the 2020 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.

4.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 4-17, Clifton identified the following mitigation efforts completed since the last HMP:

- In, 2022 The City was informed by Passaic County to open for unhoused individuals (Code Blue). Currently, the City is utilizing the Clifton Recreation Center therefore cannot provide recreation programs previously offered to Clifton Residents. The City is looking to locate a facility to operate our Clifton Code Blue so it will no longer impact the Clifton Recreation Center. Passaic County has offset some of the cost of Code Blue.
- Botany Village Satellite office- Clifton Health Department and Clifton Police Department opened a joint satellite office in Botany Village in 2022, which was substantiated by the 2018 Community Health Assessment (CHA). This office provides much needed outreach/services to those in 07011 which residents have limited access to transportation and health care. The City pays rent on a monthly basis. Since the inception of this satellite office, the Quality of Life and Clifton Police Department complaints have decreased 63.5 percent in this neighborhood.
- The City has worked with NJDEP to site a Temporary Debris Management Area (TDMA) to temporarily store debris which has been collected from the right of way after a debris generating event, like a flood or severe weather event. Use of a TDMA facilitates clearing of roads by providing an area where collected debris can be consolidated, sorted and processed prior to transportation to a solid waste or recycling facility.

Table 4-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Clifton-001	Critical Facility – Passaic Valley Sewage Pump Station	Coastal Storm, Flood, Severe Weather	Construction Official, City Office of Emergency Management	**Problem**: The Passaic Valley Sewage Pump Station is located in the 1% annual chance flood area. Existing Coastal Storm, Flood, Severe Weather 2, 4, 6 Construction Official, City OEM City Budget Increase awareness, provide education to critical facility owner/operator <$10,000 Within 1 year High EAP PI, PP **Solution**: The City does not own this facility. They will perform outreach to the Passaic Valley Sewage Commission informing them the facility is located in the floodplain and provide mitigation options to protect from flood damage.	1.In progress 2.The City of Clifton's Office of Emergency Management continues to provide outreach to the facility and provide mitigation alternatives for their facility.	1. Include 2. 3.

Project Number	Project Name	Hazards 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.
2020-Clifton-002	Backup Power for Fire Department and High School	Coastal Storm, Dam Failure, Disease Outbreak, Earthquake, Extreme Temperature, Flood, Geological, Severe Weather, Severe Winter Weather, Wildfire	City Engineer, fire Department, Administration	**Problem**: Station 4 (fire department) and Clifton High School are considered critical facilities that provide essential services to the community. In the event of a power outage, the facilities can operate properly. **Solution**: Purchase and install backup power at Station 4 and Clifton High School.	1.In progress 2. Project is in conceptual design, City is trying to identify load and specifications needed for both facilities. Lack of funding and limited capacity has prevented implementation.	1. Include 2. 3.
2020-Clifton-003	Outreach to Floodprone Properties	Flood	Construction Official, City Office of Emergency Management	**Problem**: There are seven repetitive loss properties in the City and two severe repetitive loss properties. **Solution**: The City will conduct an outreach to the repetitive and severe repetitive loss properties to inform them different mitigation options (e.g., elevate utilities, remove items from basement, etc.).	1. Ongoing capability 2. The City continued to conduct outreach to SRL and RL property owners to inform them of viable mitigation alternatives and available funding.	1. Include 2. 3.

4.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Clifton 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 Clifton 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 City priorities.

Table 4-18 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 4-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 4-18. 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	
Drought										
Extreme Temperature		X								X
Flood		X	X		X	X	X	X	X	X
Geological Hazards		X	X		X	X		X	X	
Severe Weather		X	X		X	X	X	X	X	X
Severe Winter Weather		X								X
Wildfire										

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 4-19. 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**	
Action 2025-CliftonC-001	Mitigating Flood Prone Areas	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
Action 2025-CliftonC-002	Code Blue Shelter Relocation	1	0	1	1	1	1	0	1	1	1	1	1	1	1	**12**	High
Action 2025-CliftonC-003	Sheltering Needs	1	0	1	1	1	0	0	1	1	1	1	1	1	0	**10**	Medium
Action 2025-CliftonC-004	Generators for Schools	1	0	1	1	1	0	0	1	1	1	1	1	1	0	**10**	Medium
Action 2025-CliftonC-005	Flood Prone Properties	1	1	1	1	1	0	1	1	1	0	1	1	1	0	**11**	High
Action 2025-CliftonC-006	Passaic River Runoff	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-CliftonC-007	Low-Lying Flood Prone Areas	1	1	1	1	1	-1	1	1	1	0	1	1	1	0	**11**	High
Action 2025-CliftonC-008	Repetitive Loss Properties Outreach	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
Action 2025-CliftonC-009	Flood Outreach – Passaic Valley Sewage Pump Station	1	1	1	1	1	1	0	0	1	1	1	1	1	0	**11**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-CliftonC-001. Mitigating Flood Prone Areas

Lead Agency:	Engineering Department
Supporting Agencies:	Planning Division
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The following areas within the City are prone to flooding and require mitigation: • Third River • Senior Horizons 714 Clifton Avenue • Weasel Brook • 1000 Main Avenue • Route 3 near Garden State Parkway • Route 46 under Main Avenue • Station 1 relocation: Flooded during Hurricane Ida: it was mitigated but relocation is needed
Description of the Solution:	To address the flooding issues in the City of Clifton, a comprehensive project scoping initiative will be undertaken to explore and evaluate various flood mitigation alternatives. This initiative will focus on the following areas that are prone to flooding and require mitigation: • Third River • Senior Horizons at 714 Clifton Avenue • Weasel Brook • 1000 Main Avenue • Route 3 near Garden State Parkway • Route 46 under Main Avenue • Station 1 relocation The project will involve assessing the feasibility of different flood mitigation strategies, including green infrastructure, streambank management, and other nature-based solutions, to enhance the resilience of these areas to flooding.
Estimated Cost:	High
Potential Funding Sources:	HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6,7
Benefits:	This action will develop a sustainable and effective plan that minimizes flood risks, protects properties and infrastructure, and improves the overall safety and quality of life for residents.
Impact on Socially Vulnerable Populations:	Flood mitigation efforts can significantly reduce the disproportionate impact of flooding on socially vulnerable populations.
Impact on Future Development:	Green infrastructure, such as permeable pavements and rain gardens, can also improve water quality and reduce stormwater runoff, supporting sustainable urban growth.
Impact on Critical Facilities/Lifelines:	Protecting critical facilities and lifelines, such as hospitals, emergency services, and transportation networks, is crucial during flood events.
Impact on Capabilities:	Flood mitigation projects can strengthen local capabilities by enhancing knowledge, skills, and expertise in disaster management.
Climate Change Considerations:	Climate change is leading to more extreme weather patterns, including heavier and more prolonged rainfall.
Mitigation Category	Structure and Infrastructure Project, Natural Systems Protection
CRS Category	Preventative Measures, Property Protection, Public Information
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Relocate facilities	
	Build levee around facilities/areas	No space for full levee system

Action 2025-CliftonC-002. Code Blue Shelter Relocation

Lead Agency:	Department of Health and Human Services
Supporting Agencies:	Passaic County, Department of Recreation
Hazard(s) of Concern:	Extreme Temperature, Severe Winter Weather
Description of the Problem:	In 2022, the City of Clifton was directed by Passaic County to open a facility for unhoused individuals under the Code Blue initiative. Currently, the Clifton Recreation Center is being used for this purpose, which has resulted in the suspension of recreation programs previously available to Clifton residents. This situation has created a need for an alternative facility to host the Code Blue program without disrupting the services provided by the Recreation Center.
Description of the Solution:	The City of Clifton is seeking to identify and secure a new facility to operate the Code Blue program. This will allow the Clifton Recreation Center to resume its regular recreation programs for residents. Passaic County has agreed to offset some of the costs associated with the Code Blue initiative, which will aid in the transition to a new location.
Estimated Cost:	Medium
Potential Funding Sources:	Passaic County, City budget
Implementation Timeline:	Within 5 Years
Goals Met:	3
Benefits:	Securing a new facility for the Code Blue program will restore the Clifton Recreation Center's ability to offer recreation programs, benefiting the entire community by providing access to essential recreational activities.
Impact on Socially Vulnerable Populations:	Relocating the Code Blue program to a dedicated facility will ensure that unhoused individuals receive the necessary shelter and services without disrupting other community services. This targeted support will improve the well-being of socially vulnerable populations by providing a stable and safe environment.
Impact on Future Development:	By freeing up the Clifton Recreation Center, the City can continue to develop and expand recreational programs, which can attract new residents and businesses, fostering community growth and development
Impact on Critical Facilities/Lifelines:	The new facility will enhance the City's emergency response capabilities by providing a dedicated space for Code Blue operations. This will reduce the strain on other critical facilities and lifelines, ensuring they remain available for their intended purposes.
Impact on Capabilities:	The establishment of a dedicated Code Blue facility will enhance the City's overall capabilities in managing emergency shelter operations. This will allow for more efficient and effective responses to future emergencies, improving the city's resilience.
Climate Change Considerations:	A dedicated facility for Code Blue operations can be designed with climate resilience in mind, incorporating sustainable building practices and energy-efficient systems. This will help mitigate the impacts of climate change and ensure the facility remains operational during extreme weather events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Emergency Services
Priority	High

Alternatives:	Action	Evaluation
	No Action	Problem continues.
	Purchase multi-use trailers	Require deployment, limited space
	Build separate facilities	Costly, need to be staffed

Action 2025-CliftonC-003. Sheltering Needs

Lead Agency:	Emergency Management
Supporting Agencies:	Community Development, Health and Human Services
Hazard(s) of Concern:	Extreme Temperature, Severe Winter Weather
Description of the Problem:	The City lacks warming and cooling centers, and the necessary supplies to equip them. Extreme temperature events, particularly cold weather events, warrant the establishment of appropriate facilities to fill this need.
Description of the Solution:	To address these issues, the City will establish a designated warming and cooling center equipped with sufficient cots and necessary supplies. This center will serve as a refuge during extreme temperature events and severe winter weather. The project will involve retrofitting an existing community facility to serve as the warming and cooling center, ensuring it is accessible, adequately heated/cooled, and stocked with essential supplies
Estimated Cost:	Medium
Potential Funding Sources:	HMGP, City budget
Implementation Timeline:	1-5 years
Goals Met:	1,5,7
Benefits:	Retrofitting emergency facilities for sheltering established for regional use.
Impact on Socially Vulnerable Populations:	Providing a centralized location for sheltering allows an opportunity for those with limited access to obtain needed services.
Impact on Future Development:	By providing additional resources for sheltering, residents will feel more secure in their choice to establish life and property within the community.
Impact on Critical Facilities/Lifelines:	Retrofitting facilities ensures that all members of the community can receive adequate care in the event of a personal or community-wide emergency.
Impact on Capabilities:	Remodeling facilities to provide emergency response equipment will increase the ability of the community to assist outside agencies and respond internally to large-scale casualty events.
Climate Change Considerations:	Climate change is leading to more frequent and intense extreme weather events, including heat waves and severe winter storms. These events can significantly impact the need for warming and cooling centers, making it crucial to plan for future climate conditions.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Emergency Services
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Purchase multi-use trailers	Require deployment, limited space
Build separate facilities	Costly, need to be staffed

Action 2025-CliftonC-004. Generators for Schools, Fire Department

Lead Agency:	City Engineering
Supporting Agencies:	Board of Education, Administration, Fire Department
Hazard(s) of Concern:	Extreme Temperatures, Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. Schools in the City provide immediate sheltering for students in the event of a hazard event. There are a total of 21 schools within the City that lack generators. Additionally, Fire Station 4 provides essential services post-disaster, and needs backup power. Current emergency power for these critical facilities is limited and not enough to provide adequate power for sheltering and essential services.
Description of the Solution:	The Engineer will work with the Board of Education, Administration and Fire Department to research what size generators are needed to supply backup power to these critical facilities. The City will then provide guidance and support during the purchase and installation of the selected generators and necessary electrical components to supply backup power to the schools and Fire Station 4.
Estimated Cost:	High
Potential Funding Sources:	HMGP, City budget
Implementation Timeline:	1-5 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	Structure and Infrastructure Projects
CRS Category	Emergency Services
Priority	Medium

Alternatives:

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

Action 2025-CliftonC-005. Flood Prone Properties

Lead Agency:	City Engineering
Supporting Agencies:	Department of Public Works – Sewer Division
Hazard(s) of Concern:	Flood
Description of the Problem:	Schools such as School 12, 16, and 17, as well as the Sylvan Transportation Depot, are prone to flooding. The presence of clogged sewer drains, low-lying areas, and densely populated regions exacerbates the flooding issues, leading to disruptions in education and transportation services.
Description of the Solution:	City Engineering with assist from the Sewer Division, will upgrade the drainage systems around these schools and the transportation depot. This includes cleaning and maintaining sewer drains, installing permeable pavements, and creating retention basins to manage stormwater runoff. Additionally, implementing green infrastructure solutions, such as rain gardens and bioswales, will help mitigate flooding.
Estimated Cost:	High
Potential Funding Sources:	FMA, HMGP, City Budget
Implementation Timeline:	1-5 years
Goals Met:	2,5,6
Benefits:	Ensures continuity of operations of School 12, 16, 17, and the Sylvan Transportation Depot.
Impact on Socially Vulnerable Populations:	Upgrading drainage systems and implementing green infrastructure will protect socially vulnerable populations, and ensures they have safe access to education and transportation during flood events.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	By protecting schools and transportation depots, the project ensures that critical facilities and lifelines remain operational during flood event.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity due to climate change.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Emergency Services, Property Protection
Priority	High

Alternatives:

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

Action 2025-CliftonC-006. Passaic River Runoff

Lead Agency:	City Engineering
Supporting Agencies:	Planning
Hazard(s) of Concern:	Dam Failure, Flood, Severe Weather
Description of the Problem:	The City has identified runoff from the Passaic River as a significant weakness in the event of a dam failure. This runoff can lead to severe flooding, causing extensive damage to infrastructure, homes, and critical facilities, and posing a significant risk to public safety.
Description of the Solution:	City Engineering will conduct a flood study and begin working to identify potential mitigation actions to reduce the occurrence of flooding and flood risk when floods does occur from the Passaic River. Once identified, cost-effective actions will be carried out.
Estimated Cost:	Medium
Potential Funding Sources:	HMGP, FMA, City Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,7,8,9
Benefits:	Flood risk will be reduced in hazard prone areas.
Impact on Socially Vulnerable Populations:	If cost-effective mitigation actions are identified, they may be implemented in flood prone areas that could reduce their overall risk to loss of life and property.
Impact on Future Development:	Improving flood resilience in these areas will make them more attractive for future residential and commercial development.
Impact on Critical Facilities/Lifelines:	By protecting critical facilities and lifelines, such as hospitals and emergency services, the project ensures they remain operational during flood events.
Impact on Capabilities:	The project will strengthen local capabilities by improving disaster management knowledge, skills, and expertise.
Climate Change Considerations:	The proposed solution includes climate change considerations, such as using green infrastructure that can adapt to changing weather patterns and increased rainfall. This ensures the project remains effective in mitigating flood risks in the future.
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Projects
CRS Category	Preventative Measures, Property Protection, Natural Resource Protection, Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Construction of large retention ponds	High cost, environmental impact
Installation of Flood barriers and levees	Potential for failure, and expensive

Action 2025-CliftonC-007. Low-Lying Flood Prone Areas

Lead Agency:	City Engineering
Supporting Agencies:	Planning
Hazard(s) of Concern:	Geological Hazards
Description of the Problem:	The City has identified elevated areas as a strength in mitigating geological hazards. However, low-lying areas prone to flooding are a significant weakness. Additionally, the lack of sufficient funds to address or mitigate these geological challenges poses a substantial obstacle.
Description of the Solution:	The proposed solution involves implementing a comprehensive flood management system to mitigate the impact of flooding in low-lying areas. This includes upgrading existing drainage systems, constructing retention basins, and enhancing green infrastructure such as wetlands and riparian buffers to absorb and slow down runoff. Additionally, seeking diverse funding sources to overcome financial constraints will be crucial.
Estimated Cost:	High
Potential Funding Sources:	HMGP, FMA, City Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,7,8,9
Benefits:	Flood risk will be reduced in hazard prone areas.
Impact on Socially Vulnerable Populations:	If cost-effective mitigation actions are identified, they may be implemented in flood prone areas that could reduce their overall risk to loss of life and property.
Impact on Future Development:	Improving flood resilience in these areas will make them more attractive for future residential and commercial development.
Impact on Critical Facilities/Lifelines:	By protecting critical facilities and lifelines, such as hospitals and emergency services, the project ensures they remain operational during flood events.
Impact on Capabilities:	The project will strengthen local capabilities by improving disaster management knowledge, skills, and expertise.
Climate Change Considerations:	The proposed solution includes climate change considerations, such as using green infrastructure that can adapt to changing weather patterns and increased rainfall. This ensures the project remains effective in mitigating flood risks in the future.
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Projects
CRS Category	Preventative Measures, Property Protection, Natural Resource Protection, Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Construction of large retention ponds	High cost, environmental impact
Installation of Flood barriers and levees	Potential for failure, and expensive

Action 2025-CliftonC-008. Repetitive Loss Properties Outreach

Lead Agency:	Construction Official
Supporting Agencies:	City OEM, property owners
Hazard(s) of Concern:	Flood, Severe Weather
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 City has 11 repetitive loss, and 2 severe repetitive loss properties, but other properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 13 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Medium
Potential Funding Sources:	FEMA FMA, HMGP, match from property owners
Implementation Timeline:	1-5 years
Goals Met:	1,2,7,8,9
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2025-CliftonC-009. Flood Outreach – Passaic Valley Sewage Pump Station

Lead Agency:	Construction Official
Supporting Agencies:	City OEM
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The Passaic Valley Sewage Pump Station is located in the 1% annual chance flood area.
Description of the Solution:	The City does not own this facility. They will perform outreach to the Passaic Valley Sewage Commission informing them the facility is located in the floodplain and provide mitigation options to protect from flood damage.
Estimated Cost:	Low
Potential Funding Sources:	City Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,7,8,9
Benefits:	This action will improve the current outreach program in the City by including discussions on disaster preparedness and hazard mitigation to the facility, which will contribute to the resilience of both the City and pump station.
Impact on Socially Vulnerable Populations:	Not Applicable
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events.
Impact on Critical Facilities/Lifelines:	Passaic Valley Sewage would be more informed on how to prepare for emergency events and mitigate the risks of potential hazards.
Impact on Capabilities:	This action would build upon the City's already existing 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 the facility of how to reduce risk from hazards and how climate change may exacerbate those risks.
Mitigation Category	Education and Awareness Program
CRS Category	Public Information
Priority	High

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 City
Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving guidance

5. BOROUGH OF HALEDON

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

5.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Haledon identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management represented the community on the Passaic 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 5-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 5-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Carlos Aymat, Coordinator, Office of Emergency Management Address: 510 Belmont Avenue, Haledon, NJ 07508 Phone Number: 201-419-4139 Email: caymat@haledonboronj.org	Name/Title: George Guzman, Jr, Deputy Office of Emergency Management Coordinator Address: 510 Belmont Avenue, Haledon, NJ 07508 Phone Number: 862-262-2832 Email: gguzman@haledonpd.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: James Booth, Construction Official, Haledon Building Department Address: 510 Belmont Avenue, Haledon, NJ 07508 Phone Number: 973-886-2650 Email: jbooth@haledonboronj.com	
Additional Contributors	
Name/Title: George Guzman, Jr, Deputy Office of Emergency Management Coordinator Method of Participation: Provided updated information on capability assessment, hazard event history, NFIP, building permits and development and mitigation action status.	
Name/Title: Carlos Aymat, Coordinator, Office of Emergency Management Method of Participation: Participated in the planning process.	
Name/Title: James Booth, Construction Official, Haledon Building Department Method of Participation: Participated in the planning process.	

5.2 COMMUNITY PROFILE

5.2.1 Brief History

The Borough of Haledon was incorporated in 1908, having been the Oldham district of the former Passaic County municipality of Manchester Township. Home rule secession of municipalities in New Jersey was common and other examples include nearby Woodland Park (formerly West Paterson) and Elmwood Park, both of which were once part of Paterson.

5.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 1.156 square miles, of which 1.155 square miles is land and 0.001 square miles is water. The Borough borders the City of Wayne to the west, Borough of Totowa to the south, City of Paterson and Borough of Prospect Park to the east, and the Borough of North Haledon to the north.

5.2.3 Governing Body Format

The Borough is governed by the Borough form of government, with a mayor and six-member council.

5.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Haledon was 9,052, an 8.5 percent increase 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 2020 U.S. Census indicates that 6.2 percent of the population is 5 years of age or younger, 16.4 percent is 65 years of age or older, 10.4 percent is non-English speaking, 8.5 percent is below the poverty threshold, and 11.5 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

5.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Haledon 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 Haledon to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

5.3.1 Planning and Regulatory Capability and Integration

Table 5-2 summarizes the planning and regulatory tools that are available to Haledon.

Table 5-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.); Chapter 147 Construction Codes, Uniform	State and Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? Requires all regulated building improvements and new development to meet the minimum standards for safety from fire, flood, and other natural and manmade disasters. Chapter 147: There is hereby established in the Borough of Haledon a State Uniform Construction Code enforcing agency to be known as the "Haledon Enforcing Agency," consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.				

	Jurisdiction has this?	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
Zoning/Land Use Code	Yes	Chapter 405 Zoning, 1984	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? The purposes of this chapter are: A. To guide and regulate the orderly growth and development of the Borough. B. To protect the established character and the social and economic well-being of both private and public property. C. To promote, in the public interest, the utilization of land for the purpose for which it is most appropriate. D. To secure safety from fire, panic, and other dangers and to provide adequate light, air and convenience of access. E. To prevent overcrowding of land or buildings and to avoid undue concentration of population. F. To lessen and, where possible, to prevent traffic congestion on public streets and highways. G. To conserve the value of the buildings and to enhance the value of land throughout the Borough.				
Subdivision Code	Yes	Chapter 405 - Zoning	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Any subdivision proposals must be submitted to the Planning Board for their review and approval.				
Site Plan Code	Yes	Chapter 332 – Site Plan Review, 1989	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Provides rules, regulations and standards to guide the development of land sites in the Borough of Haledon in order to protect the public health, safety, convenience and general welfare of the municipality.				
Stormwater Management Code	Yes	Chapter 345 – Stormwater Control, 2006 Chapter 346 – Stormwater Quality, 2010	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 345 - Stormwater Control - Adopted by Bourgh Council on 4/19/2006 - Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards. Development shall incorporate a maintenance plan for the stormwater management measures. Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department Landscape Project. To the maximum extent practicable, the standards shall be met by incorporating nonstructural stormwater management strategies into the design. • Chapter 346 - Stormwater Quality - adopted by the Borough Council on 9/6/2010 – prohibits the spilling, dumping, or disposal of materials, other than stormwater, to the municipal separate storm sewer system operated by the Borough. It also prohibits the spilling, dumping, or disposal of materials other than stormwater in such a manner as to cause the discharge of pollutants to the municipal separate storm sewer system.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
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
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				

	Jurisdiction has this?	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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

Growth Management	Yes	Chapter 405 Zoning Code	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The zoning code incorporates growth management by identifying areas where more intense development is discouraged and encouraged based on existing infrastructure and community characteristics.				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance(s)	Yes	Chapter 340 Soil Removal; Chapter 380 Trees	Local	Planning Board; Superintendent of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 340: The purpose of this chapter is to regulate and control the relocation, filling, excavation and removal of soil in the Borough of Haledon. The Mayor and Council hereby finds and determines that the unregulated and uncontrolled relocation, excavation and removal of soil is detrimental to the public safety, health and general welfare and proper development of the Borough of Haledon and constitutes a deterrent to the general purpose of the municipal planning of the Borough. The lack of control and regulation would result in serious and irreparable damage to the public welfare by reason of soil erosion; inadequate and improper surface water drainage; the impairment of the fertility of the soil; the removal of lateral support of abutting streets, lands and premises; creation of dangerous depressions or pits; the deterioration of property values; and the rendering of land unfit or unsuitable to its most appropriate uses. Chapter 380: The chapter states that tree planting and protection will lead to better erosion control, drainage, and neighborhood climate control (e.g., shade).				
Flood Damage Prevention Ordinance	Yes	Chapter 191 – Floodplain Management	Local	Floodplain Administrator
How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this chapter 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, electricity, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; G. 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. The ordinance does not follow the latest model code coordinated ordinance from NJDEP and will require update.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Borough Ordinance 346	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Municipal Separate Storm Sewer System (MS4) – Department of Public Works is responsible for maintaining.				

	Jurisdiction has this?	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/Master Plan	Yes	2020 Master Plan Reexamination	Local	Borough Clerk
How has or will this be integrated with the HMP and how does this reduce risk? The Master Plan sets goals for long term development within the Borough.				
Capital Improvement Plan	Yes	2020 Maser Plan Reexamination	Local	Administrator
How has or will this be integrated with the HMP and how does this reduce risk? Part of the annual budget for the Borough. The 2019 budget did not contain capital improvement funding but it did support department and staff that implement plans and mitigation actions.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	Yes	Municipal Stormwater Management Plan, 2023	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? The goals of this plan is to reduce flood damage, including damage to life and property; minimize stormwater runoff from new development; reduce soil erosion from any development or construction project; assure the adequacy of existing bridges, culverts and other in stream structures; maintain groundwater recharge; maintain the integrity of stream channels for their biological functions, as well as drainage; minimize pollutants in stormwater runoff from new and existing development; protect public safety through the proper design and operation of stormwater basins. This plan refers to the Master Plan and indicates that the Borough will review the Master Plan and ordinances to modify certain sections to incorporate nonstructural stormwater management strategies.				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Stormwater Pollution Prevention Plan, 2023	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? The Plan outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Emergency Operations Plan	Local	Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? The Emergency Operations Plan sets procedures for emergency response during disaster events.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

5.3.2 Development and Permitting Capability

Table 5-3 summarizes the capabilities of Haledon to oversee and track development.

Table 5-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Construction Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Special Flood Hazard Area
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No	-
Describe the level of buildout in your jurisdiction.	N/A	Borough is fully developed.

5.3.3 Administrative and Technical Capability

Table 5-4 summarizes potential staff and personnel resources available to Haledon and their current responsibilities that contribute to hazard mitigation.

Table 5-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Planning/Zoning Board
Zoning Board of Adjustment	Yes	Planning/Zoning Board
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Use reverse 911 (Nixle), social media, and municipal website
Public Works/Highway Department	Yes	Public Works and Recycling – maintains local roads, parks, rights-of-way, and water lines
Construction/Building/Code Enforcement Department	Yes	Construction Department
Emergency Management/Public Safety Department	Yes	The Borough of Haledon Office of Emergency Management (OEM) works to mitigate, and plan and prepare for emergencies; educate the public about preparedness, coordinate emergency response and recovery efforts, collect and disseminate critical information, and seek funding opportunities in support of the overall preparedness of the Borough of Haledon.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Public Works and Recycling – maintains local roads, parks, rights-of-way, and water lines
Mutual aid agreements	Yes	County and surrounding municipalities
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	Yes	Manchester Utilities Authority (MUA) serves Haledon as well as portions of North Haledon and smaller portions of neighboring towns in Passaic and Bergen counties. Water sold to customers is purchased from Passaic Valley Water Commission.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering
Planners or engineers with an understanding of natural hazards	Yes	Engineering
Staff with expertise or training in benefit/cost analysis	Yes	Engineering

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
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	Yes	Borough Engineer
Surveyors	Yes	-
Emergency manager	Yes	Office of Emergency Management
Grant writers	Yes	*Millennium Strategies*
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

5.3.4 Fiscal Capability

Table 5-5 summarizes financial resources available to Haledon.

Table 5-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	No
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	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	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

5.3.5 Education and Outreach Capability

Table 5-6 summarizes the education and outreach resources available to Haledon.

Table 5-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Public Information Officer for the Police Dept.; for municipal matters, it depends on the type of incident
Personnel skilled or trained in website development	Yes	Contracted out
Hazard mitigation information available on your website	Yes	Information is provided on limiting runoff into stormwater
Social media for hazard mitigation education and outreach	Yes	Nixle and Municipal Website
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The Office of Emergency Management has set up an Emergency Alert System through NIXLE. This Emergency Alert System will advise residents by text message and /or email of any emergency situations in the Borough of Haledon. The Borough also has social media and a municipal website used to relay emergency messages to Borough residents.
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	Municipal Website and Newsletter

5.3.6 Community Classifications

Table 5-7 summarizes classifications for community programs available to Haledon.

Table 5-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	September 16, 2013
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	5	June 30, 2014
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Not Classified	May 6, 2009
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

5.3.7 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 5-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 5-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

5.4 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 5-1 is responsible for maintaining this information.

5.4.1 NFIP Statistics

Table 5-9 summarizes the NFIP policy and claim statistics for Haledon.

5.4.2 Flood Vulnerability Summary

Table 5-10 provides a summary of the NFIP program in Haledon.

Table 5-9. Haledon NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**2**
Total Loss Payments	**$7,119**
# Repetitive Loss Properties (NFIP definition)	**1**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**0**
# Severe Repetitive Loss Properties (FMA definition)	**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: NJOEM 2024

Table 5-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Church Street, between Falcon Drive and Haledon Avenue; Belmont Avenue, between Zabriskie Street and Cook Street; Cliff Street
Do you maintain a list of properties that have been damaged by flooding?	Generally, flood incidents are documented in the police department computer aided dispatch system.
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
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?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	Unknown
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Unknown

NFIP Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	Construction 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?	No
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?	Maybe
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	None
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	N/A
What are the barriers to running an effective NFIP program in the community, if any?	N/A
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)?	N/A
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 161 of the Haledon Municipal Code
What is the date that your flood damage prevention ordinance was last amended?	Ordinance 6-8-2023
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Does not meet currently but will once the Borough adopts the Code Coordinated Ordinance.
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?	No
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Maybe

5.5 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 5-11 through Table 5-13.

Table 5-11. 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
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

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

Table 5-12. Recent Major Development and Infrastructure from 2017 to Present

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

** Only location-specific hazard zones or vulnerabilities identified.*

Table 5-13. 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
None reported.					

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

5.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 5-1 through Figure 5-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Haledon has significant exposure. The maps show the location of potential new development, where available.

Figure 5-1. Haledon Hazard Area Extent and Location Map 1

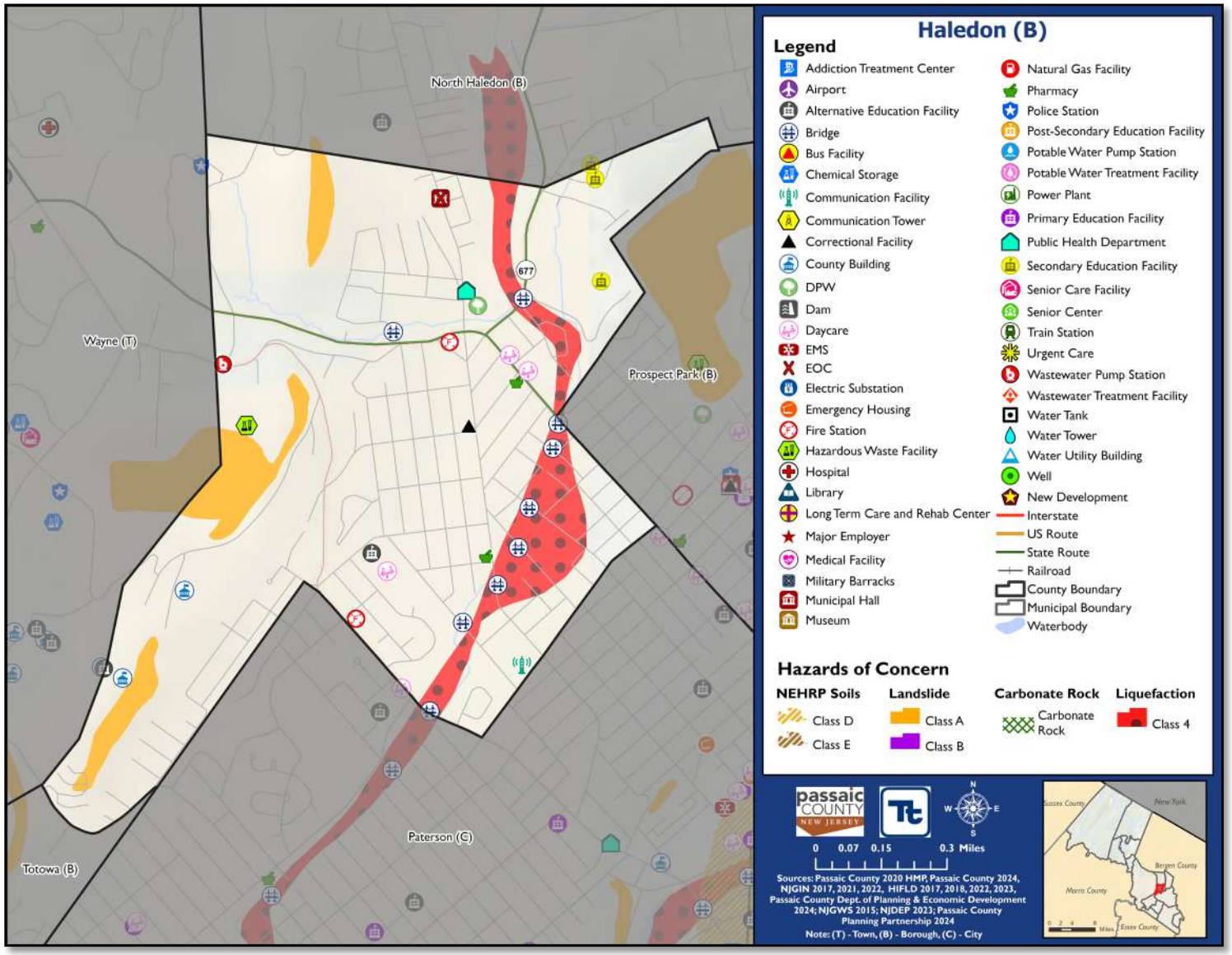
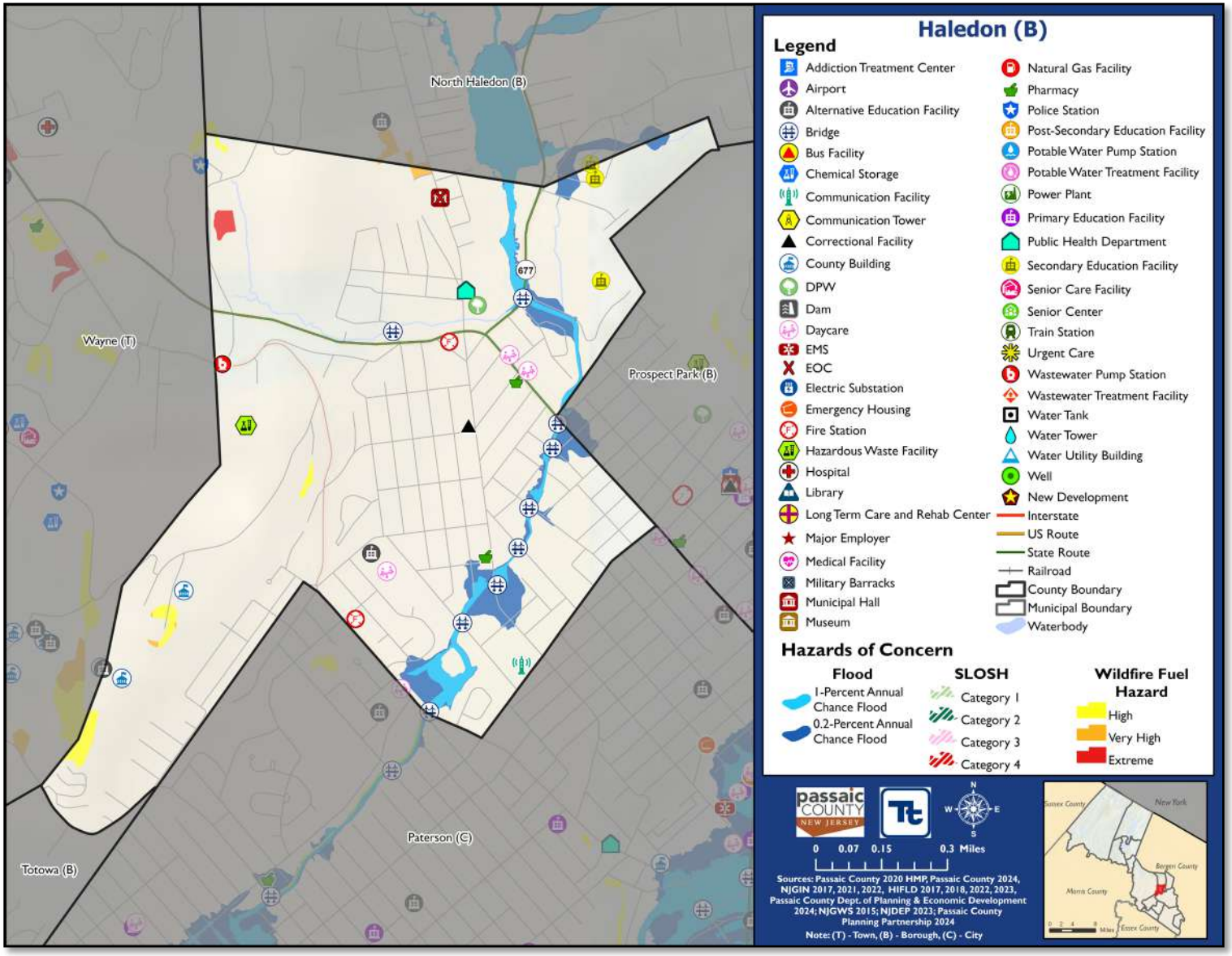


Figure 5-2. Haledon Hazard Area Extent and Location Map 2



5.6.2 Hazard Event History

The history of natural and non-natural hazard events in Haledon is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 5-14 provides details on loss and damage in Haledon during hazard events since the last hazard mitigation plan update.

Table 5-14. Hazard Event History in Haledon

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Haledon
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	-
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	-
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	-

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

5.6.3 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 Haledon.

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. Haledon 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 Borough indicated agreement with the individual rankings for the municipality.

Table 5-15 shows Haledon's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 5-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	Medium
Geological Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 5-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 5-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600118	Bridge	Yes	Yes
1600119	Bridge	Yes	Yes
1600120	Bridge	Yes	Yes
1600122	Bridge	Yes	Yes
1600123	Bridge	Yes	Yes
1600124	Bridge	Yes	Yes
1600125	Bridge	Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

No high hazard dams are located in the Borough of Haledon.

5.6.4 Identified Issues

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

- Three critical facilities in the Borough do not have backup power and cannot function properly during a power outage caused by hazard events.
- There is one repetitive loss property in the Borough. Frequent flooding has resulted in damages to this structure as documented by paid NFIP claims.
- The bridge on Church Street, Haledon Avenue, and North 16th Street are all flood prone areas in the Borough. These areas flood during periods of heavy rain. At this time, the Borough needs to understand the best solutions to alleviate this problem.
- Water quantity problems exist throughout the Borough and include flooding and stream bank erosion. The intersection of Cliff and Oxford Streets contain an undersized drainage system and the area routinely floods during heavy rain storms.
- The area of Cona Court, Bernard Ave, and North 12th and 13 Streets experience flooding during heavy rain events. On Cona Court, sewage backups occur as well. *
- The Borough's floodplain management program does not meet minimum requirements because it has not adopted the Code Coordinated Ordinance.
- The Borough does not have a Substantial Damage Response Plan.

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

5.7 MITIGATION STRATEGY AND PRIORITIZATION

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

5.7.1 Past Mitigation Action Status

Table 5-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

5.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 5-17, Haledon has not identified additional mitigation efforts completed since the last HMP.

Table 5-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Haledon-001	Backup Power for Critical Facilities	Coastal Storm, Dam Failure, Disease Outbreak, Earthquake, Extreme Temperature, Flood, Geological, Severe Weather, Severe Winter Weather, Wildfire	Borough Office of Emergency Management, Borough Engineer, Borough Fire Department	**Problem:** Three critical facilities in the Borough do not have backup power and cannot function properly during a power outage. **Solution:** Obtain backup power to support continuity of operations during hazard events. Critical facilities identified at this time: 1. Generator for Borough Town Hall 2. Haledon Fire Company 1 (Pompton Road) 3. Haledon Fire Company 2 (West Broadway).	1. In Progress 2. The Borough of Haledon is actively working on the specifications and sizing for backup generators to ensure reliable power for critical facilities identified. This initiative aims to enhance the resilience and preparedness of our community.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Haledon-002	Repetitive Loss Properties	Flood	Floodplain Administrator, Homeowner	**Problem:** There is one repetitive loss property in the Borough. Frequent flooding has resulted in damages to this structure as documented by paid NFIP claims. **Solution:** Conduct outreach to the property owner and provide information on mitigation alternatives including elevation, acquisition, and floodproofing the structure. If the homeowner chooses elevation or acquisition, the Borough will develop a FEMA grant application to obtain funding to implement the project.	1. In Progress 2. The Borough of Haledon continues to conduct outreach to promote mitigation alternatives funded through FEMA HMA programs such as elevation and acquisition to make sure homeowner is aware of viable options to mitigate their property.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Haledon-003	Update Flood Damage Prevention Ordinance	Flood	Borough Administration	**Problem:** The current flood damage prevention ordinance (Chapter 191) states that any new development or substantial improvements must be elevated at or above the base flood elevation. This does not meet the minimum requirement set by the State of New Jersey. **Solution:** Update the current flood damage prevention ordinance to require new construction and substantial improvements to be elevated at least one foot above the base flood elevation.	1. Completed. 2. N/A	1. Discontinue 2. Not Applicable 3. This action has been completed.

Project Number	Project Name	Hazards 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.
2020-Haledon-004	Feasibility Study in the Church Street, Haledon Avenue, and North 16th Street areas	Coastal Storm, Flood, Severe Weather	Borough Engineer, Borough Department of Public Works	**Problem:** The bridge on Church Street, Haledon Avenue, and North 16th Street are all floodprone areas in the Borough. These areas flood during periods of heavy rain. At this time, the Borough needs to understand the best solutions to alleviate this problem. **Solution:** Conduct a feasibility study to investigate improvements in these areas that will help minimize roadway closures and damages due to flood events. The study will focus on Church Street, Haledon Avenue, and North 16th Street.	1.In Progress 2. The Borough of Haledon along with the Borough Engineer are currently evaluating funding opportunities and study scope of work for this feasibility study. Project is still in development.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Haledon-005	Feasibility Study at the intersection of Cliff and Oxford Streets	Coastal Storm, Flood, Severe Weather	Borough Engineer, Borough Department of Public Works	**Problem:** Water quantity problems exist throughout the Borough and include flooding and stream bank erosion. The intersection of Cliff and Oxford Streets contain an undersized drainage system and the area routinely floods during heavy rain storms. **Solution:** Conduct a feasibility study to investigate improvements in these areas that will help minimize roadway closures and damages due to flood events. The study will focus on the intersection of Cliff and Oxford Streets.	1.In Progress 2. The Borough of Haledon along with the Borough Engineer are currently evaluating funding opportunities and study scope of work for this feasibility study. Project is still in development.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Haledon-006	Feasibility Study of Cona Court, Bernard Ave, and North 12th and 13 Streets	Coastal Storm, Flood, Severe Weather	Borough Engineer, Borough Department of Public Works	**Problem:** The area of Cona Court, Bernard Ave, and North 12th and 13 Streets experience flooding during heavy rain events. On Cona Court, sewage backups occur as well. **Solution:** Conduct a feasibility study to investigate improvements in these areas that will help minimize roadway closures and damages due to flood events. The study will focus on Cona Court, Bernard Ave, and North 12th and 13 Streets.	1. In Progress 2. The Borough of Haledon along with the Borough Engineer are currently evaluating funding opportunities and study scope of work for this feasibility study. Project is still in development.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

5.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Haledon 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 Haledon 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 Borough priorities.

Table 5-18 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 5-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 5-18. 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
Drought		X								X
Extreme Temperature		X								X
Flood		X	X		X	X		X		X
Geological Hazards		X								X
Severe Weather		X	X		X	X		X		X
Severe Winter Weather		X								X
Wildfire		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 5-19. 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-HaledonB-001	Generators for Critical Facilities	1	1	1	1	1	1	0	1	1	1	1	0	1	0	**11**	High
2025-HaledonB-003	Repetitive Loss Properties	1	1	1	1	1	1	1	1	1	1	1	0	1	1	**13**	High
2025-HaledonB-003	Feasibility Study Flood Prone Areas	1	1	1	1	1	1	1	0	1	1	1	0	1	0	**11**	High
2025-HaledonB-004	Feasibility Study for Flood Improvement	1	1	1	1	1	1	1	0	1	1	1	0	1	0	**11**	High
2025-HaledonB-005	Feasibility Study for Roadway Flood Improvement	1	1	1	1	1	1	1	0	1	1	1	0	1	0	**11**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-HaledonB-001.Generators for Critical Facilities

Lead Agency:	Borough Office of Emergency Management
Supporting Agencies:	Borough Engineering, Borough Fire Department
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Three critical facilities in the Borough do not have backup power and cannot function properly during a power outage caused by hazard events.
Description of the Solution:	Obtain backup power to support continuity of operations during hazard events. Critical facilities identified at this time: 1. Generator for Borough Town Hall 2. Haledon Fire Company 1 (Pompton Road) 3. Haledon Fire Company 2 (West Broadway)
Estimated Cost:	High
Potential Funding Sources:	FEMA HMGP
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	Structure and Infrastructure Projects
CRS Category	Emergency Services
Priority	High

Alternatives:

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

Action 2025-HaledonB-002. Repetitive Loss Properties

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Homeowner
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	There is one repetitive loss property in the Borough. Frequent flooding has resulted in damages to this structure as documented by paid NFIP claims.
Description of the Solution:	Conduct outreach to the property owner and provide information on mitigation alternatives including elevation, acquisition, and floodproofing the structure. If the homeowner chooses elevation or acquisition, the Borough will develop a FEMA grant application to obtain funding to implement the project.
Estimated Cost:	Medium
Potential Funding Sources:	Borough Budget, FEMA FMA, HMGP, Property Owner Match
Implementation Timeline:	Within 5 years
Goals Met:	1,2,3,5,7,8
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

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

Action 2025-HaledonB-003. Feasibility Study Flood Prone Areas

Lead Agency:	Borough Engineering
Supporting Agencies:	Borough Department of Public Works
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The bridge on Church Street, Haledon Avenue, and North 16th Street are all flood prone areas in the Borough. These areas flood during periods of heavy rain. At this time, the Borough needs to understand the best solutions to alleviate this problem.
Description of the Solution:	Borough Engineering and Department of Public Works will conduct a feasibility study to investigate improvements in these areas that will help minimize roadway closures and damages due to flood events. The study will focus on Church Street, Haledon Avenue, and North 16th Street.
Estimated Cost:	Medium
Potential Funding Sources:	FEMA FMA, Borough Budget
Implementation Timeline:	Within 5 years
Goals Met:	1,2,4,5,7
Benefits:	Flood risk will be reduced in hazard prone areas.
Impact on Socially Vulnerable Populations:	If cost-effective mitigation actions are identified, they may be implemented in flood prone areas that could reduce their overall risk to loss of life and property.
Impact on Future Development:	Flood insurance costs may decrease.
Impact on Critical Facilities/Lifelines:	Transportation routes will be more likely to remain open if flooding is mitigated along them.
Impact on Capabilities:	This study will identify opportunities for mitigation funding to be spent in the areas in which it is most needed to increase resiliency and decrease damage from flood events.
Climate Change Considerations:	Consideration should be taken to ensure any projects conducted have accounted for increased extreme rainfall events.
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Projects
CRS Category	Natural Resource Protection, Preventative Measures, Property Protection
Priority	High

Alternatives:

Action	Evaluation
No action	Current problem continues
Relocate all flood prone road systems	Not feasible
Raise all flood prone roads	Cost prohibitive

Action 2025-HaledonB-004. Feasibility Study for Flood Improvement

Lead Agency:	Borough Engineering
Supporting Agencies:	Borough Department of Public Works
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	Water quantity problems exist throughout the Borough and include flooding and stream bank erosion. The intersection of Cliff and Oxford Streets contain an undersized drainage system and the area routinely floods during heavy rain storms.
Description of the Solution:	Borough Engineering and Department of Public Works will conduct a feasibility study to investigate improvements in these areas that will help minimize roadway closures and damages due to flood events. The study will focus on the intersection of Cliff and Oxford Streets.
Estimated Cost:	Medium
Potential Funding Sources:	FEMA FMA, Borough Budget
Implementation Timeline:	Within 5 years
Goals Met:	2,4,5,8
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Capabilities:	Not Applicable
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Projects
CRS Category	Natural Resource Protection, Preventative Measures, Property Protection
Priority	High

Alternatives:

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

Action 2025-HaledonB-005. Feasibility Study for Roadway Flood Improvement

Lead Agency:	Borough Engineering
Supporting Agencies:	Borough Department of Public Works
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The area of Cona Court, Bernard Ave, and North 12th and 13 Streets experience flooding during heavy rain events. On Cona Court, sewage backups occur as well.
Description of the Solution:	Borough Engineering and Department of Public Works will conduct a feasibility study to investigate improvements in these areas that will help minimize roadway closures and damages due to flood events. The study will focus on Cona Court, Bernard Ave, and North 12th and 13 Streets
Estimated Cost:	Medium
Potential Funding Sources:	FEMA FMA, Borough Budget
Implementation Timeline:	Within 5 years
Goals Met:	2,4,5
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Capabilities:	Not Applicable
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Projects
CRS Category	Natural Resource Protection, Preventative Measures, Property Protection
Priority	High

Alternatives:

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

6. BOROUGH OF HAWTHORNE

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

6.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Hawthorne identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management represented the community on the Passaic 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 6-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 6-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Matthew Fenkart, Deputy Office of Emergency Management Coordinator Address: 445 Lafayette Avenue, Hawthorne, NJ 07506 Phone Number: 973-513-2808 Email: mfenkart@hawthornepdnj.org	Name/Title: Lt. Ben Veenema, Office of Emergency Management Coordinator Address: 445 Lafayette Avenue, Hawthorne, NJ 07506 Phone Number: 973-296-1917 Email: bveenema@hawthornepdnj.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Ed Ferraioli, Building Official Address: 445 Lafayette Avenue, Hawthorne, NJ 07506 Phone Number: 201-313-6478 Email:eferraioli@hawthornenj.org	
Additional Contributors	
Name/Title: Lt. Ben Veenema, Office of Emergency Management Coordinator Method of Participation: Provided updated information for hazard event history, capability assessment, NFIP, mitigation action status and building permits and new development.	
Name/Title: Matthew Fenkart, Office of Emergency Management Deputy Coordinator Method of Participation: Attended the Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop; Provided updated information for critical facilities, hazard event history, capability assessment, NFIP, mitigation action status and building permits and new development.	
Name/Title: Andrew Skae, Office of Emergency Management Deputy Coordinator Method of Participation: Attended the Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop; Provided updated information for hazard event history, capability assessment, NFIP, mitigation action status and building permits and new development.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: John Lane, Mayor Method of Participation: Attending the Planning Partnership Kickoff.	
Name/Title: Laurie A. Foley, CFO, Finance Department Method of Participation: Attending the Planning Partnership Kickoff.	

6.2 COMMUNITY PROFILE

6.2.1 Brief History

Once inhabited by the Lenni-Lenape Indians, also known as the Delaware, Hawthorne was settled in the 1700s by Dutch immigrants who were to become the borough's pioneer farmers. This settlement was first part of Manchester Township, a region that was later separated into Hawthorne, Haledon, North Haledon, Prospect Park, Totowa and most of the First Ward of Paterson. The municipality was incorporated by an act of the New Jersey Legislature on March 24, 1898.

6.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 3.364 square miles, of which 3.334 square miles is land and 0.03 square miles is water. The Borough is bordered by the Borough of Prospect Park and City of Paterson to the south, Borough of North Haledon to the west, and Bergen County to the east and north.

6.2.3 Governing Body Format

Since 1990, the Borough of Hawthorne has operated under a Mayor – Council form of government, as authorized by the State of New Jersey's Faulkner Act with a charter approved by the local voters. Under this form of government, similar in concept to our federal government, the Mayor and the Council are two separate but co-equal power centers. The mayor serves as Chief Executive of the Borough who is responsible for supervising the operations of government and seeing that the laws are enforced, while the Borough Council serves as the Borough's legislative body, passing local ordinances and resolutions.

6.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Hawthorne was 19,637, a 4.4 percent increase 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 2020 U.S. Census indicates that 3.8 percent of the population is 5 years of age or younger, 20.8 percent is 65 years of age or older, 4.6 percent is non-English speaking, 4.9 percent is below the poverty threshold, and 9.4 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

6.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Hawthorne 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 Hawthorne to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

6.3.1 Planning and Regulatory Capability and Integration

Table 6-2 summarizes the planning and regulatory tools that are available to Hawthorne.

Table 6-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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 185 – Uniform Construction Codes	State and Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? The department is capable of implementing the code and all municipal codes within its authority to ensure new development meets safety codes to protect the public against natural and manmade disasters. This chapter has been integrated into other municipal codes including Land Use Procedures, Property Maintenance, Subdivision of Land, and Zoning.				
Zoning/Land Use Code	Yes	Chapter 540 – Zoning & Land Development Chapter 247 - Flood Damage Prevention	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? ● Chapter 540 (Zoning) - An application for a building permit for any proposed development on land lying within Zone A, Special Flood Hazard Area, as shown on the current Department of Housing and Urban Development, Federal Insurance Administration Flood Hazard Boundary Maps 10 for the Borough of Hawthorne, shall be first reviewed by the Planning Board under the provisions of Chapter 247 of this chapter, and all standards, procedures and requirements therein set forth shall be complied with to the extent applicable to construction or other improvements in a floodplain area having special flood hazards. This chapter was established by the Planning and Zoning Boards and set up procedures by which they review and can approve applications for development. The Boards approve or deny applications for development and require compliance with the applicable Borough ordinances put in place to protect the Borough from the possible detrimental impacts of development projects. This chapter has been integrated into other municipal codes include Zoning, Subdivision of Land, Storm Sewers, and Stormwater Management. ● Chapter 247 (Flood Damage Prevention) - The purposes and objectives of this chapter is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to: A. Protect human life and health; B. Prevent unnecessary disruption of commerce, access, and public service during times of flooding; C. Manage the alteration of natural floodplains, stream channels and shorelines; D. Manage filling, grading, dredging and other development which may increase flood damage or erosion potential; E. Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards; F. Contribute to improved construction techniques in the floodplain; G. Minimize damage to public and private facilities and utilities; H. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas; I. Minimize the need for rescue and relief efforts associated with flooding; J. Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas.; K. Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events; L. Meet the requirements of the National Flood Insurance Program for community participation set forth in 44 CFR Section 59.22.			

	Jurisdiction has this?	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
Subdivision Code	Yes	Chapter 540, Part 2 – Subdivision and Site Plan Regulations Chapter 247, Article X - Subdivisions and Other Developments	Local	Zoning Administrator
How has or will this be integrated with the HMP and how does this reduce risk? Any owner of land within the Borough of Hawthorne shall, prior to subdividing or re-subdividing land as defined in the chapter, must submit to the Zoning Administrator at least two weeks prior to a regular meeting of the Board for consideration at the work session of the Board. All subdivision proposals shall be reviewed for assurance that: all such proposals are consistent with the need to minimize flood damage; all public utilities and facilities, such as sewer, gas, electrical and water systems, are located, elevated, and constructed to minimize or eliminate flood damages; and adequate drainage is provided so as to reduce exposure to flood hazards. Any subdivision proposal, including proposals for manufactured home parks and subdivisions, or other proposed new development in a flood hazard area, shall be reviewed to assure that: A. All such proposals are consistent with the need to minimize flood damage; B. All public utilities and facilities, such as sewer, gas, electric and water systems are located and constructed to minimize or eliminate flood damage; C. Adequate drainage is provided to reduce exposure to flood hazards; in Zones AH and AO, adequate drainage paths shall be provided to guide floodwater around and away from structures.			
Site Plan Code	Yes	Chapter 540, Part 2 – Subdivision and Site Plan Regulations	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? When reviewing building permit applications for construction, improvement, or major repairs in the SFHA, the Planning Board reviews the site plans for: Major Repairs - Uses construction materials and utility equipment that are resistant to flood damage; uses construction methods and practices that will minimize flood damage. New construction or substantial improvements - Is protected against flood damage; Is designed (or modified) and anchored to prevent flotation, collapse or lateral movement of the structure; uses construction materials and utility equipment that are resistant to flood damage; uses construction methods and practices that will minimize flood damage.			
Stormwater Management Code	Yes	Chapter 540, Part 3 – Stormwater Control	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Flood control, groundwater recharge, and pollutant reduction shall be achieved through the use of stormwater management measures, including green infrastructure best management practices (GI BMPs) and nonstructural stormwater management strategies. GI BMPs and low-impact development (LID) should be utilized to meet the goal of maintaining natural hydrology to reduce stormwater runoff volume, reduce erosion, encourage infiltration and groundwater recharge, and reduce pollution. GI BMPs and LID should be developed based upon physical site conditions and the origin, nature and the anticipated quantity, or amount, of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.			
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
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
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				

	Jurisdiction has this?	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

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?
- 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? N/A				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Environmental Protection Ordinance(s)	Yes	Chapter 488 Tree Removal; Chapter 491 Shade Trees	Local	Shade Tree Commission

How has or will this be integrated with the HMP and how does this reduce risk?

- Chapter 488 (Tree Removal) – this chapter states that no property owner shall remove or destroy or cause to be removed or destroyed by any person any tree on any unimproved or vacant tract of land or partially improved tract of land as defined above, within the Borough, unless a permit is obtained for such removal. The Planning Board or Zoning Board shall refer all applications to the Shade Tree Commission for their examination and opinion. A permit shall be granted if there is a finding that the removal and destruction of a tree or trees will not impair the growth and development of remaining trees on the property of the applicant or adjacent properties and would not cause erosion of soil, impair existing drainage, lessen property values in the neighborhood or impair the aesthetic value of the area.
- Chapter 491 (Shade Trees) - This chapter may be enforced by the members of the Commission, the Code Enforcement Officer, the Arborist and members of the Police Department. It shall be the duty of the Shade Tree Commission, subject to its review and approval, which shall be subject to the sole discretion of the Shade Tree Commission, from time to time, to plant trees and other plantings in those areas which are subject to the jurisdiction of the Shade Tree Commission. This chapter shows a commitment to planting and saving shade trees, which has benefits such as preventing soil erosion, assisting in drainage, removing carbon dioxide, providing habitat, and shade.

Flood Damage Prevention Ordinance	Yes	Chapter 247 – Flood Damage Prevention, 7/12/2023	Local	Construction Official/Floodplain Administrator

How has or will this be integrated with the HMP and how does this reduce risk?
This chapter, in combination with the flood provisions of the Uniform Construction Code and FHACA, shall apply to all proposed development in flood hazard areas established in Article II of these chapter. The purposes and objectives of these chapter are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to:

A. Protect human life and health.
B. Prevent unnecessary disruption of commerce, access, and public service during times of flooding.
C. Manage the alteration of natural floodplains, stream channels and shorelines.
D. Manage filling, grading, dredging and other development which may increase flood damage or erosion potential.
E. Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards.
F. Contribute to improved construction techniques in the floodplain.
G. Minimize damage to public and private facilities and utilities.
H. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas.
I. Minimize the need for rescue and relief efforts associated with flooding.
J. Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas.
K. Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events
L. Meet the requirements of the National Flood Insurance Program for community participation set forth in 44 CFR Section 59.22.

The ordinance follows the latest model code coordinated ordinance from NJDEP

Wellhead Protection	No	-	-	-

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

	Jurisdiction has this?	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
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	See below	Local	-
How has or will this be integrated with the HMP and how does this reduce risk? • ***Chapter 350 (Parks and Recreation)*** *– Through enforcement by the Borough, this chapter protects developed and undeveloped public recreation areas from degradation. This chapter states that no person or entity shall utilize any public recreation area without first obtaining a permit, license, or pass. This chapter is integrated into other codes including Streets and Sidewalks, Subdivision of Land, and Zoning.* • ***Chapter 399 (Sewers and Sewage Disposal)*** *– last amended on March 6, 2019. The chapter states that no unauthorized person shall uncover, make any connections with nor opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a permit from the appropriate municipal official. No person shall make connection of roof downspouts, foundation drains, areaway drains or other sources of surface runoff or groundwater to a building sewer, which in turn is connected directly or indirectly to a public sanitary sewer, unless approved by the municipality for purposes of disposal of polluted surface drainage. The Borough put in place special discharge requirements for industrial and commercial waste. It shall be unlawful to discharge into any natural outlet within the municipality any wastewater or other polluted waters, except where suitable treatment has been provided and where a National Pollutant Discharge Elimination System permit has been obtained from the appropriate governmental authority, where required.*			
PLANNING DOCUMENTS				
General/Comprehensive/Master Plan	Yes	Borough Master Plan	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Provides a framework for development that guides the use of lands within a municipality in a manner that protects public health and safety and promotes the general welfare. In 2022, the Hawthorne Environmental Commission updated the Environmental Resource Inventory (ERI) and added it as an appendix in the Master Plan.				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	Yes	Municipal Stormwater Management Plan, 2020	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Sets forth goals to reduce flood damage, including to life and property, to minimize any increase in stormwater runoff from new development, and reduce soil erosion from any development or construction project, among others.				

	Jurisdiction has this?	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
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	Yes	Environmental Resource Inventory, April 2022	Local	Environmental Commission
How has or will this be integrated with the HMP and how does this reduce risk? Environmental Resource Inventory (April 2022) – this plan is used by the Environmental Commission to provide environmental comments to proposed development in the Borough. The plan includes information on land resources, air resources, biological resources, hydrology, and natural resource use.				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	Yes	Community Forestry Plan, 2019	Local	Environmental Commission
How has or will this be integrated with the HMP and how does this reduce risk? In February 2019, the Borough of Hawthorne submitted its fourth 5-year Community Forestry Management Plan (CFMP) to NJDEP. NJDEP approved plan on May 21, 2019. The purpose of this plan is to improve the quality of life in the Borough of Hawthorne by maximizing the environmental, social and economic benefits of trees to the community while minimizing their costs and liabilities. Relevant goals 1. Maximize long-term stability and sustainability in the public tree population. 2. Situate and maintain public interest, appreciation and support for the Borough's Shade Tree Program and encourage volunteer participation. 3. Encourage environmental stewardship and the planting and proper care of trees on private property.				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other	Yes	See below	Local	-

How has or will this be integrated with the HMP and how does this reduce risk?

- Land Use and Open Space - part of the Borough's Environmental Resource Inventory
- Open Space Plan
- Emergency Response Plan – 9/13/13
- Environmental Resource Inventory
- Housing Element and Fair Share Plan – 3/5/2009

RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Borough of Hawthrone Emergency Operations Plan	Local	Office of Emergency Management

How has or will this be integrated with the HMP and how does this reduce risk?
The Borough has an updated Emergency Operations Plan (EOP) that is approved every 3 years by the New Jersey State Police / Emergency Management Unit.

Continuity of Operations Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Substantial Damage Response Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Threat and Hazard Identification and Risk Assessment	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Post-Disaster Recovery Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Public Health Plan	Yes	Public Health Plan	Local	City of Paterson

How has or will this be integrated with the HMP and how does this reduce risk?
City of Paterson performs Health Department duties and maintains the Public Health Plan.

Other	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

6.3.2 Development and Permitting Capability

Table 6-3 summarizes the capabilities of Hawthorne to oversee and track development.

Table 6-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 is responsible for issuing development permits in the Borough.
Are permits tracked by hazard area? (For example, floodplain development permits.)	No	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No	-
Describe the level of buildout in your jurisdiction.	N/A	-

6.3.3 Administrative and Technical Capability

Table 6-4 summarizes potential staff and personnel resources available to Hawthorne and their current responsibilities that contribute to hazard mitigation.

Table 6-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Hawthorne Planning Board - responsible for review and approval of applications for site development and subdivision of property, for approval of a Master Plan or changes to the Master Plan, reporting on a periodic review of the Master Plan, reviewing and approving applications for certificate of compliance for commercial properties, and advising the Council on changes to the Zoning Ordinance.
Zoning Board of Adjustment	Yes	The Zoning Board of Adjustment has the authority to grant use variances from the approved municipal zoning ordinances and approval of a site plan application for development in conjunction with such a variance. The Board can also hear appeals of certain decisions of the Zoning Officer and make determination of pre-existing, non-conforming uses.
Planning Department	Yes	The Zoning Enforcement Office is responsible for enforcement of the Borough's local zoning ordinance. Appeals of decisions of the Zoning Official can be made to Hawthorne's Zoning Board of Adjustment. This office also receives applications to the Borough's Planning Board and its Board of Zoning Adjustment.
Mitigation Planning Committee	Yes	Office of Emergency Management and Local Emergency Planning Committees

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Environmental Board/Commission	Yes	The Environmental Commission has been able to achieve many accomplishments by protecting and preserving the environment of the Borough of Hawthorne through the following activities: ● Secured grants to help fund environmental projects, such as 8 Acre Woods in Goffle Brook Park and Green Map ● Developed an Environmental Resource Inventory that is used to guide Hawthorne on land use decisions ● Advise municipal planning boards and zoning boards of adjustment about the impacts of development proposals on such issues as flooding and runoff, open space needs, water and air quality, plant and animal habitat, and waste disposal ● An Environmental Commissioner seat on the Planning Board to provide recommendations and advice on potential environmental impacts on proposed development ● Monitor upcoming environmental issues and regulations and provide guidance to Municipal Council and Mayor ● Educate and inform residents and students on ways to protect the environment ● In 2022, the Hawthorne Environmental Commission updated the Environmental Resource Inventory (ERI) and added it as an appendix in the Master Plan. The Green Team is a sub-committee of the Environmental Commission. The Shade Tree Commission has authority for the regulation, planting, care and control of shade and ornamental trees and shrubbery in all municipal parks and on municipal streets.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Hawthorne Economic Development Committee - focuses on retention and expansion of existing businesses, as well as attracting new businesses and community development
Public Works/Highway Department	Yes	Public Works is responsible for the Borough's Stormwater Management Program. Water Department
Construction/Building/Code Enforcement Department	Yes	The Code Enforcement Office is responsible for the enforcing various "quality of life" ordinances in Hawthorne. The Construction Code Office is responsible for the issuance of permits and performing inspections on building, electrical, fire, mechanical and plumbing work done in the Borough.
Emergency Management/Public Safety Department	Yes	The Hawthorne Office of Emergency Management works in conjunction with the Borough's Administration, Emergency Services and various other department heads. The main focus of this agency is to mitigate, plan, respond, and the recovery from various types of disasters whether it is of a natural or man-made occurrence. The Borough also has Fire Prevention and Police Departments.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	The Department of Public Works performs storm drain cleaning and tree trimming. This helps reduce damages during and after storm events. There are many county and state roads in the Borough. If an area needs to be clear of debris, the Borough informs the state or county.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Mutual aid agreements	Yes	The Borough has mutual aid agreements with surrounding neighborhoods and with the County. This helps the Borough get the proper equipment and assistance during an event
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Board and Town Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Town Engineer, Construction Official, Building Inspector
Planners or engineers with an understanding of natural hazards	Yes	Planning Board and Town Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Boswell Engineering
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Boswell Engineering
Staff that work with socially vulnerable populations or underserved communities	Yes	Health Department
Environmental scientists familiar with natural hazards	Yes	Boswell Engineering
Surveyors	Yes	Boswell Engineering
Emergency manager	Yes	Boswell Engineering
Grant writers	No	-
Resilience Officer	Yes	Hawthorne Police Department (for police personnel only)
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

6.3.4 Fiscal Capability

Table 6-5 summarizes financial resources available to Hawthorne.

Table 6-5. Fiscal Capabilities

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

6.3.5 Education and Outreach Capability

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

Table 6-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Every department in the Borough has their own Public Information Officer (PIO). For emergency management purposes, the Emergency Management Coordinator or his/designee is the PIO.
Personnel skilled or trained in website development	Yes	Borough run and maintained
Hazard mitigation information available on your website	Yes	The municipal website and the Office of Emergency Management webpage provide hazard-related information. This includes public announcements, providing information on preparing for a disaster, links to FEMA flood maps, and encourages residents to sign up for the Borough's emergency alert system. Public Works hosts information on stormwater management.
Social media for hazard mitigation education and outreach	Yes	Police Department Facebook, Instagram, LinkedIn, Nixle, and local TV station (changes with the season/weather event)
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Hawthorne Community Emergency Response Team (CERT). Through this program, residents are trained on dealing with terrorism, disaster preparedness, disaster psychology, fire suppression, medical emergencies, sear and rescue, and team organization.

Outreach Resources	Available?	Comment
Warning systems for hazard events	Yes	The Hawthorne Office of Emergency Management (OEM) coordinates emergency communications during public emergencies or any other time the public requires mass notification to its residents or subscribers through the use of the Hawthorne Emergency Alert System (emergency alert siren, radio station, cable tv, and reverse 911). The Borough also uses the Nixle system for email and text message alerts to the community and publicizes the signup process for residents.
Natural disaster/safety programs in place for schools	Yes	Shelter In Place/Evacuation for weather emergencies, or other emergencies not related to an active shooter - on file with the Board of Education.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	The Office of Emergency Management via social media
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Cel-Earth-Bration is an annual event, conducted by the Hawthorne Environmental Commission, which has been celebrated in the municipality of Hawthorne for the past 30 years. Partnering with the Hawthorne school system, Board of Education, Superintendent of Schools, Borough Council and Mayor, Department of Public Works, and Hawthorne Shade Tree Commission, this event continues to help build enthusiasm and community participation. Local businesses help to further involve the community and increase available resources. This day is designed to heighten awareness of environmental issues for children in our schools, as well as for parents and the general public. The Hawthorne Green Team in partnership with the Hawthorne Chamber of Commerce holds an annual Green Fair at the Hawthorne's Farmers' Market.

6.3.6 Community Classifications

Table 6-7 summarizes classifications for community programs available to Hawthorne.

Table 6-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	3	August 2023
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Silver	October 21,2022
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

6.3.7 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 6-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 6-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Strong
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

6.4 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 6-1 is responsible for maintaining this information.

6.4.1 NFIP Statistics

Table 6-9 summarizes the NFIP policy and claim statistics for Hawthorne.

6.4.2 Flood Vulnerability Summary

Table 6-10 provides a summary of the NFIP program in Hawthorne.

Table 6-9. Hawthorne NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**140**
Total Loss Payments	**$4,151,227**
# Repetitive Loss Properties (NFIP definition)	**14**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**6**
# Severe Repetitive Loss Properties (FMA definition)	**8**

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: NJOEM 2024

Table 6-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Goffle Road, Wagaraw Road, Lafayette Ave, Rock Road, Central Ave, Royal Ave, McKinley Ave, Grand Ave, 1st 2nd 3rd Aves, Rea Ave, Schoon Ave, Passaic Ave, as well as all areas immediately adjacent to the Passaic River and Goffle Brook.
Do you maintain a list of properties that have been damaged by flooding?	Yes in our Police CAD system at HQ (LawSoft - Property Damage)
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)?	-
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	With assistance from the Hawthorne Fire Department and Building Department
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	3; Funded via CDBG-DR
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Yes

NFIP Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	Building/Zoning Official
Are any certified floodplain managers on staff in your jurisdiction?	In Progress - Borough Building Official Enrolled in Class
Do you have access to resources to determine possible future flooding conditions from climate change?	No
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?	Yes, General Floodplain Management Classes; In Progress
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Determination Still in Progress - NFIP Administrator Pending Certification
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Determination Still in Progress - NFIP Administrator Pending Certification
What are the barriers to running an effective NFIP program in the community, if any?	Lack of 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)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 247 (Ordinance – 2311-23)
What is the date that your flood damage prevention ordinance was last amended?	07/12/2023
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

6.5 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 6-11 through Table 6-13.

Table 6-11. 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
2020				
Total Permits	0	3	3	6
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	1	7	9
Permits within SFHA	0	0	0	0
2022				
Total Permits	1	3	3	7
Permits within SFHA	0	0	0	0
2023				
Total Permits	2	1	2	5
Permits within SFHA	0	0	0	0

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

Table 6-12. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
The Hedges	Residential	118 Units/1 Structure	204 Wagaraw Road	No	Complete
Royal Reality	Residential	28 Units/1 Structure	15 Royal Avenue	No	Complete

** Only location-specific hazard zones or vulnerabilities identified.*

Table 6-13. 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
MDL Reality	Commercial	1 Structure	47-57 Goffle Road	No	Approved, Pending Construction
Dunkin Donuts Drive Thru	Commercial	Addition to 1 Structure	68-84 Goffle Road	No	Approved, Pending Construction
Lidel	Commercial	1 Structure	2 Wagaraw Road	No	Approved, Pending Construction
SPMG	Residential	117 Units/1 Structure	542 Goffle Road	No	Approved, Pending Construction

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

6.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 6-1 through Figure 6-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Hawthorne has significant exposure. The maps show the location of potential new development, where available.

Figure 6-1. Hawthorne Hazard Area Extent and Location Map 1

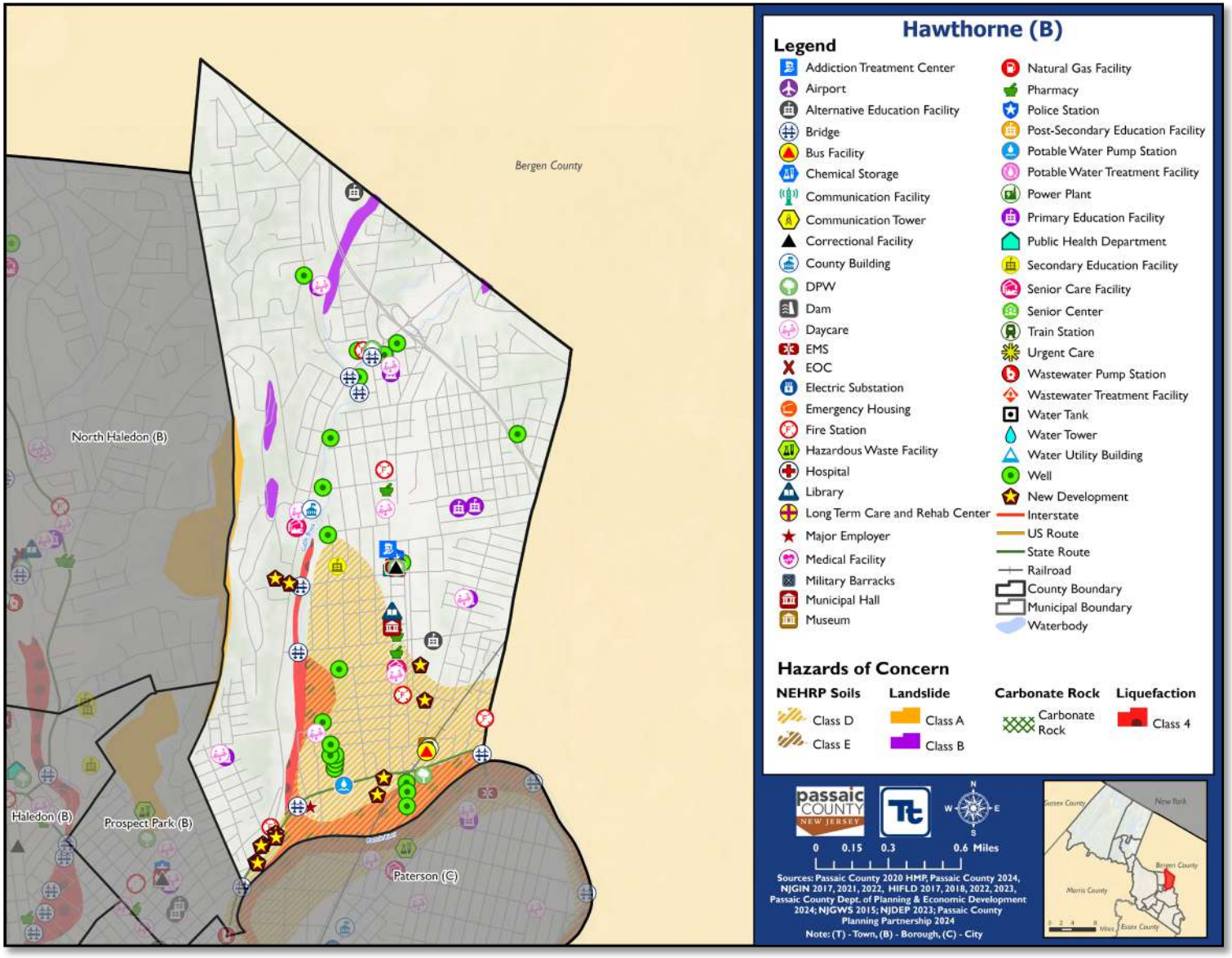
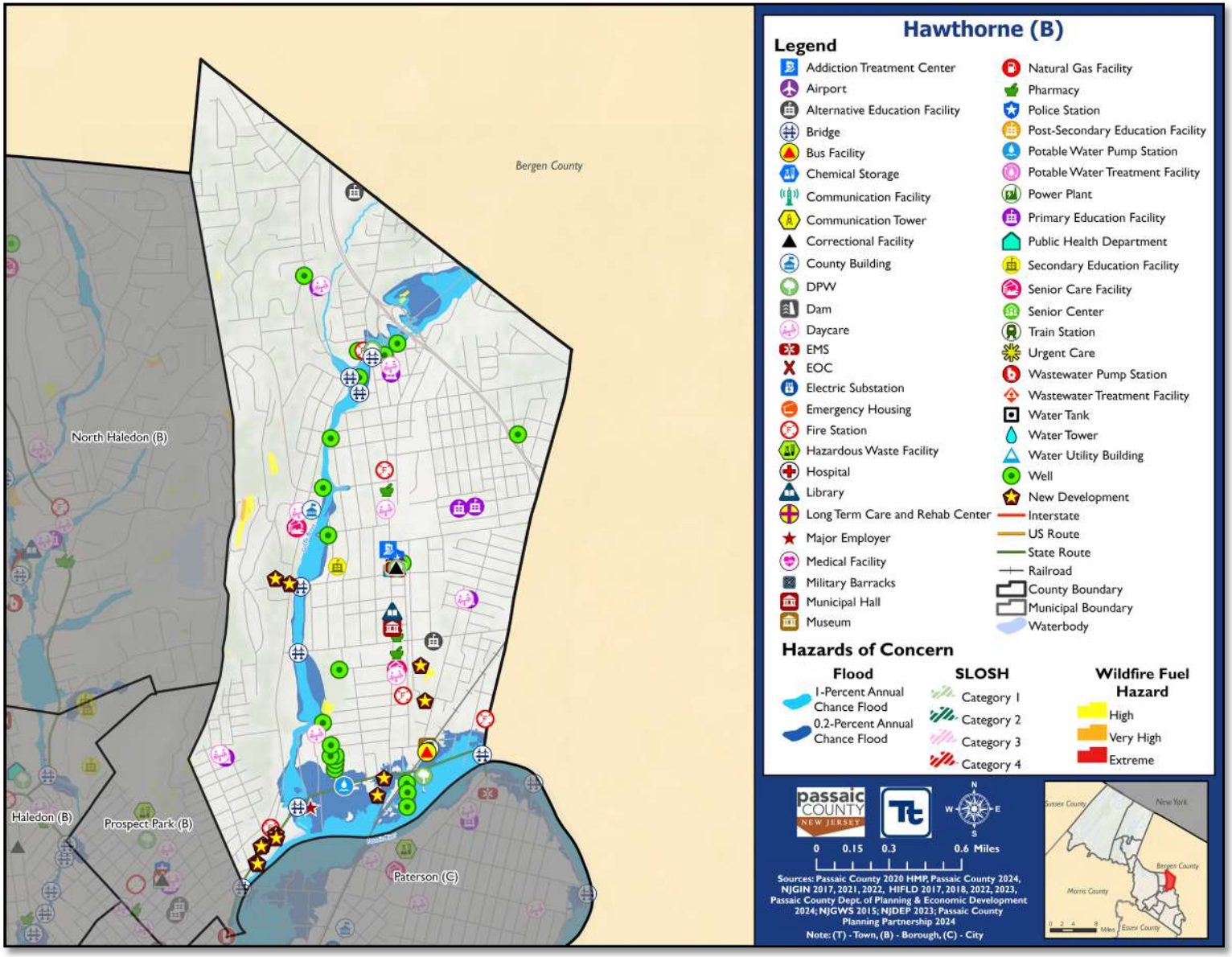


Figure 6-2. Hawthorne Hazard Area Extent and Location Map 2



6.6.2 Hazard Event History

The history of natural and non-natural hazard events in Hawthorne is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 6-14 provides details on loss and damage in Hawthorne during hazard events since the last hazard mitigation plan update.

Table 6-14. Hazard Event History in Hawthorne

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Hawthorne
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	N/A
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	Road closures - Goffle Rd south of MacFarlan, Goffle Rd from Goffle Hill Rd to State Highway 208 ramps, Wagaraw Rd Entire Length, Lafayette Ave between Central Ave and Garfield Ave, Rock Rd at Goffle Road, Central Ave from Royal Ave to Lafayette Ave, Royal Ave at Central Ave, McKinley Ave from Grand Ave to Lafayette Ave, Grand Ave from McKinley Ave to Jefferson Pl, 1st 2nd 3rd Aves by Rea Ave, Rea Ave from Lafayette Ave to Goffle Rd Schoon Ave, Passaic Ave south of Columbus Ave. Damages – Multiple personally owned vehicles of motorists and three Borough owned vehicles (HPD #321 HFD #58, HFD #61), Borough's Kubota LA 1353 Front End Loader, and damages also to Borough properties (Goffle Hill Water Station Service Road washed out, and flooding at Recycling Center)

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Hawthorne
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Road closures - Goffle Rd south of MacFarlan, Goffle Rd from Goffle Hill Rd to State Highway 208 ramps, Wagaraw Rd Entire Length, Lafayette Ave between Central Ave and Garfield Ave, Rock Rd at Goffle Road, Central Ave from Royal Ave to Lafayette Ave, Royal Ave at Central Ave, McKinley Ave from Grand Ave to Lafayette Ave, Grand Ave from McKinley Ave to Jefferson Pl, 1st 2nd 3rd Aves by Rea Ave, Rea Ave from Lafayette Ave to Goffle Rd Schoon Ave, Passaic Ave south of Columbus Ave.

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

6.6.3 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 Hawthorne.

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. Hawthorne 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 Borough indicated the following:

- For dam failure events, the Borough identified its proximity to the nearest dam as a strength, as it is close enough to avoid significant impact. However, a weakness is the lack of knowledge or preparedness due to the absence of a dam or similar structure within the Borough. An obstacle identified is the management of debris downstream after an event, which is likely to be handled at the county level and has minimal impact locally. Opportunities include desilting prior to potential hazards, implementing overflow control measures, and widening the riverbank. The Borough agreed with the ranking of Low for Dam Failure.
- During drought events, the Borough identified its independence from other jurisdictions for water supply as a strength. However, a weakness is the potential lack of community involvement if the need arises. Obstacles include the outsourcing of water to other jurisdictions, which limits their water availability. An opportunity identified is the proposed acquisition of a water storage facility. The Borough agreed with the ranking of Medium for Drought.
- For extreme temperature events, the Borough identified several strengths, including multiple cooling and warming centers within the jurisdiction and county-wide, as well as the Passaic County "Code Blue" relief efforts. However, weaknesses include insufficient manpower to staff these centers and limited capabilities to transport residents, particularly given the large Section 8 (affordable housing) population. Obstacles

include widespread communication issues, especially for those who do not utilize social media or smartphones. An opportunity identified is the ability to assess residents' needs better and prepare for future mitigation and response scenarios through grants and federal funding. The Borough agreed with the ranking of Medium for drought.

- The Borough is well-prepared for flood events, having extensive experience and rehearsed protocols due to the frequency of such events. However, weaknesses include the presence of several homes and businesses within the floodplain, with limited options for relocation. A significant obstacle is the lack of swift water rescue equipment and minimal access to emergency service support, which increases personnel risk and liability. An opportunity for the Borough is to secure funding to procure swift water rescue equipment to enhance their rescue capabilities. As a result of these determinations, in addition to the Borough's history of experiencing flood damage, the Borough updated the ranking of Flood from Medium to High.
- The Borough identified their strengths in flood management, including their well-versed protocols and multiple forms of communication with residents during severe weather. However, weaknesses include a lack of communication among emergency services. Obstacles they face are that not all emergency services can easily communicate with one another, and the Hawthorne Police Department Communications is staffed by a single dispatcher. An area of opportunity identified is hiring a second full-time Public Safety Telecommunicator (PST) to supplement their communications. The Borough updated the ranking for Severe Weather from Medium to High.
- During severe winter weather, the Borough's strengths include the County Code Blue program, a proactive Department of Public Works (DPW) Director, and Borough administration that preemptively salts and brines the roads. However, a weakness is the delayed plowing of County roads, as priority is given to larger municipalities. An obstacle is the hesitancy to pay Borough DPW overtime to plow and maintain County roads. An opportunity identified is to expand the DPW staff and equipment to better meet the needs of the residents. As a result, the Borough updated the ranking for Severe Winter Weather from Medium to High.
- The Borough identified strengths during wildfire events as having minimal forestry coverage. However, weaknesses include relying on volunteer fire services with no paid staff. Obstacles include limited training on forest fires, access issues, and a lack of equipment. Opportunities identified are grants and funding to support training and mitigation efforts, which would expand the jurisdictional capabilities in this area. The Borough agreed with ranking of Low for Wildfire.

Table 6-15 shows Hawthorne's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 6-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

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 6-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 6-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600011	Bridge	Yes	Yes
1600103	Bridge	Yes	Yes
1600104	Bridge	Yes	Yes
1600105	Bridge	Yes	Yes
1600108	Bridge	Yes	Yes
1600109	Bridge	Yes	Yes
1600110	Bridge	Yes	Yes
Goffle Rd Well 1	Well	Yes	Yes
Goffle Rd Well 3	Well	Yes	Yes
Goffle Rd Well 5	Well	No	Yes
Goffle Rd Well 6	Well	Yes	Yes
Hawthorne DPW Recycling Center	DPW	Yes	Yes
Hawthorne DPW Yard/Garage	DPW	Yes	Yes
Hawthorne VF Rescue 5 - HQ	Fire Station	No	Yes
North Water Pumping Station	Potable Water Pump Station	Yes	Yes
Positive Place Preschool	Daycare	No	Yes
Rae Ave Well	Well	Yes	Yes
South Wagaraw Well 10	Well	Yes	Yes
South Wagaraw Well 12	Well	Yes	Yes
South Wagaraw Well 15	Well	Yes	Yes
South Water Pumping Station	Potable Water Pump Station	No	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

No high hazard dams are located in the Borough of Hawthorne.

6.6.4 Identified Issues

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

- When the Passaic River floods, severe sewer and pump stations are vulnerable to flood impacts.
- Community members are unaware of the resources available to them should they become affected by a natural hazard. The Borough has hazard related information on their website, however, it does not cover all hazards of concern identified in the HMP.

- There are 20 repetitive loss properties in the Borough. Frequent flooding has resulted in damages to these structures as documented by paid NFIP claims. Community members are unaware of the resources available to them should they become affected by flooding.
- For dam failure events, the Borough identified its proximity to the nearest dam as a strength, as it is close enough to avoid significant impact. However, a weakness is the lack of knowledge or preparedness due to the absence of a dam or similar structure within the Borough. An obstacle identified is the management of debris downstream after an event, which is likely to be handled at the county level and has minimal impact locally. Opportunities include desilting prior to potential hazards, implementing overflow control measures, and widening the riverbank.*
- During drought events, the Borough identified its independence from other jurisdictions for water supply as a strength. However, a weakness is the potential lack of community involvement if the need arises. Obstacles include the outsourcing of water to other jurisdictions, which limits their water availability. An opportunity identified is the proposed acquisition of a water storage facility.*
- For extreme temperature events, the Borough identified several strengths, including multiple cooling and warming centers within the jurisdiction and county-wide, as well as the Passaic County "Code Blue" relief efforts. However, weaknesses include insufficient manpower to staff these centers and limited capabilities to transport residents, particularly given the large Section 8 (affordable housing) population. Obstacles include widespread communication issues, especially for those who do not utilize social media or smartphones. An opportunity identified is the ability to assess residents' needs better and prepare for future mitigation and response scenarios through grants and federal funding.*
- The Borough is well-prepared for flood events, having extensive experience and rehearsed protocols due to the frequency of such events. However, weaknesses include the presence of several homes and businesses within the floodplain, with limited options for relocation. A significant obstacle is the lack of swift water rescue equipment and minimal access to emergency service support, which increases personnel risk and liability. An opportunity for the Borough is to secure funding to procure swift water rescue equipment to enhance their rescue capabilities.*
- The Borough identified their strengths in flood management, including their well-versed protocols and multiple forms of communication with residents during severe weather. However, weaknesses include a lack of communication among emergency services. Obstacles they face are that not all emergency services can easily communicate with one another, and the Hawthorne Police Department Communications is staffed by a single dispatcher. An area of opportunity identified is hiring a second full-time PST to supplement their communications.*
- During severe winter weather, the Borough's strengths include the County "Code Blue" program, a proactive Department of Public Works (DPW) Director, and Borough administration that preemptively salts and brines the roads. However, a weakness is the delayed plowing of County roads, as priority is given to larger municipalities. An obstacle is the hesitancy to pay Borough DPW overtime to plow and maintain County roads. An opportunity identified is to expand the DPW staff and equipment to better meet the needs of the residents.*
- The Borough identified strengths during wildfire events as having minimal forestry coverage. However, weaknesses include relying on volunteer fire services with no paid staff. Obstacles include limited training on forest fires, access issues, and a lack of equipment. Opportunities identified are grants and funding to support training and mitigation efforts, which would expand the jurisdictional capabilities in this area.*
- The Borough does not have a substantial damage response plan.

* This issue was identified as a specific area of concern based on resident response to the Passaic County Hazard Mitigation Strengths, Weaknesses, Obstacles, and Opportunities (SWOO) worksheet.

6.7 MITIGATION STRATEGY AND PRIORITIZATION

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

6.7.1 Past Mitigation Action Status

Table 6-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

6.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 6-17, Hawthorne identified the following mitigation efforts completed since the last HMP:

- The Borough adopted the Code Coordinated Ordinance.

Table 6-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-HAWTHORNE-001	Elevation of Sewer and Pump Stations	Coastal Storm, Flood, Severe Weather, Severe Winter Weather	Borough Department of Public Works	**Project:** When the Passaic River floods, severe sewer and pump stations are vulnerable to flood impacts. **Solution:** Elevate seven sewer and water pump stations along the Passaic River above the floodplain.	1. In Progress 2. Noted that it is difficult to elevate the actual pumps themselves, however, ideas of elevating the electrical and/or mechanical components remains a priority.	1. Include in 2025 HMP 2. Edited to reflect appropriate counts - three wells and one sewer pump station. 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-HAWTHORNE-002	Road Closure Gates on Wagaraw Road	Coastal Storm, Flood, Severe Weather, Severe Winter Weather	Borough Department of Public Works	**Project:** Wagaraw Road is frequently inundated during heavy rain events; however, the flooding recedes within a couple of hours. In the event the road is flooded, DPW and emergency personal need to go out and close the roads and remain there until waters recede. **Solution:** Install eight gates at Wagaraw Road and appropriate signage. These will be used to close roads when they become inundated. It will provide safety measures for residents and municipal employees. It will reduce overtime, man hours and vehicle hours. It provides a more visible and sturdier barricade to provide safety measures and prevent cars from entering flooded roadways.	1. No Progress 2. Not feasible as the gates were proposed for sites on county roads.	1. Discontinue 2. Not Applicable 3. Not feasible; Recommended to not include.

Project Number	Project Name	Hazards 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.
2020-HAWTHORNE-003	Road Closure Gates on Goffle Road	Coastal Storm, Flood, Severe Weather, Severe Winter Weather	Borough Department of Public Works	**Project:** Goffle Road and North 8th Street are frequently inundated during heavy rain events; however, the flooding recedes within a couple of hours. In the event the road is flooded, DPW and emergency personal need to go out and close the roads and remain there until waters recede. **Solution:** Install 10 gates in the Goffle Road and North 8th Street area and appropriate signage. These will be used to close roads when they become inundated. It will provide safety measures for residents and municipal employees. It will reduce overtime, man hours and vehicle hours. It provides a more visible and sturdier barricade to provide safety measures and prevent cars from entering flooded roadways.	1. No Progress 2. Not feasible as the gates were proposed for sites on county roads.	1. Discontinue 2. Not Applicable 3. Not feasible; Recommended to not include.

Project Number	Project Name	Hazards 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.
2020-HAWTHORNE-004	Education and Outreach	All Hazards: Coastal Storm, Dam Failure, Disease Outbreak, Drought, Earthquake, Extreme Temperature, Flood, Geological, Hazardous Substances, Infestation and Invasive Species, Severe Weather, Severe Winter Weather, Wildfire	Borough Administration	**Project:** While the Borough has hazard related information on their website, it does not have cover all hazards of concern identified in the HMP. **Solution:** Develop a multi-hazard public education program that will help with informing residents of natural hazards and actions the public can take to be better prepared for the next disaster. This will include providing information on the Borough's website and social media accounts, creating brochures, and displaying information in Borough Hall and the library.	1. In Progress 2. Community members are unaware of the resources available to them should they become affected by flooding. Community outreach is our organization's primary focus - educating the public as to the potential hazards associated with flooding as well as what steps to take to protect their property.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-HAWTHORNE-005	Update Flood Damage Prevention Ordinance	All Hazards: Coastal Storm, Dam Failure, Disease Outbreak, Drought, Earthquake, Extreme Temperature, Flood, Geological, Hazardous Substances, Infestation and Invasive Species, Severe Weather, Severe Winter Weather, Wildfire	Borough Administration	**Project:** The current flood damage prevention ordinance (Chapter 247) states that any new development or substantial improvements must be elevated at or above the base flood elevation. This does not meet the minimum requirement set by the State of New Jersey. **Solution:** Update the current flood damage prevention ordinance to require new construction and substantial improvements to be elevated at least one foot above the base flood elevation.	1. Completed 2.	1. Discontinue 2. Not Applicable 3. This action has been completed

Project Number	Project Name	Hazards 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.
2020-HAWTHORNE-006	Repetitive Loss Properties	Flood	Floodplain Administrator, Homeowner	**Project:** There are 20 repetitive loss properties in the Borough. Frequent flooding has resulted in damages to these structures as documented by paid NFIP claims. **Solution:** Conduct outreach to the property owners and provide information on mitigation alternatives including elevation, acquisition, and floodproofing the structure. If the homeowners choose elevation or acquisition, the Borough will develop a FEMA grant application to obtain funding to implement the project.	1. In Progress 2. Community members are unaware of the resources available to them should they become affected by flooding. Community outreach is our organization's primary focus - educating the public as to the potential hazards associated with flooding as well as what steps to take to protect their property.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

6.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Hawthorne 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 Hawthorne 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 Borough priorities.

Table 6-18 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 6-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 6-18. 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
Drought				X	X		X			X
Extreme Temperature				X	X		X			X
Flood		X		X	X	X	X			X
Geological Hazards				X	X		X			X
Severe Weather		X		X	X	X	X			X
Severe Winter Weather		X		X	X	X	X			X
Wildfire				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 6-19. 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**	
Action 2025-HawthorneB-001	Elevation of Sewer and Pump Stations	1	1	1	1	0	0	0	0	1	1	1	0	0	0	**8**	Medium
Action 2025-HawthorneB-002	All-Hazard Education and Outreach	1	1	1	0	0	0	1	1	1	1	1	1	1	0	**10**	Medium
Action 2025-HawthorneB-003	Repetitive Loss Properties	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2024-HawthorneB-001. Elevation of Sewer and Pump Stations

Lead Agency:	Borough Department of Public Works
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	When the Passaic River floods, severe sewer and pump stations are vulnerable to flood impacts.
Description of the Solution:	The Borough Department of Public Works will elevate three wells and one sewer pump station along the Passaic River above the floodplain.
Estimated Cost:	Medium
Potential Funding Sources:	FEMA HMGP and FMA
Implementation Timeline:	Within 5 years
Goals Met:	2,5,6,8
Benefits:	Continuity of operations and infrastructure protection.
Impact on Socially Vulnerable Populations:	Vulnerable areas that may otherwise experience a loss of water during heavy rain or flooding will be more likely to retain services.
Impact on Future Development:	Communities with sound and resilient infrastructure encourage commercial and residential development.
Impact on Critical Facilities/Lifelines:	Hydration lifeline is more likely to remain intact.
Impact on Capabilities:	Maintaining operational water services reduces recovery time and costs.
Climate Change Considerations:	Consideration should be taken regarding the increase in heavy rain and flood events as a result of climate change.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection, Emergency Services
Priority	Medium

Alternatives:	Action	Evaluation
	No Action	Continue to be impacted by flooding
	Construction of Flood Barriers	Expensive and can disrupt natural flow
	Relocation of sewer and pump stations	Expensive and may not be feasible

Action 2025-HawthorneB-002. All-Hazard Education and Outreach

Lead Agency:	Borough Administration	
Supporting Agencies:	Passaic County	
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire	
Description of the Problem:	Community members are unaware of the resources available to them should they become affected by a natural hazard. The Borough has hazard related information on their website, however, it does not cover all hazards of concern identified in the HMP.	
Description of the Solution:	The Borough Administration will develop a multi-hazard public education program that will help with informing residents of natural hazards and actions the public can take to be better prepared for the next disaster. This will include providing information on the Borough's website and social media accounts, creating brochures, and displaying information in Borough Hall and the library.	
Estimated Cost:	Low	
Potential Funding Sources:	Borough Budget, FEMA PDM and HMGP	
Implementation Timeline:	Within 2 years	
Goals Met:	1,2,3,7	
Benefits:	Raise awareness of all hazards, increase education and outreach, community is better prepared.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards that may impact them in the Borough.	
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 Borough'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	Education and Awareness Programs	
CRS Category	Preventative Measures, Emergency Services, Public Information	
Priority	Medium	
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 Borough
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving guidance

Action 2025-HawthorneB-003. Repetitive Loss Properties

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Homeowners
Hazard(s) of Concern:	Flood
Description of the Problem:	There are 20 repetitive loss properties in the Borough. Frequent flooding has resulted in damages to these structures as documented by paid NFIP claims. Community members are unaware of the resources available to them should they become affected by flooding.
Description of the Solution:	Conduct outreach to the property owners and provide information on mitigation alternatives including elevation, acquisition, and floodproofing the structure. If the homeowners choose elevation or acquisition, the Borough will develop a FEMA grant application to obtain funding to implement the project.
Estimated Cost:	High
Potential Funding Sources:	Borough Budget, FEMA FMA and HMGP
Implementation Timeline:	Within 5 years
Goals Met:	1,2,3,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

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

7. TOWNSHIP OF LITTLE FALLS

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

7.1 HAZARD MITIGATION PLANNING TEAM

The Township of Little Falls 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 Building Department and Office of Emergency Management represented the community on the Passaic 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 7-1 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 7-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: James DiMaria, Construction Official Address: 225 Main Street, Little Falls, NJ 07424 Phone Number: 972-256-6182 Email: jdimaria@littlefallsnj.gov	Name/Title: Sgt. John Moncato, Office of Emergency Management Coordinator Address: 225 Main Street, Little Falls, NJ 07424 Phone Number: 973-332-8157 Email: jmoncato@littlefallspd.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: James DiMaria, Construction Official Address: 225 Main Street, Little Falls, NJ 07424 Phone Number: 972-256-6182 Email: jdimaria@littlefallsnj.gov	
Additional Contributors	
Name/Title: James DiMaria, Construction Official M Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop.	
Name/Title: John Moncato, Coordinator, Office of Emergency Management Method of Participation: Participated in Planning Partnership; Provided updated information for hazard event history, capability assessment, NFIP, mitigation action status and building permits and new development.	
Name/Title: Bryan Prall, Chief, Police Department Method of Participation: Attended Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Daniel Gianduso, (Former) Coordinator, Office of Emergency Management Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff; Provided updated information for hazard event history, capability assessment, NFIP, mitigation action status and building permits and new development.	
Name/Title: Jason Presing Method of Participation: Attended Risk Assessment/Mitigation Strategy Workshop.	
Name/Title: Ron Campbell Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Vince Quatrone, Assistant Administrator Method of Participation: Attended Risk Assessment/Mitigation Strategy Workshop.	
Name/Title: Michael Bandurski, Method of Participation: Attended Risk Assessment/Mitigation Strategy Workshop.	

7.2 COMMUNITY PROFILE

7.2.1 Brief History

Little Falls can trace its heritage back to 1711.The Township of Little Falls is named for the Passaic River waterfall that formerly spilled downstream from the dam in front of the Beattie Mill.

7.2.2 Location

According to the U.S. Census Bureau, the Township has a total land area of 2.81 square miles, of which 2.735 square miles is land and 0.075 square miles is water. Little Falls is positioned at 40.87° North (latitude) and 74.21° West (longitude). The Township is bounded by the communities of Montclair, Wayne, Cedar Grove, Woodland Park, Totowa, North Caldwell, Fairfield and Clifton.

7.2.3 Governing Body Format

Starting January 1, 2005, the form of government was changed as the result of a public referendum. The current government is a Mayor/Council form authorized by the New Jersey Faulkner Act. Under the new government, the voters directly elect a Mayor to a four-year term. The Mayor is responsible for the administration of the Township. The Township Council members, who are elected to four-year staggered terms, perform the legislative duties of the Township.

7.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Little Falls was 13,360, a 7.7 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 2020 U.S. Census indicates that 3.3 percent of the population is 5 years of

age or younger, 15.4 percent is 65 years of age or older, 4.2 percent is non-English speaking, 3.2 percent is below the poverty threshold, and 7.5 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

7.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

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

7.3.1 Planning and Regulatory Capability and Integration

Table 7-2 summarizes the planning and regulatory tools that are available to Little Falls.

Table 7-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2021, NJAC 5:24-3.; Chapter 46 Construction Codes, Uniform	State and Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? There is hereby established in the Township of Little Falls a State Uniform Construction Code enforcing agency to be known as the Little Falls Enforcing Agency, consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official, Elevator Subcode Official, and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.				
Zoning/Land Use Code	Yes	State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Chapter 280 - Zoning	Local	Zoning Officer
How has or will this be integrated with the HMP and how does this reduce risk? Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.				
Subdivision Code	Yes	Chapter 109 Land Use Procedures, Article V - Subdivisions	Local	Zoning Officer
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this article is to provide for the regulation of land subdivision in the Township and to establish rules, regulations and standards governing such land subdivision in order to promote the public health, safety, convenience and general welfare of the Township. It shall be administered to ensure orderly growth and development, conservation, protection and proper use of land and adequate provision for circulation, utilities and service.				
Site Plan Code	Yes	Chapter 109 Land Use Procedures, Articles 30-39 – Site Plan Review	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? No building or structure shall be erected, altered or expanded on any lot in any district requiring site plan approval, or any land put to a nonresidential use, and no building permit or sanitary permit shall be issued in connection with any use of such lot, except in accordance with all the regulations of this article and in accordance with the site plan for such lot reviewed by the Planning Board in light of the standards set forth in this chapter.				
Stormwater Management Code	Yes	Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 218 – Stormwater Management; Chapter 216 – Storm Sewer System (Separate) Ordinance	Local	Construction Code Official
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 216: Prohibits spilling, dumping, or disposal of materials in the stormwater system. Prohibits illicit connections and sets requirements for retrofitting of storm drain inlets. • Chapter 218: The purpose of this chapter is to establish minimum stormwater management requirements and controls for major development				

	Jurisdiction has this?	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
Post-Disaster Recovery/ Reconstruction Code	Yes	Chapter 280, Article 207 – Reconstruction of Damaged Buildings	Local	Construction Code Official

How has or will this be integrated with the HMP and how does this reduce risk?
A structure constituting or containing a nonconforming use shall not be enlarged, extended or structurally altered, or repaired if damaged by any casualty to an extent exceeding 50% of the assessed value of such structure at the time of damage, except for a conforming use. If any nonconforming building used as a single-family dwelling is destroyed or damaged to an extent exceeding 50% of its true value, the same may be reconstructed within one year after such destruction or damage so as to occupy the same space that it occupied prior to such destruction or damage.

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Title 7 of the NJ Municipal Administrative Code; Chapter 126 - Littering; Chapter 72 - Fertilizer	Local	Construction Code Official
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 126: The purpose of this article is to prohibit the spilling, dumping or disposal of materials other than stormwater to the municipal separate storm sewer system (MS4) operated by the Township of Little Falls, and/or natural waterways so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply. • Chapter 72: It is the purpose of this chapter to regulate the outdoor application of fertilizer to reduce the overall amount of excess nutrients entering waterways, thereby helping to protect and improve surface water quality.				
Flood Damage Prevention Ordinance	Yes	Chapter 86 – Flood Damage Prevention	Local	Construction Code Official
How has or will this be integrated with the HMP and how does this reduce risk? Administered by the Construction Code Official. The Flood Damage Prevention Ordinance (Chapter 86 of the municipal code) was adopted 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 protect human life and health; • To minimize expenditure of public money for costly flood control projects; • To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; • To minimize prolonged business interruptions; • To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; • To 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; • To ensure that potential buyers are notified that property is in an area of special flood hazard; and • To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. latest model code coordinated ordinance from NJDEP adopted 12/16/2024				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	Yes	Chapter 65 – Emergency Management	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? Establishes the Emergency Management Coordinator, Deputy Coordinator, Emergency Management Council, and their duties. Administered by Emergency Management.				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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/Master Plan	Yes	Little Falls New Jersey Master Plan 2024	Local	Planner

How has or will this be integrated with the HMP and how does this reduce risk?
The 2024 Master Plan includes the following goals and corresponding objectives related to hazard mitigation:

- Land Use Element Goal #6: Promote measures that allow the Township to be more resilient and able to lessen potential damage from current and future extreme weather events.
  - Support increased integration of municipal/ county hazard mitigation planning and floodplain management with effective municipal zoning regulation, subdivision regulation, and comprehensive planning.
  - Maintain and enhance local regulatory standards including full and effective building code enforcement, floodplain management, and other vulnerability reducing regulations.
  - Continue implementing programs and pursuing grants and funding programs to acquire/mitigate properties in flood prone areas.
  - Limit development in flood plains according to new Federal Emergency Management Agency (FEMA) regulations and flood elevations.
- Sustainability Element Goal #2: Improve the Township's resiliency and sustainability.
  - Encourage the utilization of green stormwater infrastructure.
  - Continue to address challenges to flood prone properties.
  - Work with state and federal partners to implement flood protection infrastructure.

Capital Improvement Plan	Yes	Little Falls New Jersey Master Plan 2024	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
Per NJSA 40:55D-29 the governing body is authorized to direct the planning board to prepare a CIP with at least a six-year planning horizon. Capital Improvements are identified annually and administered by Administration.

Disaster Debris Management Plan	No	-	-	-

How has or will this be integrated with the HMP and how does this reduce risk?
N/A

Floodplain Management or Watershed Plan	Yes	2020 Passaic County Hazard Mitigation Plan	Local	Office of Emergency Management

How has or will this be integrated with the HMP and how does this reduce risk?
The Township of Little Falls receives CRS Activity 510 credit for the County HMP as its floodplain management plan.

Stormwater Management Plan	Yes	NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.)	Local	Engineering Department

How has or will this be integrated with the HMP and how does this reduce risk?
The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004, and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).

Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan (SPPP), 2018	Local	Department of Public Works

How has or will this be integrated with the HMP and how does this reduce risk?
Outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.

	Jurisdiction has this?	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
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	Yes	Little Falls New Jersey Master Plan 2024: Economic Development Element	Yes	Borough Administrator
How has or will this be integrated with the HMP and how does this reduce risk? The 2024 Master Plan contains an Economic Development Element that provides an overview of Little Falls' economy and economic development potential. It looks at various aspects including the labor force, employment trends, the retail and service base and identifies existing state and local resources that are available to the Township. This Element discusses the opportunities and constraints that exist in order to address the Township's economic development challenges. The Element concludes with recommended goals and strategies that may be implemented to capitalize on the Township's strengths and address any economic issues and concerns.				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	Yes	Little Falls New Jersey Master Plan 2024: Circulation Element	Local	Borough Administrator
How has or will this be integrated with the HMP and how does this reduce risk? The Circulation Element of the Master Plan inventories Little Fall's transportation assets, identifies potential strategies and opportunities for the system, and advances strategies to enhance the community's transportation network while recognizing the connection between transportation, land use, and economic development.				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Township of Little Falls Comprehensive Emergency Management Plan	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years. February 2019. The Emergency Management Plan is administered by OEM.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

7.3.2 Development and Permitting Capability

Table 7-3 summarizes the capabilities of Little Falls to oversee and track development.

Table 7-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Planning and Engineering Departments
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	The Township has GIS based software and the tax assessor's records have SFHA information.
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	Redevelopment areas have been identified. The Township has an approved Housing Element and Fair Share Plan that prepared a vacant land analysis identifying all areas that could support AH, both 100% and inclusionary, residential development.
Describe the level of buildout in your jurisdiction.	N/A	-

7.3.3 Administrative and Technical Capability

Table 7-4 summarizes potential staff and personnel resources available to Little Falls and their current responsibilities that contribute to hazard mitigation.

Table 7-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning Board is responsible for the Master Plan, granting variances, and administering site plan and subdivision control, review, and approval.
Zoning Board of Adjustment	Yes	Combined Board
Planning Department	No	-
Mitigation Planning Committee	Yes	OEM
Environmental Board/Commission	Yes	The Little Falls Shade Tree Commission has the responsibility for the regulation, planting and care of shade and ornamental trees and shrubbery located on public property. This commission will help sustain healthy populations of trees by planting new trees as well as pursuing the removal and replacement of all damaged, dead, hazardous, or diseased trees, and the pruning of existing trees to foster their health and longevity. The Commission works with the Department of Public Works as well as assisting the Planning Board and/or Building Department in an advisory capacity when applications involve the preservation and inventory of trees.
Open Space Board/Committee	Yes	Administrator
Economic Development Commission/Committee	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Public Works/Highway Department	Yes	The Department of Public Works (DPW) is responsible for constructing and maintaining much of the Township's vital systems of roads, streets, bridges, storm sewers, sanitary sewers and the many related components.
Construction/Building/Code Enforcement Department	Yes	Building Department
Emergency Management/Public Safety Department	Yes	Emergency Management, Fire Department and Police Department The Municipal Emergency Management Coordinator shall be responsible for the planning, activating, coordinating and the conduct of emergency management operations within the municipality.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	See Department of Public Works
Mutual aid agreements	Yes	Fire/Police/Office of Emergency Management
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Contract with H2M
Engineers or professionals trained in building or infrastructure construction practices	Yes	Contract with Boswell Engineering
Planners or engineers with an understanding of natural hazards	Yes	Contract with Aliamo Engineering
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	Yes	Third Party
Staff that work with socially vulnerable populations or underserved communities	Yes	Health Department
Environmental scientists familiar with natural hazards	No	-
Surveyors	No	-
Emergency manager	Yes	Office of Emergency Management
Grant writers	Yes	Millenium
Resilience Officer	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

7.3.4 Fiscal Capability

Table 7-5 summarizes financial resources available to Little Falls.

Table 7-5. Fiscal Capabilities

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

7.3.5 Education and Outreach Capability

Table 7-6 summarizes the education and outreach resources available to Little Falls.

7.3.6 Community Classifications

Table 7-7 summarizes classifications for community programs available to Little Falls.

Table 7-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Numerous Public Information Officers per Department
Personnel skilled or trained in website development	Yes	Under contract
Hazard mitigation information available on your website	Yes	Flood Information page
Social media for hazard mitigation education and outreach	Yes	Facebook, Instagram, Twitter
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Flood Board, Open Space Committee
Warning systems for hazard events	Yes	RAVE, CodeRED, Nixle, social media, email blast, mobile electronic signs, website
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	The mission of the Little Falls Municipal Alliance is to identify and address community health needs through awareness, education, communication, collaborations, and sharing of resources.
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	RAVE, CodeRED, Nixle, social media, email blast, mobile electronic signs, website

Table 7-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	Yes	5	October 1 2020, recertification underway
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	2025
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	3	2014
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

7.3.7 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 7-8 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 7-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

7.4 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 7-1 is responsible for maintaining this information.

7.4.1 NFIP Statistics

Table 7-9 summarizes the NFIP policy and claim statistics for Little Falls.

Table 7-9. Little Falls NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**1,408**
Total Loss Payments	**$35,368,159**
# Repetitive Loss Properties (NFIP definition)	**144**
# Repetitive Loss Properties (FMA definition)	**4**
# Severe Repetitive Loss Properties (NFIP definition)	**85**
# Severe Repetitive Loss Properties (FMA definition)	**148**

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: NJOEM 2024

7.4.2 Flood Vulnerability Summary

Table 7-10 provides a summary of the NFIP program in Little Falls.

Table 7-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Neighborhoods adjoining the Passaic and Peckman River
Do you maintain a list of properties that have been damaged by flooding?	Yes
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
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Use the Guidebook and Ordinance
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	1 property
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	Estimated 144
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?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	No
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)	Permits / Mapping / Outreach / Enforcement
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Use the guidebook and ordinance
What are the barriers to running an effective NFIP program in the community, if any?	Cost and time
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	No

NFIP Topic	Comments
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	2024
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 86
What is the date that your flood damage prevention ordinance was last amended?	Adopted 12/16/2024
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Exceeds
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Class 5

7.5 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 7-11 through Table 7-13.

Table 7-11. 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
2020				
Total Permits	7	2	2	11
Permits within SFHA	0	0	0	0
2021				
Total Permits	54	0	0	54
Permits within SFHA	0	0	0	0
2022				
Total Permits	67	3	0	70
Permits within SFHA	0	0	0	0
2023				
Total Permits	2	2	0	4
Permits within SFHA	0	0	0	0

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

Table 7-12. Recent Major Development and Infrastructure from 2017 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
Citizens Building	Residential	185	405 Main St	N/A	Apartments Complete
The Parke	Residential	102	Harvest Way	N/A	Townhouses Complete
Krystall Falls	Residential	24	135 Stevens Ave	N/A	Apartments Complete
The Falls	Residential	50	215 Nwk Pmt Turnpike	N/A	Apartments Under Construction
The Manor at Little Falls	Residential	70	115 Main St	N/A	Apartments Under Construction
The Abbe	Residential	50	137 Center Ave	N/A	Townhouses Complete

** Only location-specific hazard zones or vulnerabilities identified.*

Table 7-13. 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
None reported.					

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

7.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Township are shown in Figure 7-1 through Figure 7-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Little Falls has significant exposure. The maps show the location of potential new development, where available.

Figure 7-1. Little Falls Hazard Area Extent and Location Map 1

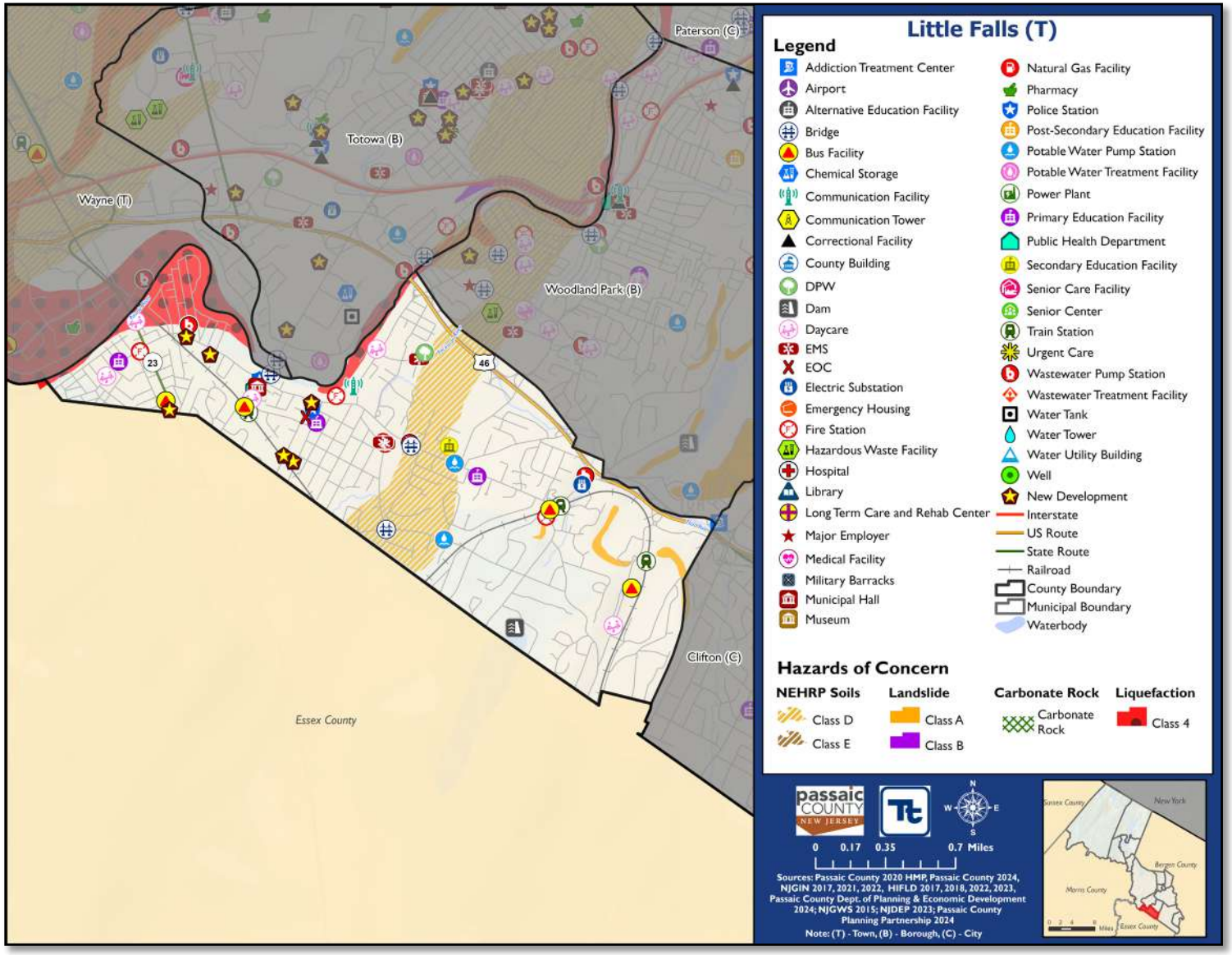
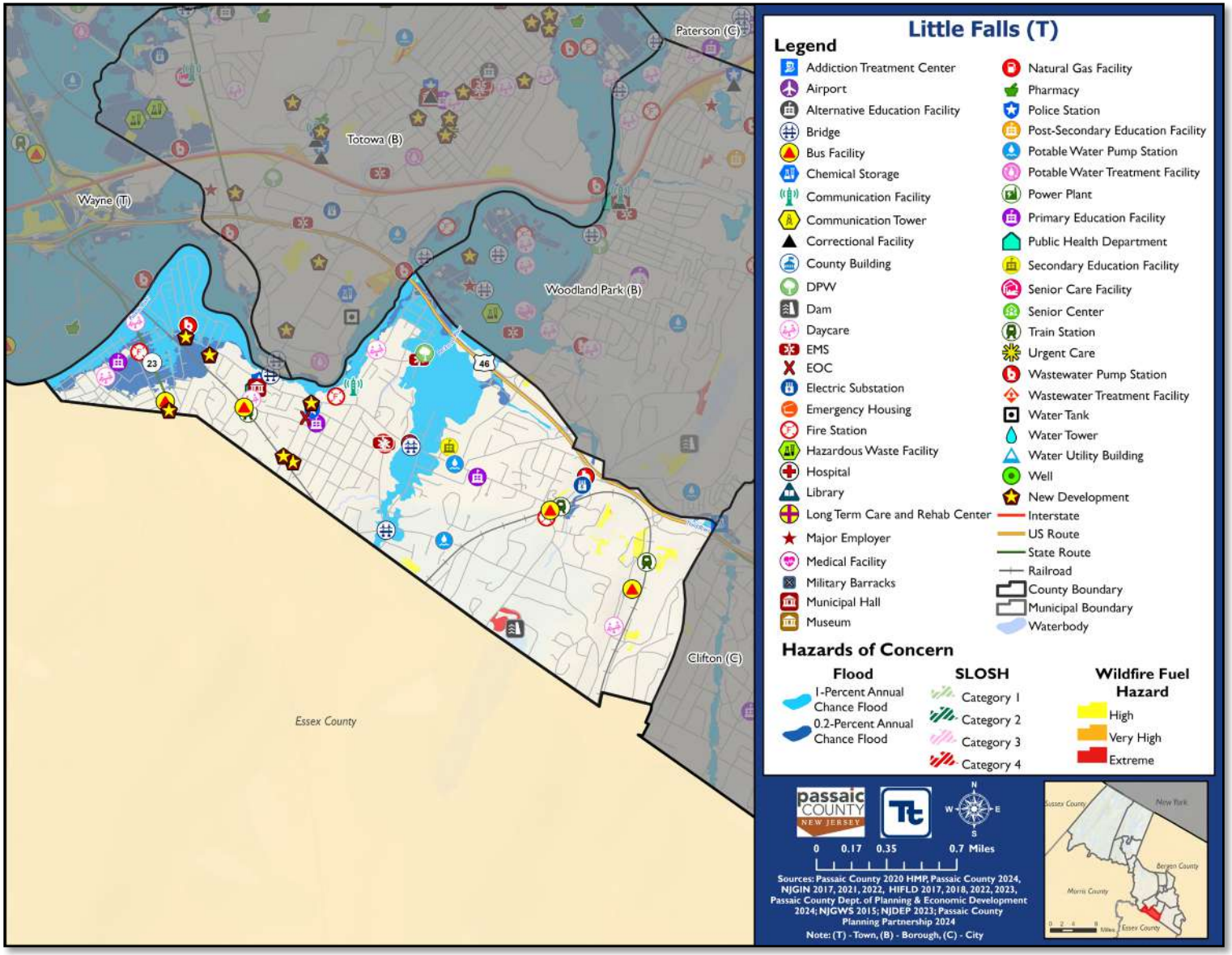


Figure 7-2. Little Falls Hazard Area Extent and Location Map 2



7.6.2 Hazard Event History

The history of natural and non-natural hazard events in Little Falls is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 7-14 provides details on loss and damage in Little Falls during hazard events since the last hazard mitigation plan update.

Table 7-14. Hazard Event History in Little Falls

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Little Falls
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Township followed State guidance on business closures and social distancing. The police department maintained continuous operation utilizing limited manpower on each shift while other personnel were on standby. All equipment, Police HQ and each fire company were sanitized daily.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	The Township experienced flash flooding specifically on Harrison St, Cedar Grove Rd, East Main St, Madison Ave, Jackson St and Willow Ave. Police Dept handled various calls of service in an approximate 24-hour period during the Hurricane which included but not limited to Activated alarms, disabled motor vehicles, and roadway obstructions. Rt 46 East was compromised due to flash flooding from the Peckman River. NJDOT assisted with cleanup along these routes. PC Road Department was also notified for the County Roads. Fire Dept provided immediate service including rescue operations at several residences. American Red Cross was notified during recovery operations.

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Little Falls
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	The Township of Little Falls EOC was activated. OEM was activated to provide resources from outside entities including Woodland Park, Totowa, Prospect Park, Montclair State University PD, PC Sheriff's Department, PCOEM, North Haledon, and NJSP. Little Falls CERT was activated and aided at the Shelter (Little Falls Civic Center) for any displaced families. Little Falls PD assisted with providing early warning to the residents, assisted with all road closures positioning at the top of each affected street in the flooded area by providing around-the-clock security. Little Falls FD also provided early warning notification to the residents and later conducted swift water rescue operations with the assistance from Little Falls PD and PCSD. Little Falls DPW provided barricades, maintained each pump station, handled cleanup operations of each street and later removed all damaged items removed by the residents during cleanup. American Red Cross was notified to aid during and immediately after to restore the area by providing cleaning supplies during the recovery stage.

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Little Falls
January 11-15, 2024	Flood	Yes	Second flooding incident occurred due to the original issues resulting from over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	The Township of Little Falls EOC was activated. OEM was activated to provide resources from outside entities including Woodland Park, Totowa, Prospect Park, Montclair State University PD, PC Sheriff's Department, PCOEM, and NJSP. Little Falls CERT was activated and aided at the Shelter (Little Falls Civic Center) for any displaced families. Little Falls PD assisted with providing early warning to the residents, assisted with all road closures positioning at the top of each affected street in the flooded area by providing around-the-clock security. Little Falls FD also provided early warning notification to the residents and later conducted swift water rescue operations with the assistance from Little Falls PD and PCSD. Little Falls DPW provided barricades, maintained each pump station, handled cleanup operations of each street and later removed all damaged items removed by the residents during cleanup. American Red Cross was notified to aid during and immediately after to restore the area by providing cleaning supplies during the recovery stage.

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

7.6.3 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 Little Falls.

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. Little Falls 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 following:

- During extreme temperature events, the Township identified cooling centers as a strength and outreach efforts as an obstacle.

- The Township identified experience, training, and equipment as strengths; personnel and specialized equipment as weaknesses; and infrastructure and access as obstacles during flood and severe weather events. As a result, the ranking for Severe Weather was updated from Medium to High.
- For severe winter weather events, the Township identified their equipment as a strength. However, they noted personnel shortages as a weakness, and elevation and funding challenges as significant obstacles. As a result, the ranking for Severe Winter Weather was updated from Medium to High.
- During wildfire events, the Township identified training and equipment as weaknesses.

Table 7-15 shows Little Falls' final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 7-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	High
Severe Winter Weather	High
Wildfire	Low

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 7-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 7-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600133	Bridge	Yes	Yes
Little Falls Division of Fire Company 3	Fire Station	No	Yes
Little Falls DPW	DPW	No	Yes
Little Falls EMS	EMS	Yes	Yes
Little Falls Signac Pump Station	Wastewater Pump Station	Yes	Yes
Little Falls Sindle Ave. Pump Station	Wastewater Pump Station	No	Yes
Monarch Montessori School	Daycare	Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

In addition to critical facilities that are exposed to flooding, the Township of Little Falls contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

7.6.4 Identified Issues

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

- Flood-prone properties are at significant risk for future damages due to recurring flood events.
- Shoals within the river create erosional points on adjacent banks, leading to increased erosion and instability.
- Residents lack sufficient understanding of natural hazard areas, which impacts their preparedness and response to such events.
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- Stream gauges in the Township lag in reporting of current flood conditions. This prevents proper response to events.
- Heavy rainfall causes the Peckman River to overflow its banks, leading to flooding.
- The Fairfield Pump Station is located in the 100-year floodplain and needs to be upgraded.
- The NJ State Police Laboratory is located in the 100-year floodplain.
- The Township lacks a dedicated fund to provide the necessary match for federal mitigation grants.
- 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: *
  - 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.

  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.
- 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.*

- During wildfire events, the Township identified weaknesses in training and equipment, which hinder effective response and mitigation efforts.*
- The Township has strong equipment for severe winter weather events but faces personnel shortages, elevation challenges, and funding obstacles.*
- During flood events, the Township identified experience, training, and equipment as strengths. However, personnel shortages and lack of specialized equipment were noted as weaknesses, and infrastructure and access were significant obstacles.*
- The Town currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about storm mitigation, preparation, response, and recovery. Additionally, while the Town has identified cooling centers as a strength during extreme temperature events, outreach remains a significant weakness.*

* This issue was identified as a specific area of concern based on resident response to the Passaic County Hazard Mitigation Strengths, Weaknesses, Obstacles, and Opportunities (SWOO) worksheet.

7.7 MITIGATION STRATEGY AND PRIORITIZATION

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

7.7.1 Past Mitigation Action Status

Table 7-17 indicates progress on the Township's mitigation strategy identified in the 2020 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.

7.7.2 Additional Mitigation Efforts

The Township of Little Falls did not identify additional mitigation actions completed since the last HMP.

Table 7-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Little Falls-001	Support the mitigation of vulnerable structures via retrofit	Flood, Severe Weather, Severe Winter Weather	Floodplain Administrator	Flood prone properties are at risk for future damages. Acquire and demolish flood prone properties.	1.Ongoing Capability 2. The Township continues to perform outreach to flood prone property owners to acquire properties.	1.Include in 2024 HMP 2.Keep as is 3. N/A
2020-Little Falls-002	Remove shoals within river	Flood, Severe Weather, Severe Winter Weather	Engineering	Shoals create erosional points on adjacent banks. Remove shoals within river to prevent erosion	1. In Progress 2. Manipulated shoals but not removed.	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable
2020-Little Falls-003	Cedar Grove Road embankment wall	Flood, Severe Weather, Severe Winter Weather	Engineering	Embankment in need of replacement and upgrade. Upgrade and improvement of embankment wall located along Cedar Grove Road	1. Complete	1. Discontinue 2. Not Applicable 3. This action is complete

Project Number	Project Name	Hazards 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.
2020-Little Falls-004	Backup power for the Town Hall	All Hazards: Coastal Storm,	Town Administrator	Municipal Building/Town Clerk lacks backup power. Purchase and install backup generator for the Municipal Building/ Town Clerk	1. In progress 2. The Township is actively working on the specifications and sizing for backup generator to ensure reliable power for the critical facility identified. This initiative aims to enhance the resilience and preparedness of our community.	1.Include in 2024 HMP 2.Keep as is 3. N/A
2020-Little Falls-005	Police Department equipment	Coastal Storm,	Office of Emergency Management	Police Department is in need of additional equipment to respond to hazard events. Obtain needed equipment for Police Department. Specifically identified a trailer containing detour signs and other traffic diversion equipment.	1. Complete 2. Police Department Purchased	1. Discontinue 2. Not Applicable 3. This action is complete

Project Number	Project Name	Hazards 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.
2020-Little Falls-006	Inundation mapping and highwater mark signs.	Dam Failure, Disease Outbreak, Drought, Earthquake, Extreme Temperature, Flood, Geological, Hazardous Substances, Infestation, Severe Weather, Severe Winter Weather, Wildfire	Public Works	Residents need additional understanding of natural hazard areas. Improve understanding of natural hazards and hazard areas (compiling and archiving flood loss information, record high-water marks after major events, install high-water mark monuments to promote flood awareness).	1.In Progress 2. Depth gauge, sign for streams	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable
2020-Little Falls-007	Debris Management Plan	Coastal Storm, Flood, Severe Weather, Severe Winter Weather	Public Works	A debris management plan is needed. Develop a Debris Management Plan	1. In Progress 2. Use County for dumpster removal	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Little Falls-008	Update Flood Damage Prevention Ordinance	Flood	Floodplain Administrator	The Flood Damage Prevention Ordinance could be stronger. The Township will update the ordinance to include cumulative substantial damages and 2 feet of freeboard.	1. Complete 2. To be adopted as early as January 2025	1.Discontinue 2. Not Applicable 3. Will be adopted as early as January 2025
2020-Little Falls-009	Flood Cameras	Flood	Police Department	Stream gauges in the Township lag in reporting of current conditions. This prevents proper response to events. The Township will provide cameras on the Franciso Bridge, E. Man Street, and Route 46 East and West Bridge and connect the live footage to the Police headquarters and the Township website.	1. In Progress 2. Still looking for funding	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Little Falls-010	Peckman River Flood Tunnel	Flood	USACE	Heavy rainfall results in the Peckman River overflowing its banks. The USACE will construct a double box diversion culvert, or tunnel structure to be built under roadways to divert floodwater from the Peckman River into the Passaic River.	1. In Progress 2. Currently in the design phase	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable
2020-Little Falls-011	Upgrade Fairfield Pump Station	Flood	Engineering	The Fairfield Pump Station is located in the 100-year floodplain and needs to be upgraded. The Township will upgrade the Fairfield Pump Station from a 10,000 GPM to a 25,000 GPM and elevate the facility.	1. No Progress 2. Still awaiting funding	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Little Falls-012	Conduct outreach to NJ State Police Laboratory	Flood	Floodplain Administrator	The NJ State Police Laboratory is located in the 100-year floodplain. The FPA will contact the facility manager and discuss options for mitigating the facility.	1. Ongoing Capability 2. Outreach is still ongoing to evaluate mitigation alternatives, delays have occurred due to impacted capacity for FPA.	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable
2020-Little Falls-013	Mitigation fund	Coastal Storm, Dam Failure, Disease Outbreak, Drought, Earthquake, Extreme Temperature, Flood, Geological, Hazardous Substances, Infestation, Severe Weather, Severe Winter Weather, Wildfire	Town Administrator	The Township needs a fund to provide match for federal mitigation grants. Start a mitigation fund in the town to support mitigation initiatives (including the 25% local share of federal grants).	1.Ongoing Capability 2. This project has been delayed due to limited funding alternatives and capacity implementation for this project.	1. Include in 2024 HMP 2. Keep as is 3. Not Applicable

7.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Little Falls 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 Little Falls 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 7-18 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 7-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 7-18. 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
Drought	X			X	X		X			X
Extreme Temperature	X			X	X		X			X
Flood	X	X	X	X	X	X	X	X	X	X
Geological Hazards	X			X	X		X			X
Severe Weather	X	X	X	X	X	X	X	X	X	X
Severe Winter Weather	X	X	X	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 7-19. 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-LittleFallsTwp-001	Flood-Prone Properties	1	1	1	1	1	0	1	0	1	1	1	1	1	0	**10**	High
2025-LittleFallsTwp-002	Remove Shoals within River	1	1	1	1	1	0	1	1	1	1	1	1	0	0	**11**	High
2025-LittleFallsTwp-003	Enhancing Resident Understanding of Natural Hazard Areas	1	1	1	1	1	1	1	1	1	1	1	1	0	1	**13**	High
2025-LittleFallsTwp-004	Debris Management Plan	0	1	1	1	1	1	1	0	1	1	1	1	0	0	**10**	High
2025-LittleFallsTwp-005	Flood Cameras	1	1	1	1	1	0	0	1	1	0	1	1	1	0	**10**	High
2025-LittleFallsTwp-006	Peckman River Flood Tunnel	1	1	1	1	1	0	1	0	1	0	1	1	0	0	**9**	Medium
2025-LittleFallsTwp-007	Upgrade Fairfield Pump Station	0	1	1	1	1	0	1	0	1	0	1	1	1	0	**9**	Medium
2025-LittleFallsTwp-008	Conduct Outreach to NJ State Police Laboratory	1	1	1	1	1	1	0	0	1	0	1	1	1	1	**11**	High
2025-LittleFallsTwp-009	Mitigation Fund	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2025-LittleFallsTwp-010	Substantial Damage Management Plan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2025-LittleFallsTwp-011	Update the Flood Damage Prevention Ordinance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**	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-LittleFallsTwp-012	Enhancing Wildfire Training and Equipment	1	1	1	1	1	0	0	1	1	0	1	1	1	0	**10**	Medium
2025-LittleFallsTwp-013	Personnel Shortages	0	0	1	1	1	0	0	0	1	1	1	1	0	0	**7**	Medium
2025-LittleFallsTwp-014	Enhancing Flood Response Capabilities	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High
2025-LittleFallsTwp-015	Outreach	1	1	1	1	1	0	0	1	1	0	1	1	0	1	**10**	Medium

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-LittleFallsTwp-001. Flood-Prone Properties

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Town Administrator, Homeowners
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	Flood-prone properties are at significant risk for future damages due to recurring flood events.
Description of the Solution:	The Floodplain Administration will establish an inventory system to identify properties damaged by flood events and take proactive measures to acquire and demolish these flood-prone properties.
Estimated Cost:	High
Potential Funding Sources:	HMGP, FMA
Implementation Timeline:	1-5 years
Goals Met:	1,2,7
Benefits:	Acquiring and demolishing flood-prone properties will reduce the risk of future flood damage, protecting lives and property.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations, who often reside in flood-prone areas, will benefit from reduced exposure to flood risks.
Impact on Future Development:	Removing flood-prone properties can make way for more resilient infrastructure and development projects.
Impact on Critical Facilities/Lifelines:	Ensuring critical facilities are not located in flood-prone areas will maintain their functionality during flood events.
Impact on Capabilities:	Reducing the number of flood-prone properties will improve the community's overall disaster response capabilities.
Climate Change Considerations:	Proactively addressing flood-prone properties aligns with climate change adaptation strategies, preparing the community for increased flood risks due to changing weather patterns.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-LittleFallsTwp-002. Remove Shoals within River

Lead Agency:	Township Engineering
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	Shoals within the river create erosional points on adjacent banks, leading to increased erosion and instability.
Description of the Solution:	Remove shoals within the river to prevent erosion and stabilize adjacent banks.
Estimated Cost:	Medium
Potential Funding Sources:	USACE, Township budget
Implementation Timeline:	1-5 years
Goals Met:	8
Benefits:	Removing shoals will decrease erosional pressure on riverbanks, leading to more stable and resilient banks.
Impact on Socially Vulnerable Populations:	Reducing erosion can prevent property damage and loss, particularly benefiting socially vulnerable populations living near the river.
Impact on Future Development:	Stabilized banks can support sustainable development projects along the river, reducing the risk of erosion-related damage.
Impact on Critical Facilities/Lifelines:	Ensuring riverbanks are stable can protect critical infrastructure located near the river from erosion-related damage.
Impact on Capabilities:	Stabilizing riverbanks will improve the community's ability to respond to and recover from erosion-related incidents.
Climate Change Considerations:	Removing shoals aligns with climate change adaptation strategies, preparing the community for increased erosion risks due to changing weather patterns.
Mitigation Category	Structure and Infrastructure Project, Natural Systems Protection
CRS Category	Preventative Measures, Natural Resource Protection, Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Vegetative Planting	Time consuming, less effective
Channelization	Ecological disruption

Action 2025-LittleFallsTwp-003. Enhancing Resident Understanding of Natural Hazard Areas

Lead Agency:	Public Works
Supporting Agencies:	Office of Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Residents lack sufficient understanding of natural hazard areas, which impacts their preparedness and response to such events.
Description of the Solution:	Enhance residents' awareness and understanding of natural hazards and hazard areas through the following measures: • **Compile and Archive Flood Loss Information**: Gather detailed records of flood damage and impacts and create a publicly accessible archive for residents to review. • **Record High-Water Marks After Major Events**: Document the highest water levels reached during significant flood events and use these records to create visual aids. • **Install High-Water Mark Monuments**: Erect permanent monuments at key locations to indicate historical high-water marks, accompanied by informational plaques to promote flood awareness.
Estimated Cost:	Medium
Potential Funding Sources:	Township Budget
Implementation Timeline:	1-5 years
Goals Met:	3,4,5,7
Benefits:	Residents will have a clearer understanding of the risks associated with natural hazards, leading to better preparedness.
Impact on Socially Vulnerable Populations:	Special efforts can be made to ensure socially vulnerable populations have access to this information, helping them better prepare for natural hazards.
Impact on Future Development:	Developers and planners can use the archived flood loss information and high-water mark data to make informed decisions about future projects.
Impact on Critical Facilities/Lifelines:	Critical facilities can use this information to enhance their flood preparedness and ensure continuity of operations during hazard events.
Impact on Capabilities:	The community's overall ability to respond to and recover from natural hazards will be strengthened through improved understanding and preparedness.
Climate Change Considerations:	Understanding historical flood data and high-water marks can inform climate change adaptation strategies, preparing the community for increased hazard risks.
Mitigation Category	Local Plans and Regulations, Education and Awareness Programs
CRS Category	Preventative Measures, Public Information
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Distributing Informational Pamphlets	Limited reach, low engagement
Creating an online informational portal	Not all residents have access to the internet

Action 2025-LittleFallsTwp-004. Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	-
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-LittleFallsTwp-005. Flood Cameras

Lead Agency:	Police Department
Supporting Agencies:	Public Works, OEM
Hazard(s) of Concern:	Flood
Description of the Problem:	Stream gauges in the Township lag in reporting of current flood conditions. This prevents proper response to events.
Description of the Solution:	The Township will provide flood cameras on the Franciso Bridge, E. Man Street, and Route 46 East and West Bridge and connect the live footage to the Police headquarters and the Township website.
Estimated Cost:	Low
Potential Funding Sources:	Township budget, FMA, HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6,7,8
Benefits:	Flood cameras provide continuous, real-time footage of flood-prone areas, allowing for immediate assessment and response.
Impact on Socially Vulnerable Populations:	Vulnerable populations, who often live in high-risk areas, will benefit from timely warnings and better-prepared emergency responses.
Impact on Future Development:	Data from flood cameras can guide future development, ensuring that new projects are designed with flood risks in mind.
Impact on Critical Facilities/Lifelines:	Real-time monitoring helps protect critical facilities by providing early warnings, allowing for timely protective measures.
Impact on Capabilities:	Flood cameras improve the Township's ability to respond to flood events quickly and effectively, enhancing overall disaster management capabilities
Climate Change Considerations:	As climate change leads to more frequent and severe flooding, flood cameras provide a crucial tool for adapting to these changes.
Mitigation Category	Local Plans and Regulations, Education and Awareness Programs
CRS Category	Emergency Services, Public Information
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Installing Additional Stream Gauges	Lag in reporting
Deploying Unmanned Aerial Vehicles	Operational limitations, Weather dependency

Action 2025-LittleFallsTwp-006. Peckman River Flood Tunnel

Lead Agency:	USACE
Supporting Agencies:	-
Hazard(s) of Concern:	Flood
Description of the Problem:	Heavy rainfall causes the Peckman River to overflow its banks, leading to flooding.
Description of the Solution:	The U.S. Army Corps of Engineers (USACE) will design and construct a double box diversion culvert or tunnel structure beneath roadways to divert floodwater from the Peckman River into the Passaic River. This project is currently in the design phase.
Estimated Cost:	High
Potential Funding Sources:	USACE, HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,7,8
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	• Transportation routes are more likely to remain open • Evacuation routes will remain intact. • Access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.
Impact on Capabilities:	Identifying the culverts that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Structural Project
Priority	Medium

Alternatives:

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

Action 2025-LittleFallsTwp-007. Upgrade Fairfield Pump Station

Lead Agency:	Engineering
Supporting Agencies:	-
Hazard(s) of Concern:	Flood
Description of the Problem:	The Fairfield Pump Station is located in the 100-year floodplain and needs to be upgraded.
Description of the Solution:	The Township Engineering will upgrade the Fairfield Pump Station from a 10,000 GPM to a 25,000 GPM and elevate the facility.
Estimated Cost:	Medium
Potential Funding Sources:	Township Budget, HMGP, FMA
Implementation Timeline:	2,5
Goals Met:	1-5 years
Benefits:	• Reduced risk of flooding and resulting damage to facilities. • Less risk of interruption to potable water services.
Impact on Socially Vulnerable Populations:	Vulnerable areas that may otherwise experience a loss of water during heavy rain or flooding will be more likely to retain services.
Impact on Future Development:	Communities with sound and resilient infrastructure encourage commercial and residential development.
Impact on Critical Facilities/Lifelines:	Hydration lifeline is more likely to remain intact.
Impact on Capabilities:	Maintaining operational water services reduces recovery time and costs.
Climate Change Considerations:	Consideration should be taken regarding the increase in heavy rain and flood events as a result of climate change.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Structural Flood Control Projects
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Installing Additional Pumps	Space constraints
Constructing a New Pump Station	High cost

Action 2025-LittleFallsTwp-008. Conduct Outreach to NJ State Police Laboratory

Lead Agency:	Floodplain Administrator
Supporting Agencies:	-
Hazard(s) of Concern:	Flood
Description of the Problem:	The NJ State Police Laboratory is located in the 100-year floodplain.
Description of the Solution:	The FPA will contact the facility manager and discuss options for mitigating the facility.
Estimated Cost:	Low
Potential Funding Sources:	Township Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6
Benefits:	Mitigating the NJ State Police Laboratory will protect critical infrastructure and ensure the safety of personnel and equipment during flood events.
Impact on Socially Vulnerable Populations:	Maintaining the operational status of the police laboratory during floods ensures that emergency services can continue to support socially vulnerable populations.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	Ensuring the laboratory's functionality during floods helps maintain lifelines such as law enforcement and emergency response.
Impact on Capabilities:	Mitigating the facility improves the Township's overall disaster response capabilities, ensuring that critical services are available during flood events.
Climate Change Considerations:	As climate change leads to more frequent and severe flooding, mitigating the police laboratory provides a crucial tool for adapting to these changes.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Relocating the lab	High cost, operational disruption
Installing flood barriers	Limited protection

Action 2025-LittleFallsTwp-009. Mitigation Fund

Lead Agency:	Town Administrator
Supporting Agencies:	-
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The Township lacks a dedicated fund to provide the necessary match for federal mitigation grants.
Description of the Solution:	Establish a mitigation fund within the Township to support various mitigation initiatives, including covering the 25% local share required for federal grants.
Estimated Cost:	TBD by size of fund
Potential Funding Sources:	Town Budget
Implementation Timeline:	1-5 years
Goals Met:	5
Benefits:	Provide financial capability to apply for grants.
Impact on Socially Vulnerable Populations:	Establishing a mitigation fund can provide targeted support for projects that protect socially vulnerable populations from natural hazards.
Impact on Future Development:	The fund can be used to support resilient infrastructure projects, making the area more attractive for investment and development.
Impact on Critical Facilities/Lifelines:	The fund can be allocated to projects that safeguard critical facilities and lifelines, ensuring they remain operational during and after hazard events.
Impact on Capabilities:	By providing financial support for mitigation initiatives, the fund enhances the Township's overall disaster response capabilities.
Climate Change Considerations:	The fund can be used to finance projects that address the impacts of climate change, such as increased flooding and severe weather events.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Relying on Ad-Hoc Fundraising	Unpredictable, inconsistent funding
Reallocating existing budget	Create budget constraints, short-term solution

Action 2025-LittleFallsTwp-010. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, OEM
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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

Action 2025-LittleFallsTwp-011. Update the Flood Damage Prevention Ordinance

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Township Administration, NFIP State Coordinator, FEMA Regional Office
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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.
Description of the Solution:	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.
Estimated Cost:	Staff time
Potential Funding Sources:	Municipal budget
Implementation Timeline:	Within 5 years
Goals Met:	5
Benefits:	The updated ordinance will improve floodplain management, meet NFIP requirements, and increase resilience of new and substantially improved structures in the floodplain.
Impact on Socially Vulnerable Populations:	The action will result in better regulation of construction standards within the Special Flood Hazard Area where significant risk to socially vulnerable populations exists.
Impact on Future Development:	The action will result in stronger regulation of construction standards for future development in the Special Flood Hazard Area.
Impact on Critical Facilities/Lifelines:	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.
Impact on Capabilities:	This action will improve floodplain management capabilities through better outlining of responsibilities and administrative procedures.
Climate Change Considerations:	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.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Modify existing flood damage prevention ordinance	Time intensive
	Leave NFIP	Residents lose flood insurance coverage

Action 2025-LittleFallsTwp-012. Enhancing Wildfire Training and Equipment

Lead Agency:	Township Fire Department
Supporting Agencies:	OEM
Hazard(s) of Concern:	Wildfire
Description of the Problem:	During wildfire events, the Township identified weaknesses in training and equipment, which hinder effective response and mitigation efforts.
Description of the Solution:	To improve wildfire response, the Township will provide advanced training for all fire department personnel on wildfire behavior, suppression techniques, and safety protocols. Additionally, the Township will upgrade firefighting equipment with specialized gear, including fire-resistant clothing, portable water pumps, and communication devices.
Estimated Cost:	High
Potential Funding Sources:	HMGP, Township Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6,7
Benefits:	Enhanced training and equipment will enable firefighters to respond more effectively to wildfire events, reducing damage and loss.
Impact on Socially Vulnerable Populations:	Vulnerable populations will benefit from more effective wildfire response, ensuring their safety and reducing potential losses.
Impact on Future Development:	Improved wildfire response capabilities can encourage resilient development practices, making the area more attractive for investment.
Impact on Critical Facilities/Lifelines:	Enhanced training and equipment will help protect critical facilities and lifelines from wildfire damage, ensuring continuity of services.
Impact on Capabilities:	The Township's overall disaster response capabilities will be strengthened, ensuring a more efficient and effective response to wildfires.
Climate Change Considerations:	Enhanced training and equipment will prepare the Township for increased wildfire risks due to climate change, ensuring long-term resilience.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services, Public Information. Preventative Measures
Priority	Medium
Alternatives:	

Action	Evaluation
No Action	-
Vegetation Management only	Requires ongoing maintenance, may not address immediate needs
Mutual Aid	Resources may not be available when needed

Action 2025-LittleFallsTwp-013. Personnel Shortages

Lead Agency:	Township OEM
Supporting Agencies:	-
Hazard(s) of Concern:	Extreme Temperature, Severe Winter Weather
Description of the Problem:	The Township has strong equipment for severe winter weather events but faces personnel shortages, elevation challenges, and funding obstacles.
Description of the Solution:	To address personnel shortages, the Township's OEM will implement a recruitment and training program to increase the number of qualified personnel available during severe winter weather events. This program will include targeted recruitment efforts, partnerships with local educational institutions, and comprehensive training sessions. Additionally, the Township will seek funding through state and federal grants to support these initiatives and address elevation challenges by improving accessibility to critical areas during winter weather.
Estimated Cost:	High
Potential Funding Sources:	HMGP, Township Budget
Implementation Timeline:	1-5 years
Goals Met:	5
Benefits:	Increasing the number of trained personnel will enhance the Township's ability to respond effectively to severe winter weather events.
Impact on Socially Vulnerable Populations:	Vulnerable populations will benefit from improved emergency response capabilities, ensuring their safety during severe winter weather events.
Impact on Future Development:	Addressing elevation challenges and improving accessibility can encourage resilient development practices, making the area more attractive for investment.
Impact on Critical Facilities/Lifelines:	Ensuring adequate personnel and accessibility will help protect critical facilities and lifelines from winter weather impacts, maintaining continuity of services.
Impact on Capabilities:	The Township's overall disaster response capabilities will be strengthened, ensuring a more efficient and effective response to severe winter weather.
Climate Change Considerations:	Enhancing personnel and accessibility will prepare the Township for increased winter weather risks due to climate change, ensuring long-term resilience.
Mitigation Category	Education and Awareness Programs
CRS Category	Emergency Services, Public Information
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Community Volunteers	May lack training and availability
Outsourcing	Can be costly

Action 2025-LittleFallsTwp-014. Enhancing Flood Response Capabilities

Lead Agency:	OEM
Supporting Agencies:	Public Works
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	During flood events, the Township identified experience, training, and equipment as strengths. However, personnel shortages and lack of specialized equipment were noted as weaknesses, and infrastructure and access were significant obstacles.
Description of the Solution:	To improve flood response, the Township will provide advanced training for all emergency personnel on flood behavior, response techniques, and safety protocols. Additionally, the Township will upgrade flood response equipment with specialized gear, including high-capacity water pumps, flood barriers, and communication devices. Efforts will also be made to address infrastructure and access challenges by improving roadways and critical access points to ensure timely and effective response during flood events.
Estimated Cost:	High
Potential Funding Sources:	HMGP, Township budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,7,8
Benefits:	Better preparedness and improved infrastructure will ensure the safety of residents and protect property during floods.
Impact on Socially Vulnerable Populations:	Vulnerable populations will benefit from improved emergency response capabilities, ensuring their safety during flood events.
Impact on Future Development:	Addressing infrastructure and access challenges can encourage resilient development practices, making the area more attractive for investment.
Impact on Critical Facilities/Lifelines:	Ensuring adequate personnel and accessibility will help protect critical facilities and lifelines from flood impacts, maintaining continuity of services.
Impact on Capabilities:	The Township's overall disaster response capabilities will be strengthened, ensuring a more efficient and effective response to floods.
Climate Change Considerations:	Enhancing personnel, equipment, and infrastructure will prepare the Township for increased flood risks due to climate change, ensuring long-term resilience.
Mitigation Category	Structure and Infrastructure Project, Education and Awareness Programs
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Community Volunteers	May lack training and availability
Outsourcing	Can be costly

Action 2025-LittleFallsTwp-015. Outreach

Lead Agency:	Township OEM
Supporting Agencies:	County OEM
Hazard(s) of Concern:	Extreme Temperatures
Description of the Problem:	The Town currently does not have a comprehensive education and outreach program. There is a need to educate residents and businesses about storm mitigation, preparation, response, and recovery. Additionally, while the Town has identified cooling centers as a strength during extreme temperature events, outreach remains a significant weakness.
Description of the Solution:	Develop and enhance the public awareness program on hazards, prevention, and mitigation. Continue to work with Passaic County on their program that provides information to the municipalities. Focus on improving outreach efforts to ensure residents are aware of available resources, including cooling centers, during extreme temperature events.
Estimated Cost:	Low
Potential Funding Sources:	Township Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,3,4,5,7
Benefits:	This action will improve the current public education and outreach program in the Town by including discussions on disaster preparedness and hazard mitigation to residents and business owners, which will contribute to the resiliency of the Town.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will learn how to prepare for and mitigate the various hazards that may impact them in the Town.
Impact on Future Development:	N/A
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 Town'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	Education and Awareness Programs
CRS Category	Public Information
Priority	Medium

Alternatives:

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

8. BOROUGH OF NORTH HALEDON

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

8.1 HAZARD MITIGATION PLANNING TEAM

The Borough of North Haledon identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management represented the community on the Passaic 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 8-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 8-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Chief Todd Darby, OEM Coordinator Address: 103 Overlook Avenue, North Haledon, NJ 07508 Phone Number: (973) 800-3649 Email: tdarby@northhaledonnj.com	Name/Title: Lt. Anthony Conforti, Deputy OEM Coordinator Address: 103 Overlook Avenue, North Haledon, NJ 07508 Phone Number: (973) 715-8888 Email: aconforti@northhaledonnj.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: James Booth, Construction Official, Haledon Building Department Address: 103 Overlook Avenue, North Haledon, NJ 07508 Phone Number: (973) 423-1111 Email: jbooth@haledonboronj.com	
Additional Contributors	
Name/Title: Chief Todd Darby, OEM Coordinator Method of Participation: Participated in Planning Partnership; Provided updated information for NFIP, hazard event history, capability assessment, building permits and development, and mitigation action status; Attend Planning Partnership Kickoff and Risk Assessment Review/Mitigation Strategy Workshop.	
Name/Title: Anthony Conforti, Deputy OEM Coordinator Method of Participation: Participated in Planning Partnership; Provided updated information for NFIP, hazard event history, capability assessment, building permits and development, and mitigation action status; Attend Planning Partnership Kickoff and Risk Assessment Review/Mitigation Strategy Workshop.	
Name/Title: James Booth, Construction Official, Haledon Building Department Method of Participation: Participated in the planning process.	

8.2 COMMUNITY PROFILE

8.2.1 Brief History

Along with the Township of Wayne, City of Paterson and Boroughs of Totowa, Hawthorne, Prospect Park and Haledon, the Borough of North Haledon was formed from Manchester Township and incorporated as an independent borough in 1901 (Snyder, 1969).

8.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 3.498 square miles, of which 3.454 square miles is land and 0.044 square miles is water. It is bordered by the Boroughs of Haledon and Prospect Park to the south, Borough of Hawthorne to the east, Township of Wayne to the west, and Bergen County to the north.

8.2.3 Governing Body Format

North Haledon adopted the Borough form of government in 1901 and is governed by a mayor and six-person council.

8.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for North Haledon was 8,927, a 5.9 percent increase 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 2020 U.S. Census indicates that 5.5 percent of the population is 5 years of age or younger, 24.6 percent is 65 years of age or older, 2.3 percent is non-English speaking, 3.5 percent is below the poverty threshold, and 9.0 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

8.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

North Haledon 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 North Haledon to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

8.3.1 Planning and Regulatory Capability and Integration

Table 8-2 summarizes the planning and regulatory tools that are available to North Haledon.

Table 8-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.); Chapter 240 – Uniform Construction Codes	State and Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? There is hereby established in the Borough of North Haledon a State Uniform Construction Code Administration consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.				
Zoning/Land Use Code	Yes	Chapter 600 – Zoning, 2018	Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? The code includes specifications for each specific zone including flood, steep grades, and impervious surfaces. Any development in the zoning areas must be serviced by a stormwater management system that must conform to all relevant federal and state statutes, rules, regulations concerning stormwater management or flood control. Depending on the zoning area, there are different impervious surface requirements.				

	Jurisdiction has this?	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
Subdivision Code	Yes	Chapter 530 – Subdivision of Land, 2014	Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter is to provide rules, regulations and standards to guide land subdivision in the Borough in order to promote its public health, safety, convenience and general welfare. It shall be administered to ensure orderly growth and development, conservation, protection and proper use of land and adequate provision for circulation, utilities and services.				
Site Plan Code	Yes	Chapter 490 – Site Plan Review, 1996	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Serves as the site plan review and approval ordinance for the Borough. Site plan review is required before any change of use or before any excavation, removal of soil, clearing of a site or placing any fill on lands contemplated for development. No building permit is issued for any building or use or reduction or enlargement in size or other alteration of any building or change in use of any buildings without a site plan review. When conducting a site plan review, the reviewing board has several considerations including storm drainage, sanitary waste disposal, water supply and garbage disposal. Particular emphasis shall be given to the adequacy of existing systems and the need for improvements, both on site and off site, to adequately carry runoff and sewage and to maintain an adequate supply of water at sufficient pressure; and environmental elements relating to soil erosion, preservation of trees, protection of watercourses and resources, noise, topography, soil and animal life shall be reviewed, and the design of the plan shall minimize any adverse impact on these elements.				
Stormwater Management Code	Yes	Chapter 516 – Stormwater Management, 2007; Chapter 519 – Stormwater Quality, 2009	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 516 (Stormwater Management), adopted by the Borough on 2/21/2007 – the purpose of this chapter is to establish minimum stormwater management requirements and controls for major development. The policy statement for this chapter is: flood control, groundwater recharge, and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural BMPs. This chapter applies to all site plans and subdivisions for major developments that require preliminary or final site plan or subdivision review. Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards. • Chapter 519 (Stormwater Quality), last amended on 12/2/2009 - the purpose of this chapter is to prohibit the spilling, dumping or disposal of materials other than stormwater to the municipal separate storm sewer system (MS4) operated by the Borough of North Haledon so as to protect public health, safety, and welfare and to prescribe penalties for the failure to comply.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Environmental Protection Ordinance(s)	Yes	Chapter 570 - Trees	Local	Construction Official, Borough Engineer
How has or will this be integrated with the HMP and how does this reduce risk? To control and regulate indiscriminate and/ or excessive removal, cutting and/or destruction of trees and to control, regulate and/or prevent conditions which cause increased surface drainage, sedimentation and/or soil erosion, cause decreased soil fertility and/or impair the stability and/or value of real estate, all of which conditions are and will in the future be a deterrent to public safety, health and welfare. Tree removal from any slope or environmentally sensitive area is prohibited if it will contribute, in the opinion of the Planning Board, the Construction Official or the Borough Engineer, to extra runoff of surface water onto adjoining property and erosion and silting, unless other means approved by the Passaic County Soil Conservation District are provided to prevent runoff and erosion.				
Flood Damage Prevention Ordinance	Yes	Chapter 307 – Flood Damage Prevention, 2020	State and Local	Floodplain Administrator
How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this chapter 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, and bridges located in areas of special flood hazard; F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood-blight areas; G. 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. The ordinance does not follow the latest model code coordinated ordinance from NJDEP and will require update.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

	Jurisdiction has this?	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/Master Plan	Yes	Borough of North Haledon Master Plan, 2004	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The 2004 Master Plan has several goals that align with or are similar to the current HMP goals: provide for the proper use and development of all lands in the Borough; provide adequate park, recreation, and open space areas; preserve the remaining environmentally sensitive lands. The plan also describes the topography, soil, water bodies, wetlands, and floodplains found in the Borough. The 2011 reexamination plan includes steeply sloped areas and stream corridor areas continue to be preserved and protected by both the Borough Council and Borough Planning Board. Additionally, the Borough enforces steep slope regulations, which regulate development on lands with slopes of 8% or more.				
Capital Improvement Plan	Yes	Borough of North Haledon Master Plan	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The 2004 Master Plan has several goals that align with or are similar to the current HMP goals: provide for the proper use and development of all lands in the Borough; provide adequate park, recreation, and open space areas; preserve the remaining environmentally sensitive lands. The plan also describes the topography, soil, water bodies, wetlands, and floodplains found in the Borough. The 2011 reexamination plan includes steeply sloped areas and stream corridor areas continue to be preserved and protected by both the Borough Council and Borough Planning Board. Additionally, the Borough enforces steep slope regulations, which regulate development on lands with slopes of 8% or more.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Stormwater Management Plan	Yes	North Haledon Stormwater Management Plan, 2007	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Boswell Engineering maintains the Stormwater Management Plan for the Borough. The Plan was last revised in June 2007 and documents the strategy for the Borough to address stormwater-related impacts. The Plan addresses groundwater recharge, stormwater quantity and stormwater quality impacts by incorporating stormwater design and performance standards for new major developments, defined as projects that disturb one or more acres of land or increasing impervious surface by one-quarter acre. These standards are intended to minimize the adverse impact of stormwater runoff on water quality, water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies. The goals of the plan coincide with that of the County's HMP and focus on reducing flood damage, reduce soil erosion, and protect life and safety.				
Stormwater Pollution Prevention Plan	Yes	North Haledon Stormwater Management Plan, 2018	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? The plan indicates that the Planning and Zoning Boards ensure that all residential development and redevelopment comply with RSIS before issuing any permits. The DPW is responsible for maintaining and operating all Borough-owned BMPs. During Borough events, stormwater management information and educational materials are distributed to the public.				

	Jurisdiction has this?	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
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Transportation Plan	Yes	Borough of North Haledon Master Plan	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The 2004 Master Plan has several goals that align with or are similar to the current HMP goals: provide for the proper use and development of all lands in the Borough; provide adequate park, recreation, and open space areas; preserve the remaining environmentally sensitive lands. The plan also describes the topography, soil, water bodies, wetlands, and floodplains found in the Borough. The 2011 reexamination plan includes steeply sloped areas and stream corridor areas continue to be preserved and protected by both the Borough Council and Borough Planning Board. Additionally, the Borough enforces steep slope regulations, which regulate development on lands with slopes of 8% or more.				
Agriculture Plan	Yes	Borough of North Haledon Master Plan	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The 2004 Master Plan has several goals that align with or are similar to the current HMP goals: provide for the proper use and development of all lands in the Borough; provide adequate park, recreation, and open space areas; preserve the remaining environmentally sensitive lands. The plan also describes the topography, soil, water bodies, wetlands, and floodplains found in the Borough. The 2011 reexamination plan includes steeply sloped areas and stream corridor areas continue to be preserved and protected by both the Borough Council and Borough Planning Board. Additionally, the Borough enforces steep slope regulations, which regulate development on lands with slopes of 8% or more.				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Business/ Downtown Development Plan	Yes	Borough of North Haledon Master Plan	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The 2004 Master Plan has several goals that align with or are similar to the current HMP goals: provide for the proper use and development of all lands in the Borough; provide adequate park, recreation, and open space areas; preserve the remaining environmentally sensitive lands. The plan also describes the topography, soil, water bodies, wetlands, and floodplains found in the Borough. The 2011 reexamination plan includes steeply sloped areas and stream corridor areas continue to be preserved and protected by both the Borough Council and Borough Planning Board. Additionally, the Borough enforces steep slope regulations, which regulate development on lands with slopes of 8% or more.				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	North Haledon EOP	Local	Office of Emergency Management
The EOP is integrated with the HMP by addressing cover short-term response and long-term recovery to address communications, evacuation, and housing necessary for identified hazards.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

8.3.2 Development and Permitting Capability

Table 8-3 summarizes the capabilities of North Haledon to oversee and track development.

Table 8-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Borough Engineer tracks according to hazard area.
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	Inventory is the responsibility of the Building Department, Zoning Board, Planning Board
Describe the level of buildout in your jurisdiction.	N/A	

8.3.3 Administrative and Technical Capability

Table 8-4 summarizes potential staff and personnel resources available to North Haledon and their current responsibilities that contribute to hazard mitigation.

Table 8-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Borough Planning Board is responsible for preparing the master plan of growth and development, natural resources, transportation, housing, etc. identifying specific geographic zones and delineating the permitted types of development in each zone consistent with NJ State Statutes. This process includes drafting, having public hearings, and making recommendations to the Borough Council on the adoption of Zoning Ordinances. They also hear development applications for permitted uses and makes recommendations regarding the applications to ensure both State law and local standards are met.
Zoning Board of Adjustment	Yes	Zoning Board of Adjustment
Planning Department	Yes	
Mitigation Planning Committee	Yes	Various Departments
Environmental Board/Commission	Yes	Green Team members are officially appointed each year at the Borough's Reorg meeting held on the first Monday of each year. Green Team efforts are also aided by North Haledon's Municipal and Deputy Clerks and North Haledon's DPW staff. The Green Team partners with other community groups and assigns its members to liaise with respective partners and collaborate with the partners to advance Sustainable Jersey eligible projects.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	Department of Public Works
Construction/Building/Code Enforcement Department	Yes	Construction Department
Emergency Management/Public Safety Department	Yes	Emergency Management, Police Department and Fire Department
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	The Borough has mutual aid agreements in place with surrounding neighborhoods and the County. The Mayor and OEM Director are responsible for maintaining the agreements.
Human Resources Manual - Do any job descriptions specifically include identifying	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
or implementing mitigation projects or other efforts to reduce natural hazard risk?		
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Boswell, Inc.
Engineers or professionals trained in building or infrastructure construction practices	Yes	Boswell, Inc.
Planners or engineers with an understanding of natural hazards	Yes	Boswell, Inc.
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	Boswell, Inc.
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	Yes	Boswell, Inc.
Surveyors	No	-
Emergency manager	Yes	Todd Darby, North Haledon Police Department
Grant writers	No	-
Resilience Officer	Yes	Police Department
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

8.3.4 Fiscal Capability

Table 8-5 summarizes financial resources available to North Haledon.

8.3.5 Education and Outreach Capability

Table 8-6 summarizes the education and outreach resources available to North Haledon.

Table 8-5. Fiscal Capabilities

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

Table 8-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Chief of Police and Borough Mayor
Personnel skilled or trained in website development	Yes	Contractor to build and monitor the website; Borough maintains and updates website
Hazard mitigation information available on your website	Yes	Stormwater management information
Social media for hazard mitigation education and outreach	Yes	Facebook and Nixle
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Green Team
Warning systems for hazard events	Yes	Nixle and Register Ready
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	Municipal website, mailing, Nixle, reverse 911, Police and Fire Departments

8.3.6 Community Classifications

Table 8-7 summarizes classifications for community programs available to North Haledon.

Table 8-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	2012
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Bronze	September 22, 2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

8.3.7 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 8-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 8-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

8.4 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 8-1 is responsible for maintaining this information.

8.4.1 NFIP Statistics

Table 8-9 summarizes the NFIP policy and claim statistics for North Haledon.

Table 8-9. North Haledon NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**0**
Total Loss Payments	**0**
# Repetitive Loss Properties (NFIP definition)	**0**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**0**
# Severe Repetitive Loss Properties (FMA definition)	**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: NJOEM 2024

8.4.2 Flood Vulnerability Summary

Table 8-10 provides a summary of the NFIP program in North Haledon.

Table 8-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Along High Mountain Road
Do you maintain a list of properties that have been damaged by flooding?	No
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)?	None
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Survey
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None

NFIP Topic	Comments
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	None, and no
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?	Construction and Engineering
Are any certified floodplain managers on staff in your jurisdiction?	Yes - Boswell, Inc.
Do you have access to resources to determine possible future flooding conditions from climate change?	No
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?	Yes, Basic Floodplain Map Training
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	None
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Survey
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	Yes, Brook Maintenance
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 307 – Flood Damage Prevention, 2020
What is the date that your flood damage prevention ordinance was last amended?	July 19, 2023
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Does not meet but will once the Borough adopts Code Coordinated Ordinance
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Already a CRS community

8.5 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 8-11 through Table 8-13.

Table 8-11. 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
2020				
Total Permits	0	4	1	5
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

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

Table 8-12. Recent Major Development and Infrastructure from 2017 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
Molly Brook	Residential	180 Units / 5 Structures	920 Belmont Avenue	Wetlands	Completed

** Only location-specific hazard zones or vulnerabilities identified.*

Table 8-13. 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
TFJ NH Urban Res.	Mixed Use	90 units / 3 structures, including 2 commercial	987 Belmont Avenue	None	In planning board

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

8.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 8-1 through Figure 8-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which North Haledon has significant exposure. The maps show the location of potential new development, where available.

Figure 8-1. North Haledon Hazard Area Extent and Location Map 1

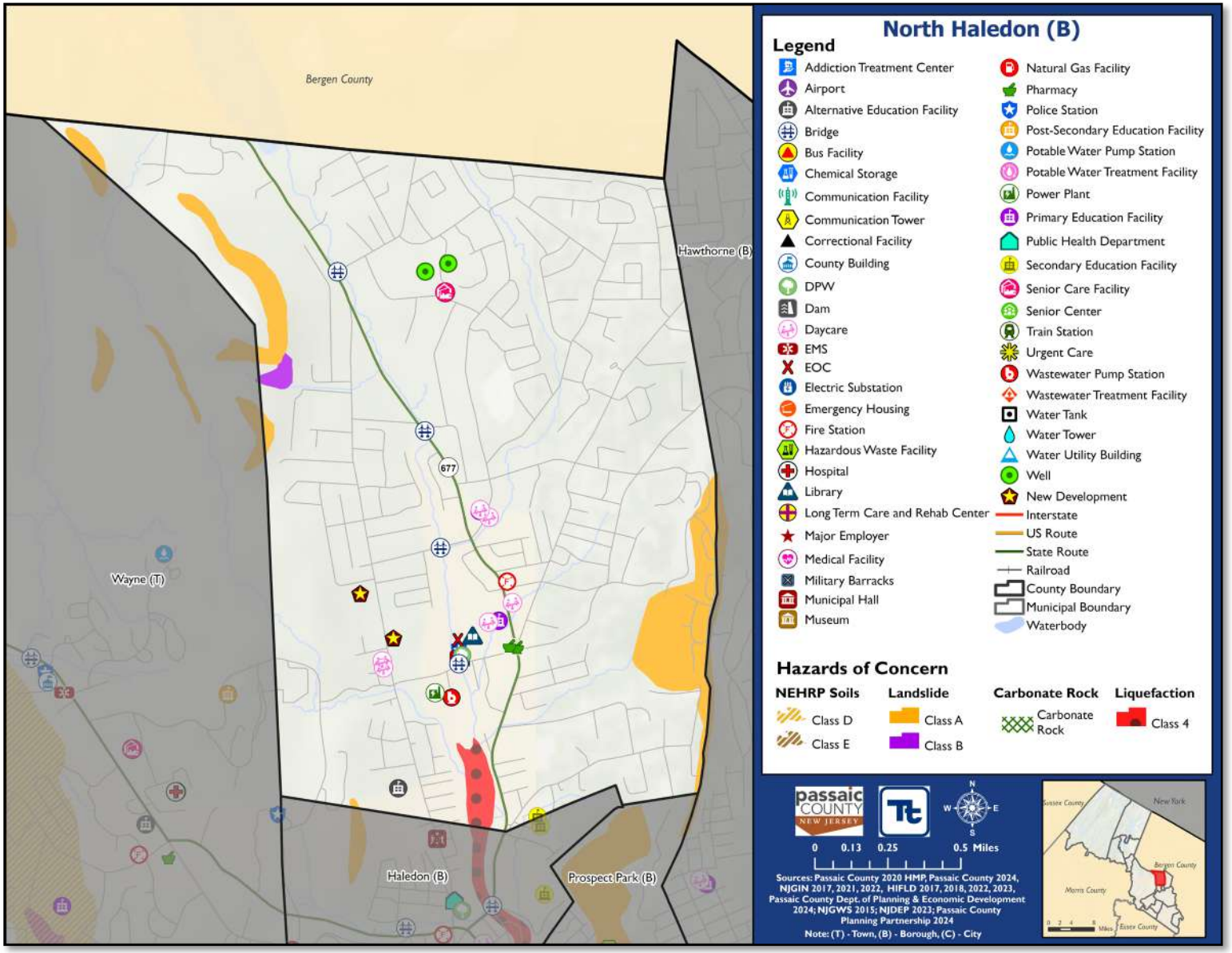
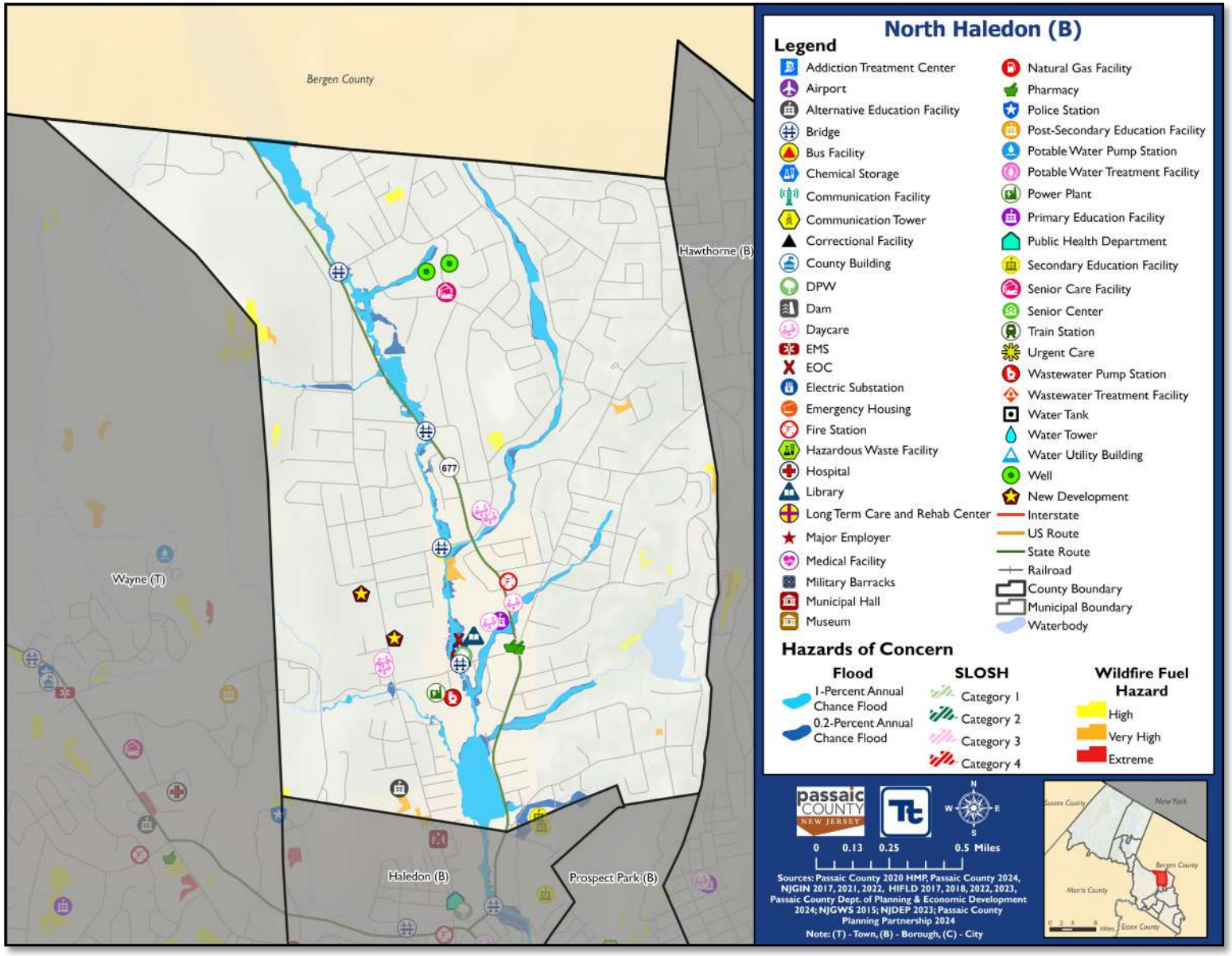


Figure 8-2. North Haledon Hazard Area Extent and Location Map 2



8.6.2 Hazard Event History

The history of natural and non-natural hazard events in North Haledon is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 8-14 provides details on loss and damage in North Haledon during hazard events since the last hazard mitigation plan update.

Table 8-14. Hazard Event History in North Haledon

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in North Haledon
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	-
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	-
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	-

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

8.6.3 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 North Haledon.

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. North Haledon 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 Borough indicated it agreed with the preliminary results.

Table 8-15 shows North Haledon's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 8-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	Medium
Geological Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 8-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 8-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600126	Bridge	Yes	Yes
Municipal Building	EOC	Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

In addition to critical facilities that are exposed to flooding, the Borough of North Haledon contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

8.6.4 Identified Issues

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

- The Borough's Police Department is located in a low-lying area and could be surrounded by flood waters in a severe storm as the Molly Ann Brook could flow over Overlook Avenue to either side of the Municipal Building. The property is located in the floodplain; however, the building is not. During heavy rain events, the building sustains flood damage. Each time, the Borough has to relocate equipment to protect. The

electrical panels and communications for the police department are located in the basement. If flooded, the system would not be functional. At this time, there is no option to relocate this equipment above ground.

- While the Borough has various education and outreach materials available to the community, there is limited information on the proper and safe use of generators residents may use during power outages when experience natural hazard events.

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

8.7 MITIGATION STRATEGY AND PRIORITIZATION

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

8.7.1 Past Mitigation Action Status

Table 8-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

8.7.2 Additional Mitigation Efforts

The Borough of North Haledon did not identify additional mitigation efforts completed since the last HMP in addition to the mitigation actions completed in Table 8-17.

Table 8-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-North Haledon-001	Relocating the Municipal Building	Flood	Borough Police and Administration	**Problem:** The Borough's Police Department is located in a low-lying area and could be surrounded by flood waters in a severe storm as the Molly Ann Brook could flow over Overlook Avenue to either side of the Municipal Building. The property is located in the floodplain; however, the building is not. During heavy rain events, the building sustains flood damage. Each time, the Borough has to relocate equipment to protect. The electrical panels and communications for the police department are located in the basement. If flooded, the system would not be functional. At this time, there is no option to relocate this equipment above ground. **Solution:** While the building itself is not located in a floodplain, during heavy rain, the police department portion of the municipal building sustains flood damage. The building cannot be elevated due to its age. The Borough will construct a new municipal building complex outside of the floodplain. This will protect the structure and contents from flood damages.	1. In Progress 2. Currently in the bidding phase to purchase a new building.	1. Include in 2025 HMP 2. Keep as is 3. Not applicable

Project Number	Project Name	Hazards 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.
2020-North Haledon-002	Education and Outreach on Safe Generator Use	Coastal Storm, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather	Borough Office of Emergency Management	**Problem:** While the Borough has various education and outreach materials available to the community, there is limited information on the proper and safe use of generators residents may use during power outages. **Solution:** Develop educational and outreach material to issue to residents on using generators during a power outage. This information will include how to use generators at home, what laws the Borough has in place for using generators, preventing carbon monoxide poisoning, and the types of hazards associated with generators.	1. In Progress 2. Utilize Social Media for informational outreach.	1. Include in the 2025 HMP 2. Keep as is 3. Not applicable

Project Number	Project Name	Hazards 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.
2020-North Haledon-003	Dry Floodproof the Police Department	Flood, Coastal Storm, Severe Weather	Police Department	**Problem:** The Borough's Police Department is located in a low-lying area and could be surrounded by flood waters in a severe storm as the Molly Ann Brook could flow over Overlook Avenue to either side of the Municipal Building. During heavy rain events, the building sustains flood damage. Each time, the Borough has to relocate equipment to protect. The electrical panels and communications for the police department are located in the basement. If flooded, the system would not be functional. At this time, there is no option to relocated this equipment above ground. **Solution:** Dry floodproof the police department portion of the municipal complex. Sealants will be applied to the walls where water typically enters the building during a flood event.	1. In Progress 2. Continue to restore to pre-damage condition although Municipal Complex floods after nearly every rainfall.	1. Include in 2025 HMP 2. Keep as is 3. Not applicable

8.7.3 Proposed Hazard Mitigation Actions for the HMP Update

North Haledon 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 North Haledon 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 Borough priorities.

Table 8-18 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 8-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 8-18. 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			
Drought				X			X			
Extreme Temperature				X			X			
Flood		X		X	X	X	X			X
Geological Hazards				X			X			
Severe Weather		X		X	X	X	X			X
Severe Winter Weather				X			X			
Wildfire				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 8-19. 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**	
Action 2025-North HaledonB-001	Relocating the Municipal Building	1	1	1	0	0	1	1	1	1	0	1	0	1	0	**9**	Medium
Action 2025-North HaledonB-002	Education and Outreach on Safe Generator Use	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**13**	High
Action 2025-North HaledonB-003	Dry Floodproof the Police Department	1	1	1	1	1	0	0	1	1	1	1	1	1	0	**11**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-North HaledonB-001. Relocating the Municipal Building

Lead Agency:	Borough Police
Supporting Agencies:	Borough Administration
Hazard(s) of Concern:	Flood, Severe Storm
Description of the Problem:	The Borough's Police Department is located in a low-lying area and could be surrounded by flood waters in a severe storm as the Molly Ann Brook could flow over Overlook Avenue to either side of the Municipal Building. The property is located in the floodplain; however, the building is not. During heavy rain events, the building sustains flood damage. Each time, the Borough has to relocate equipment to protect. The electrical panels and communications for the police department are located in the basement. If flooded, the system would not be functional. At this time, there is no option to relocate this equipment above ground.
Description of the Solution:	While the building itself is not located in a floodplain, during heavy rain, the police department portion of the municipal building sustains flood damage. The building cannot be elevated due to its age. The Borough Police Department is currently in the bidding phase to purchase a new municipal building outside of the floodplain. This will protect the structure and contents from flood damages.
Estimated Cost:	High
Potential Funding Sources:	FEMA HMGP, FMA, Department of Justice Grant
Implementation Timeline:	Within 5 years
Goals Met:	2,5,6
Benefits:	Increase resiliency, continuity of operations, reduce flood losses
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the Borough’s Police Department which is a critical facility, maintaining the critical services that it provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in storm frequency and severity through protection to flood damages.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection, Emergency Services
Priority	High

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

Action 2025-North HaledonB-002. Education and Outreach on Safe Generator Use

Lead Agency:	Borough Office of Emergency Management	
Supporting Agencies:	Borough Administration	
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire	
Description of the Problem:	While the Borough has various education and outreach materials available to the community, there is limited information on the proper and safe use of generators residents may use during power outages when experience natural hazard events.	
Description of the Solution:	Develop educational and outreach material to issue to residents on using generators during a power outage for distribution on a social media platform. This information will include how to use generators at home, what laws the Borough has in place for using generators, preventing carbon monoxide poisoning, and the types of hazards associated with generators.	
Estimated Cost:	Low	
Potential Funding Sources:	Borough Budget, FEMA PDM	
Implementation Timeline:	Within 5 years	
Goals Met:	1,2,3,7	
Benefits:	This initiative aims to enhance the dissemination of existing public education and outreach on generator usage via social media, thereby contributing to the Borough's resiliency.	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will receive information on the safe operation of generators to effectively manage potential power disruptions caused by various hazards.	
Impact on Future Development:	Not applicable	
Impact on Critical Facilities/Lifelines:	Critical facilities and lifeline businesses will gain valuable insights on preparing for emergencies and reducing potential hazards. By enhancing their resilience, these businesses can ensure the continuity of their operations during crises.	
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, severe storms, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	Education and Awareness Programs	
CRS Category	Public Information	
Priority	High	
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 Borough
	Use only a few methods for distribution	Using only a few methods of distribution may hinder socially vulnerable populations from receiving guidance.

Action 2025-North HaledonB-003. Dry Floodproof the Police Department

Lead Agency:	Borough Police Department
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The Borough's Police Department is located in a low-lying area and could be surrounded by flood waters in a severe storm as the Molly Ann Brook could flow over Overlook Avenue to either side of the Municipal Building. During heavy rain events, the building sustains flood damage. Each time, the Borough has to relocate equipment to protect. The electrical panels and communications for the police department are located in the basement. If flooded, the system would not be functional. At this time, there is no option to relocated this equipment above ground.
Description of the Solution:	Dry floodproof the police department portion of the municipal complex. Sealants will be applied to the walls where water typically enters the building during a flood event.
Estimated Cost:	Medium
Potential Funding Sources:	Municipal Budget, HMGP, FMA
Implementation Timeline:	1-5 years
Goals Met:	2,5,6
Benefits:	Critical services provided by the police department will be protected from flooding.
Impact on Socially Vulnerable Populations:	By dry floodproofing the police department, the Borough can ensure that critical services remain operational during flood events, providing essential support to these vulnerable groups.
Impact on Future Development:	Implementing floodproofing can set a precedent for future construction projects, encouraging the incorporation of similar resilience measures.
Impact on Critical Facilities/Lifelines:	Dry floodproofing the police department will protect essential systems and equipment, preventing disruptions to emergency services and ensuring that the facility can continue to serve the community during and after a flood.
Impact on Capabilities:	By safeguarding critical infrastructure, the Borough can maintain its operational capacity during flood events, ensuring that emergency services are available to assist residents.
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Preventative Measures, Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Build new municipal complex in new location	Too expensive
Standby sandbags	Requires deployment

9. CITY OF PASSAIC

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

9.1 HAZARD MITIGATION PLANNING TEAM

The City of Passaic identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many City departments. The Office of Emergency Management represented the community on the Passaic 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 9-1 summarizes City officials who participated in the development of the annex and in what capacity. Additional documentation of the City's planning activities through Planning Partnership meetings is included in Volume I.

Table 9-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Walter Porto, Deputy OEM Coordinator Address: 330 Passaic Street, Passaic, NJ 07055 Phone Number: 973-703-9814 Email: oem-deputy@cityofpassaicnj.gov	Name/Title: Captain Piyush Patel, OEM Coordinator Address: 330 Passaic Street, Passaic, NJ 07055 Phone Number: 201-637-0141 Email: ppatel@cityofpassaicnj.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Yasseen Saad, PE, Municipal Engineering Consultant Address: 330 Passaic Street, Passaic, NJ 07055 Phone Number: 973-365-5624 Email: ysaad@cityofpasaicnj.gov	
Additional Contributors	
Name/Title: Walter Porto, Deputy OEM Coordinator Method of Participation: Participated in Planning Partnership; Attended Risk Assessment/Mitigation Strategy Workshop and provided information on the capability assessment, critical facilities, mitigation actions and the NFIP summary.	
Name/Title: Captain Piyush Patel, OEM Coordinator Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop.	
Name/Title: Yasseen Saad, PE, Municipal Engineering Consultant Method of Participation: Attended Risk Assessment/Mitigation Strategy Workshop; Provided updates on previous mitigation actions and the NFIP summary	
Name/Title: Alberto M. Ventura, UCC Construction Official Method of Participation: Attended Planning Partnership meeting; Provided information on building permits and new development.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Bob Munier Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Fred Corbitt Method of Participation: Attended Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop.	
Name/Title: Joe Colon Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Omar Garcia Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Pat Trentacost Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Ricardo Fernandez Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Vivian Vergel Method of Participation: Attended Planning Partnership Kickoff meeting.	
Name/Title: Weatherly Frias Method of Participation: Attended Planning Partnership Kickoff meeting.	

9.2 COMMUNITY PROFILE

9.2.1 Brief History

The area now known as the City of Passaic was settled by Dutch pioneers in 1678. The City became an independent municipality from Acquackanock Township in 1873. Due to its location on the Passaic River, the City population and development grew alongside the Industrial Revolution (City of Passaic n.d.).

9.2.2 Location

According to the U.S. Census Bureau, the City has a total land area of 3.244 square miles, of which 3.146 square miles is land and 0.098 square miles is water. It is bordered by the City of Clifton around its southern, western, and northern edges and abuts Bergen County to the east.

9.2.3 Governing Body Format

The City is governed by the Mayor/Council form of government under the Faulkner Act. The City has one mayor and seven-person council (City of Passaic n.d.).

9.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Passaic was 70,537, a 1.1 percent increase 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 2020 U.S. Census indicates that 8.3 percent of the population is 5 years of

age or younger, 9.0 percent is 65 years of age or older, 22.4 percent is non-English speaking, 21.8 percent is below the poverty threshold, and 7.8 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

9.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Passaic 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 Passaic to identify opportunities for integrating mitigation concepts into ongoing City procedures.

9.3.1 Planning and Regulatory Capability and Integration

Table 9-2 summarizes the planning and regulatory tools that are available to Passaic.

Table 9-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14.; International Building Code – New Jersey Edition, 2018; NJAC 5:24-3.14; Chapter 107 Construction Codes, Uniform	State and Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? There is hereby adopted by the City Council of the City of Passaic this chapter for the purpose of establishing rules and regulations for the enforcement of the State Uniform Construction Code Act for the erection, construction, alteration, repair, demolition, use and occupancy, location and maintenance, removal and moving of buildings and other structures, including permits and penalties. The City of Passaic hereby establishes a Uniform Construction Code Enforcing Agency to be known as the "Division of Code Enforcement," consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and any such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereinafter adopt as part of the State Uniform Construction Code.				
Zoning/Land Use Code	Yes	Chapter 317 – Zoning Ord. No. 796-84, 1984	Local	Zoning
How has or will this be integrated with the HMP and how does this reduce risk? There is hereby established a comprehensive zoning plan for the City of Passaic, which plan is set forth in the text, map and schedule of regulations which constitute the Zoning Ordinance. Said zoning plan is deemed to be substantially consistent with the Master Plan of the City of Passaic, adopted June 8, 1983. Said zoning plan is adopted for the purposes set forth in the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., with amendments, and more particularly for the protection and promotion of the public health, safety, and welfare in the following manner listed below: A. To encourage municipal action to guide the appropriate use or development of all lands in this City in a manner which will promote the public health, safety, morals, and general welfare. B. To secure safety from fire, flood, panic, and other natural and man-made disasters. C. To provide adequate light, air, and open space. D. To ensure that the development of this municipality does not conflict with the development and general welfare of neighboring municipalities, the county, and the state as a whole. E. To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment. F. To encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies. G. To provide sufficient space in appropriate locations for a variety of residential, recreational, commercial, and industrial uses and open space, both public and private, according to their respective environmental requirements, in order to meet the needs of all citizens of the City of Passaic. H. To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight. I. To promote a desirable visual environment through creative development techniques and good civic design and arrangements. J. To promote the conservation of open space and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land. K. To encourage planned developments which incorporate the best features of design and relate the type, design and layout of residential, commercial, industrial and recreational development to the particular site. L. To encourage senior citizen community housing construction. M. To encourage coordination of the various public and private procedures and activities shaping land development with a view of lessening the cost of such development and to the more efficient use of land. N. To promote the conservation of energy through the use of planning practices designed to reduce energy consumption and to provide for maximum utilization of renewable energy sources.			

	Jurisdiction has this?	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
Subdivision Code	Yes	Chapter 263 – Subdivision of Land, 1985	Local	Zoning
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision in the city, in order to promote the public health, safety, convenience and general welfare of the municipality. It shall be administered to ensure the orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services.				
Site Plan Code	Yes	Chapter 29 Land Development Procedures, Article 29 – Site Plan Approval	Local	Zoning and Engineering
How has or will this be integrated with the HMP and how does this reduce risk? Developers will submit to the administrative officer a site plan and such other information as is reasonably necessary to make an informed decision as to whether the requirements necessary for preliminary site plan approval have been met.				
Stormwater Management Code	Yes	Chapter 258A Ord. No. 1755-08 - Stormwater Control	Local	City Council
How has or will this be integrated with the HMP and how does this reduce risk? Flood control, groundwater recharge, and pollutant reduction shall be achieved through the use of stormwater management measures, including green infrastructure Best Management Practices (GI BMPs) and nonstructural stormwater management strategies. GI BMPs and low impact development (LID) should be utilized to meet the goal of maintaining natural hydrology to reduce stormwater runoff volume, reduce erosion, encourage infiltration and groundwater recharge, and reduce pollution. GI BMPs and LID should be developed based upon physical site conditions and the origin, nature and the anticipated quantity, or amount, of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge. The purpose of this chapter is to establish minimum stormwater management requirements and controls for "major development."				
Post-Disaster Recovery/ Reconstruction Code	No			
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
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.				

	Jurisdiction has this?	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
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? • 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? This law went into effect in March 2024 during the planning process of this plan update.				
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Environmental Protection Ordinance(s)	Yes	Title 7 of the NJ Municipal Administrative Code	State	New Jersey Department of Environmental Protection (NJDEP)
How has or will this be integrated with the HMP and how does this reduce risk? Protects the air, waters, land, and natural and historic resources of the State to ensure continued public benefit.				

	Jurisdiction has this?	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
Flood Damage Prevention Ordinance	Yes	Chapter 143 – Flood Damage Prevention, 2023	Local	City Engineer
How has or will this be integrated with the HMP and how does this reduce risk? The current ordinance was adopted on November 9, 2023. It is the purpose of this chapter 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, electricity, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; G. 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. The ordinance does follows the latest model code coordinated ordinance from NJDEP.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
PLANNING DOCUMENTS				
General/Comprehensive/Master Plan	Yes	City of Passaic Master Plan, 2013	Local	Planning, Redevelopment & Economic Development
How has or will this be integrated with the HMP and how does this reduce risk? New residential and commercial developments are continuing the growth of the City's diverse population and cultural markets. New and proposed commercial developments are helping to restore the City's employment and tax base. Redevelopment strategies and efforts are helping to shape and solidify many of the City's neighborhoods. The growth that has occurred during this time happened without a comprehensive structure guiding the City's Land Use. This document is meant to provide that structure.				
Capital Improvement Plan	Yes	City of Passaic Master Plan, 2013	Local	Planning, Redevelopment & Economic Development
How has or will this be integrated with the HMP and how does this reduce risk? New residential and commercial developments are continuing the growth of the City's diverse population and cultural markets. New and proposed commercial developments are helping to restore the City's employment and tax base. Redevelopment strategies and efforts are helping to shape and solidify many of the City's neighborhoods. The growth that has occurred during this time happened without a comprehensive structure guiding the City's Land Use. This document is meant to provide that structure.				

	Jurisdiction has this?	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
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Stormwater Management Plan	Yes	Municipal Stormwater Management Plan, 2007	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Other: Snow Plan	Yes	City of Passaic Snow Plan	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Identifies main arteries, priority main roads, and critical facility access roadways that are to be continuously addressed by the Department of Public Works during snow events.				

	Jurisdiction has this?	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
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Emergency Management Plan, 2019	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? The Emergency Management Plan sets policies and procedures for emergency response during a disaster event.				
Continuity of Operations Plan	Yes	Emergency Management Plan, 2019	Local	Office of Emergency Management
How has or will this be integrated with the HMP and how does this reduce risk? Continuity of Operations is included in the Emergency Management Plan.				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Public Health Plan	Yes	Emergency Management Plan, 2019	Local	Health Department
The plan intends to protect residents from public health hazards.				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				

9.3.2 Development and Permitting Capability

Table 9-3 summarizes the capabilities of Passaic to oversee and track development.

Table 9-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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
Are permits tracked by hazard area? (For example, floodplain development permits.)	N/A	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	There are 220 under sized parcels that can only be built with a variance.
Describe the level of buildout in your jurisdiction.	N/A	

9.3.3 Administrative and Technical Capability

Table 9-4 summarizes potential staff and personnel resources available to Passaic and their current responsibilities that contribute to hazard mitigation.

Table 9-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning Board is responsible for the Master Plan and site plan and subdivision reviews and approval.
Zoning Board of Adjustment	Yes	Zoning Board of Adjustment
Planning Department	Yes	Planning, Redevelopment & Economic Development
Mitigation Planning Committee	Yes	Mitigation Planning Committee
Environmental Board/Commission	No	-
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Urban Enterprise Zone
Public Works/Highway Department	Yes	Public Works
Construction/Building/Code Enforcement Department	Yes	Code Enforcement & Zoning
Emergency Management/Public Safety Department	Yes	Emergency Management, Fire Department and Police Department
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Tree trimming, stormwater maintenance
Mutual aid agreements	Yes	Sanitary sewer maintenance
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	Licensed Engineer
Other	Yes	Redevelopment Agency, Passaic Valley Water Commission, Urban Enterprise Zone
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Licensed Planner and Licensed Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Licensed Engineer
Planners or engineers with an understanding of natural hazards	Yes	License Planner and Licensed Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Engineering
Professionals trained in conducting damage assessments	Yes	Deputy OEM Coordinator

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Personnel skilled or trained in GIS and/or Hazus applications	No	-
Staff that work with socially vulnerable populations or underserved communities	Yes	Human Services Department
Environmental scientists familiar with natural hazards	Yes	Engineering
Surveyors	Yes	On-call surveyor contracted every year
Emergency manager	Yes	Office of Emergency Management Director
Grant writers	Yes	Community Development has a Division of Grants. Responsibilities include the Community Development Block Grant and Home Investment Partnership Program. *Consider the following:* *Are data and maps from the HMP used to support documentation in grant applications?*
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

9.3.4 Fiscal Capability

Table 9-5 summarizes financial resources available to Passaic.

Table 9-5. Fiscal Capabilities

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

9.3.5 Education and Outreach Capability

Table 9-6 summarizes the education and outreach resources available to Passaic.

Table 9-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Public Information Officer
Personnel skilled or trained in website development	Yes	IT staff
Hazard mitigation information available on your website	Yes	City website
Social media for hazard mitigation education and outreach	Yes	Facebook, X (Formerly Twitter), City Website
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Social media, website, police and fire with PA system, use of schools reverse 911
Natural disaster/safety programs in place for schools	Yes	Schools reverse 911, evacuation plan for schools
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	The Police Department has an autism, special needs, and Alzheimer registry.
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Department of Recreation and Cultural Affairs

9.3.6 Community Classifications

Table 9-7 summarizes classifications for community programs available to Passaic.

Table 9-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Class 2	As of 04/01/2025
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	None	June 3, 2015
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

9.3.7 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 9-8 summarizes the adaptive capacity for each identified hazard of concern and the City’s capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.

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

Table 9-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

9.4 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 9-1 is responsible for maintaining this information.

9.4.1 NFIP Statistics

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

Table 9-9. City of Passaic NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**38**
Total Loss Payments	**$13,324,407**
# Repetitive Loss Properties (NFIP definition)	**7**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**3**
# Severe Repetitive Loss Properties (FMA definition)	**3**

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

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

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

Source: NJOEM 2024

9.4.2 Flood Vulnerability Summary

Table 9-10 provides a summary of the NFIP program in Passaic.

Table 9-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	The main areas prone to flooding in the City of Passaic are those located within the FEMA Flood Hazard Areas / Flood Zones, mainly in those areas along the Passaic River and McDonald Brook.
Do you maintain a list of properties that have been damaged by flooding?	The Engineering Office maintains a list of City-owned properties and infrastructure that have been damaged by flooding.
Do you maintain a list of property owners interested in flood mitigation?	The Engineering Division does not maintain a list of property owners interested in mitigation.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	The City works with FEMA to develop damage inventory scope of damages.
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	11 damage reports produced after Hurricane Ida.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	None to my knowledge
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Yes, the City uses FEMA Flood Mapping
NFIP Compliance	
What local department is responsible for floodplain management?	Department of Public Works / Engineering Division / 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?	NJDEP released new climate change projected rainfall regulations that must be used for design of stormwater management design for all major developments as per rule amendment to N.J.A.C. 7:8
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?	Yes, the Engineering Division staff can use training regarding general floodplain management regulations and best practices
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Engineering Site Plan Reviews for development applications. GIS services to the City.

NFIP Topic	Comments
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	The City utilizes regulations set forth in N.J.A.C. 7:8 & 7:13
What are the barriers to running an effective NFIP program in the community, if any?	Proper education/outreach to the community. Knowing what resources are available.
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)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 143: Flood Damage Prevention Ordinance
What is the date that your flood damage prevention ordinance was last amended?	November 9, 2023
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets standard requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, Neglia Group is the Engineering Consultant for the Planning Board and Zoning Board of Adjustment and takes NJDEP Flood Hazard Regulations into account when reviewing all site plans related to development applications. For those applications that require NJDEP permitting, the Applications/Building permits are not approved until the NJDEP permits are provided by the Applicant.
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The City does not participate in CRS but is interested in learning about participation requirements.

9.5 GROWTH/DEVELOPMENT TRENDS

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction's overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 9-11 through Table 9-13.

Table 9-11. 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
2020				
Total Permits	5	0	2	7
Permits within SFHA	0	0	0	0
2021				
Total Permits	6	3	3	12
Permits within SFHA	0	0	0	0

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2022				
Total Permits	7	4	4	15
Permits within SFHA	0	0	0	0
2023				
Total Permits	7	4	3	14
Permits within SFHA	0	0	0	0

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

Table 9-12. Recent Major Development and Infrastructure from 2017 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
IDIL Passaic Urban Ren	Warehouse	200.000 sq/ft	23-35 Madison St	-	Complete
SFG Passaic Urban Ren	Warehouse	295.500 sq/ft	74-152 Eight St	-	On Going
18 Van Houten LLC	Mult Family	40 Units	420-460 River Dr	-	On Going

** Only location-specific hazard zones or vulnerabilities identified.*

Table 9-13. 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
None reported.					

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

9.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the City are shown in Figure 9-1 through Figure 9-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Passaic has significant exposure. The maps show the location of potential new development, where available.

Figure 9-1. Passaic Hazard Area Extent and Location Map 1

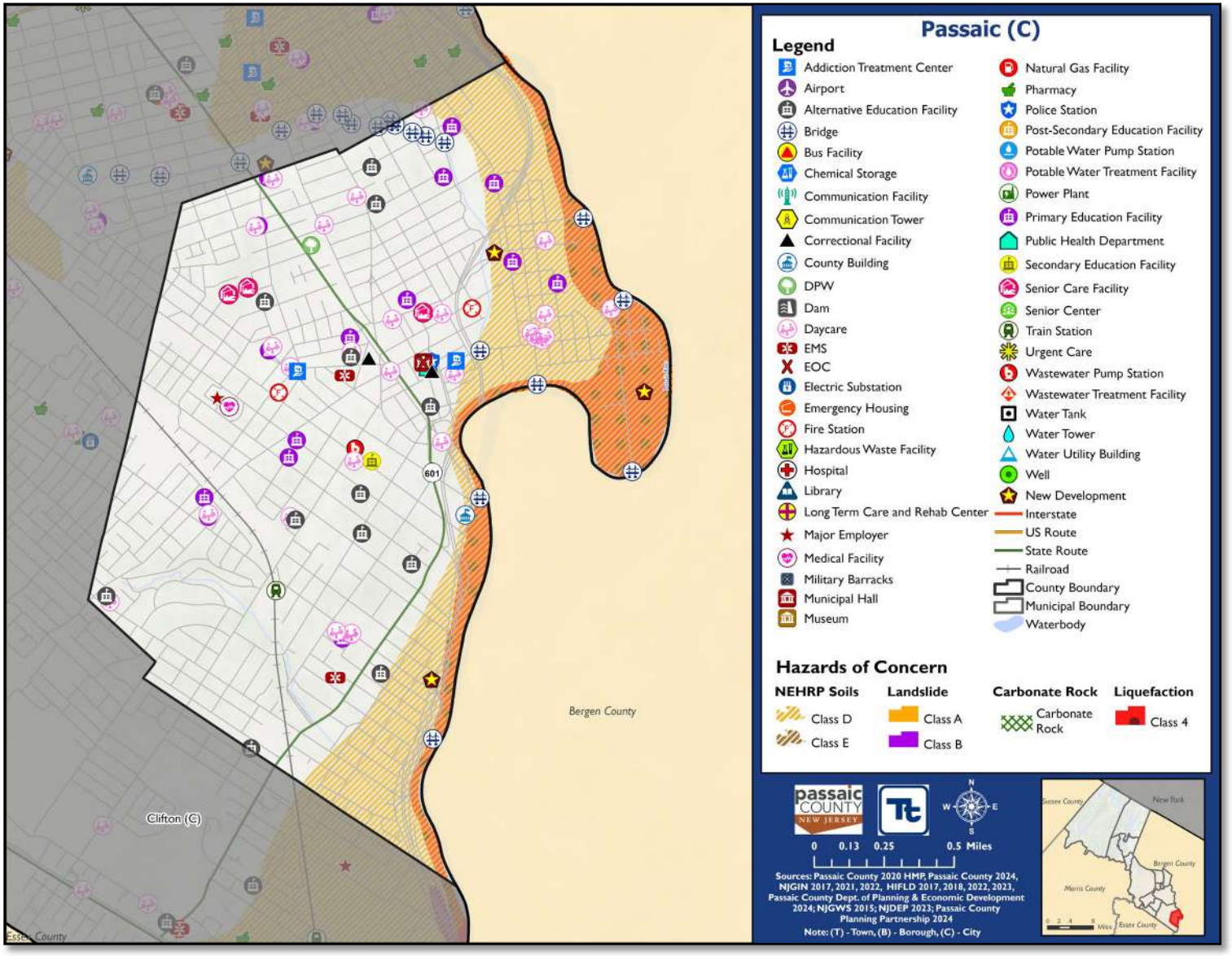
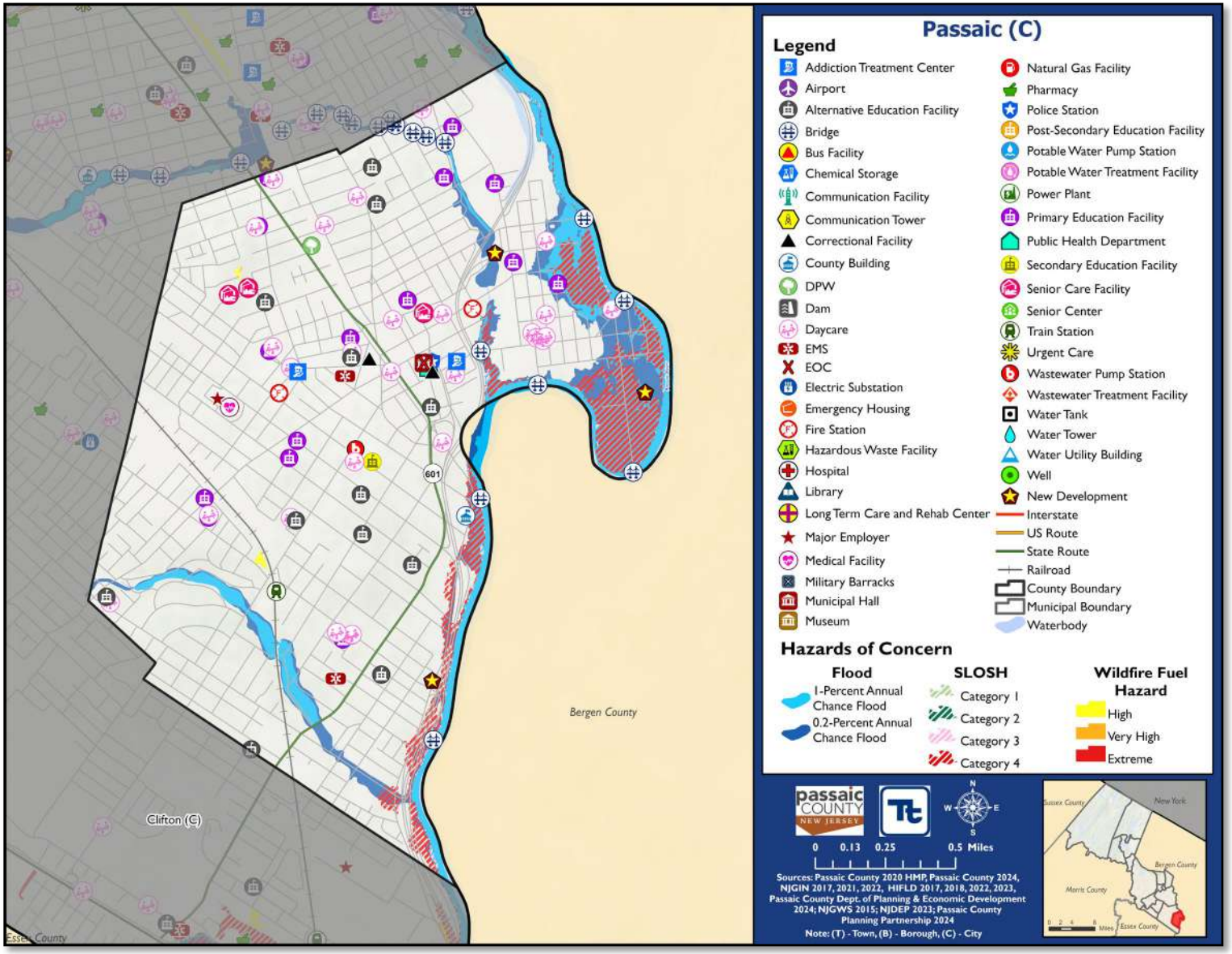


Figure 9-2. Passaic Hazard Area Extent and Location Map 2



9.6.2 Hazard Event History

The history of natural and non-natural hazard events in Passaic is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 9-14 provides details on loss and damage in Passaic during hazard events since the last hazard mitigation plan update.

Table 9-14. Hazard Event History in Passaic

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Passaic
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	City received roughly $5.6 million via the County CARES program. These funds were used to support the operation of test sites, food distribution facilities and efforts, purchase personal protective equipment and various sanitation devices, and technology need for socially distanced work. Funds were also used for overtime pay for employees working these initiatives, as well as municipal staff re-deployed to support response efforts.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	City received funds for a pumping station near the transit station at the site of a fatality.
December 17-23, 2023	Flood	Yes	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	-

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

9.6.3 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 Passaic.

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. Passaic 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 City indicated the following:

- Passaic City identified the Passaic Valley Water Commission as a valuable resource during drought events, recognizing it as a significant strength for the City.
- For flooding and severe weather events, the City identified precise knowledge of flood-prone areas and effective communication as strengths. However, they noted a need for more equipment, such as boats and life jackets, as a weakness. Additionally, NJ DEP permitting was identified as an obstacle, while grants were seen as an opportunity. As a result, the hazard rankings for Flood and Severe Weather were updated from Medium to High.
- The City identified the Department of Public Works as a strength for severe winter weather events. However, they noted the need for more plows as an obstacle, while grants for acquiring additional plows were seen as an opportunity.

Table 9-15 shows Passaic's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 9-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	High
Severe Winter Weather	Medium
Wildfire	Low

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

Critical Facilities

Table 9-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

No high hazard dams are located in the City of Passaic.

Table 9-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600002	Bridge	Yes	Yes
1600003	Bridge	Yes	Yes
1600004	Bridge	Yes	Yes
1600052	Bridge	No	Yes
1600053	Bridge	No	Yes
1600054	Bridge	No	Yes
1600055	Bridge	No	Yes
0200-21C (I-5 "old");1600005	Bridge	Yes	Yes
0200-21D (I-6 "old")1600006	Bridge	Yes	Yes
0200-56A (I-1 "old");1600001	Bridge	Yes	Yes
Akademia Malucha LLC	Daycare	Yes	Yes
Boys' and Girls' Club of Paterson – Passaic Unit	Daycare	No	Yes
Number 8, Pulaski E.S.	Primary Education Facility	Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

9.6.4 Identified Issues

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

- The City of Passaic has 7 repetitive loss properties. The City has previously conducted outreach, but property owners were not issued. Frequent flooding has resulted in damages to these structures as documented by paid NFIP claims. Community members are unaware of the resources available to them should they become affected by flooding.
- The infrastructure of City buildings is not only outdated but also highly susceptible to damage during severe weather and winter weather events. This aging infrastructure urgently requires maintenance and upgrades to ensure the safety and resilience of these buildings in the face of increasingly frequent and intense weather conditions.
- Veterans Memorial Park faces significant challenges due to the long-term effects of repeated flooding. This flooding has caused extensive damage to the 50-acre public open space, raised safety concerns, and led to environmental issues in McDonalds Brook and Hughes Lake. The City has identified that repair and mitigation solutions are needed to restore the park's infrastructure, enhance public safety, and address the environmental degradation in the affected water bodies.
- Flood insurance rates are on the rise, and upcoming remapping efforts may further increase the necessity for flood insurance coverage. This situation poses a significant financial burden on residents, particularly those in newly designated flood zones who may be unprepared for the additional costs.
- Although the City of Passaic has flood exposure, the City does not participate in the Community Rating System (CRS) program. Flood insurance premiums continue to rise.

- Heavy snowfall events create a significant challenge for the City, as the accumulation of snow on roadways can impede traffic flow and compromise public safety. The lack of designated snow storage areas exacerbates this issue, making it difficult to keep roads clear and accessible during and after severe winter weather.
- There are flood-prone areas in the City, including multiple locations which are located in the floodplain. These locations are Benson and Main, South and 10, and South and 11. Additionally, South and 10, and South and 11 are impacted by riverine flooding.
- The City's current municipal codes may not fully reflect the latest best management practices for hazard mitigation. This gap can leave the community vulnerable to various risks, as outdated regulations may not adequately address contemporary challenges posed by natural and man-made hazards.
- Number 8, Pulaski Elementary School, located on 140 Street, is situated within the 100-year floodplain, making it highly susceptible to flooding. This vulnerability poses significant risks to the safety of students, staff, and the school's infrastructure. As the school is owned and operated by the Board of Education, it is crucial to address these risks to ensure a safe learning environment and prevent potential disruptions to educational activities.
- Passaic City identified the Passaic Valley Water Commission as a valuable resource during drought events, recognizing it as a significant strength for the City.*
- For flooding and severe weather events, the City identified precise knowledge of flood-prone areas and effective communication as strengths. However, they noted a need for more equipment, such as boats and life jackets, as a weakness. Additionally, NJ DEP permitting was identified as an obstacle, while grants were seen as an opportunity.*
- The City identified the Department of Public Works as a strength for severe winter weather events. However, they noted the need for more plows as an obstacle, while grants for acquiring additional plows were seen as an opportunity.*

* This issue was identified as a specific area of concern based on resident response to the Passaic County Hazard Mitigation Strengths, Weaknesses, Obstacles, and Opportunities (SWOO) worksheet.

9.7 MITIGATION STRATEGY AND PRIORITIZATION

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

9.7.1 Past Mitigation Action Status

Table 9-17 indicates progress on the City's mitigation strategy identified in the 2020 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.

9.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 9-17, Passaic identified the following mitigation efforts completed since the last HMP:

- Timber steel reinforced guide rail installed along Main Avenue & Benson Avenue as part of the FEMA flood mitigation project to prevent heavy objects from getting sucked into Main Avenue culvert during heavy/aggressive storm events.
- Catch basin repair project as part of FEMA flood mitigation to reset and re-establish low points at inlets.

Table 9-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Passaic-001	Pennington Avenue Culvert	Severe Storm, Flooding	Passaic County	**Problem:** Benson Court, under Pennington Avenue floods. **Solution:** Replace Pennington Avenue Culvert.	1. Complete 2. Culvert was replaced.	1. Discontinue 2. N/A 3. Project is complete.
2020-Passaic-002	Repetitive Loss Outreach	Flood	Floodplain Administrator	**Problem:** The City has 7 repetitive loss properties and one severe repetitive loss property. The City has previously conducted outreach, but property owners were not issued. **Solution:** The City will revisit outreach to the repetitive loss properties; inquire about the preferred mitigation action (elevation/acquisition) and compile a list of property owners interested in applying for a grant. The City will develop a FEMA FMA grant application to mitigate these properties.	1. Ongoing Capability 2. The City will revisit outreach to the repetitive loss properties; inquire about the preferred mitigation action (elevation/acquisition) and compile a list of property owners interested in applying for a grant. The City will develop a FEMA FMA grant application to mitigate these properties.	1. Include in 2025 HMP 2. Identifying all properties located in flood zones associated with repetitive loss. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Passaic-003	Strengthen infrastructure at city buildings	Severe Storm, Severe Winter Storm	Public Works / Buildings and Grounds Department	**Problem:** Infrastructure at City buildings may be outdated and prone to damages. **Solution:** Inspect all roofs, masonry, and windows for leakage at City Buildings.	1. In Progress 2. Project is still ongoing with Public Works Department without any issues.	1. Include in 2025 HMP 2. Dated infrastructure requiring maintenance. 3. N/A
2020-Passaic-004	McDonalds Brook Flood Control Project	Flood	Passaic County	**Problem:** Veterans Memorial Park is impacted by the long term effects of repeated flooding in the 50-acre park, which include significant damage to public open space, safety concerns, and environmental issues in McDonalds Brook and Hughes Lake. **Solution:** The city will continue with the project.	1. In Progress 2. Original McDonalds Brook Flood Control Project Phases 1-5 completed, however the City has recently awarded a design contract to French & Parrello for repair and mitigation design at McDonalds Brook	1. Include in 2025 HMP 2. McDonalds Brook Flood Control Project has been completed through Phase 5. The city will continue with the project. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Passaic-005	Passaic and Van Houten underpass flooding	Flood	Engineering	**Problem:** Underpass flooding of up to 6 feet results in closures of roadway, damaged cars, and emergency response. **Solution:** Conduct feasibility assessment to determine cause of flooding and appropriate mitigation actions. Complete actions once identified. Increase frequency of stormwater system cleaning.	1. Ongoing Capability 2. Hammond Avenue drainage study conducted and mitigation plans are in development Passaic Ave & Van Houten NJ Transit Underpass drainage study conducted and final design services for mitigation to be awarded. The City awarded an annual contract to Delgado Brothers Contractors for the ongoing maintenance and cleaning of the City's entire catch basin network. The City is working on getting permits and funding to achieve this action.	1. Discontinue 2. Not Applicable 3. This action is ongoing for maintenance.
2020-Passaic-006	Flood insurance promotion	Flood	Floodplain Administrator	**Problem:** Flood insurance rates are rising and remapping may result in increase in need for flood insurance. **Solution:** Encourage residents to purchase flood insurance through outreach.	1. In Progress 2. Encourage residents to purchase flood insurance through outreach.	1. Include in 2025 HMP 2. Outreach to owners of flood-prone property 3. N/A

Project Number	Project Name	Hazards 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.
2020-Passaic-007	Consider CRS participation	Flood	Floodplain Administrator	**Problem:** Flood insurance rates are rising and remapping may result in increase in need for flood insurance. **Solution:** The city will consider participation in the Community Rating System and join if warranted.	1. No Progress 2. Evaluating if warranted	1. Include in 2025 HMP 2. Keep as is. 3. N/A
2020-Passaic-008	Identify locations for snow storage	Severe Winter Storm	Public Works, Administration	**Problem:** Heavy snowfall events result in need for snow storage to keep roadways open. **Solution:** The city will identify potential locations for snow storage and secure sites.	1. In Progress 2. Identifying areas for snow stockpile.	1. Include in 2025 HMP 2. Keep as is. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Passaic-009	Flood study for flood prone areas	Flood	Floodplain Administrator, Engineering	**Problem:** Benson and Main, South and 10, and South and 11 are flood prone. South and 10 and South and 11 are impacted by riverine flooding. **Solution:** The city will conduct flood studies at the flood prone locations to determine the cause of flooding and potential mitigation actions. The city will then carry out the selected identified actions. Could potentially build retaining wall or do stormwater improvements.	1. In Progress 2. Hammond Avenue / Christopher Columbus Park flood study conducted and mitigation plans are in development. Passaic Ave & Van Houten NJ Transit Underpass flood study conducted and final design services for mitigation to be awarded. McDonald Brook flood study ongoing.	1. Include in 2025 HMP 2. Keep as is. 3. N/A
2020-Passaic-010	Update municipal codes	Flood	Administration	**Problem: T**he City has municipal codes which may be updated to reflect best management practices for mitigation. **Solution:** The City will review ordinances and update as necessary to incorporate hazard mitigation.	1. Ongoing Capability 2. New stormwater ordinance passed New FEMA Flood control ordinance passed	1. Include in 2025 HMP 2. Keep as is. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Passaic-011	Conduct flood outreach to Pulaski Elementary School	Flood	Floodplain Administrator, Board of Education	**Problem:** The Number 8, Pulaski E.S., on 140 Street is located in the 100-year floodplain. The school is owned and operated by the Board of Education. **Solution:** The FPA will conduct outreach to the Board of Education to discuss flood exposure and possible mitigation actions.	1. In Progress 2. The City is communicating with the Board of Education on establishing mitigation actions to address flood exposure such as to reverse 911 and facilitate evacuation.	1. Include in 2025 HMP 2. Keep as is. 3. N/A

9.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Passaic 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 Passaic 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 City priorities.

Table 9-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 9-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 9-18. 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					
Drought	X				X					
Extreme Temperature	X				X					
Flood	X	X		X	X	X	X		X	X
Geological Hazards	X				X					
Severe Weather	X	X			X	X			X	X
Severe Winter Weather	X	X			X	X				X
Wildfire	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 9-19. 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-PassaicCity-001	Repetitive Loss Outreach	1	1	1	1	1	1	1	1	1	1	1	0	1	1	**13**	High
2025-PassaicCity-002	Strengthen City Building Infrastructure	1	1	1	1	1	0	1	1	1	1	1	0	1	1	**12**	High
2025-PassaicCity-003	McDonalds Brook Flood Control Project	1	1	1	0	0	1	1	1	1	1	1	0	1	1	**11**	High
2025-PassaicCity-004	Flood Insurance Outreach	0	1	1	1	1	1	1	1	1	0	1	1	0	1	**11**	High
2025-PassaicCity-005	CRS Participation	1	1	1	1	1	1	1	1	1	0	1	1	1	1	**13**	High
2025-PassaicCity-006	Snow Storage Locations	1	1	1	0	1	1	1	1	1	0	1	1	1	1	**12**	High
2025-PassaicCity-007	Flood Study	1	1	0	1	1	0	1	1	1	1	1	0	1	1	**11**	High
2025-PassaicCity-008	Update Municipal Codes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2025-PassaicCity-009	Flood Outreach at Pulaski Elementary School	1	1	1	1	0	1	1	1	1	0	1	1	1	1	**12**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-PassaicCity-001. Repetitive Loss Outreach

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Homeowners
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The City of Passaic has 10 repetitive loss properties and three severe repetitive loss properties. The City has previously conducted outreach, but property owners were not issued. Frequent flooding has resulted in damages to these structures as documented by paid NFIP claims. Community members are unaware of the resources available to them should they become affected by flooding.
Description of the Solution:	Conduct outreach to the property owners and provide information on mitigation alternatives including elevation, acquisition, and floodproofing the structure. If the homeowners choose elevation or acquisition, the City will develop a FEMA grant application to obtain funding to implement the project.
Estimated Cost:	High
Potential Funding Sources:	City Budget, FEMA FMA and HMGP
Implementation Timeline:	Within 5 years
Goals Met:	1,2,3,4,5,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2025-PassaicCity-002. Strengthen City Building Infrastructure

Lead Agency:	City Engineering
Supporting Agencies:	-
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather
Description of the Problem:	The infrastructure of City buildings is not only outdated but also highly susceptible to damage during severe weather and winter weather events. This aging infrastructure urgently requires maintenance and upgrades to ensure the safety and resilience of these buildings in the face of increasingly frequent and intense weather conditions.
Description of the Solution:	The Passaic City Engineering Department will undertake a comprehensive inspection of all roofs, masonry, and windows at City buildings to identify and address any leakage issues. This proactive measure aims to enhance the resilience of these structures against severe weather and winter storm events. By thoroughly assessing and repairing any vulnerabilities, the City can ensure that its buildings are better equipped to withstand the elements, thereby safeguarding the safety and functionality of these critical facilities. This initiative is part of a broader effort to modernize and maintain the City's infrastructure, ensuring long-term durability and reliability.
Estimated Cost:	Medium
Potential Funding Sources:	City budget, FEMA HMGP
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,6
Benefits:	By strengthening government structures, the City ensures that its buildings remain secure and operational during adverse conditions.
Impact on Socially Vulnerable Populations:	Improved building conditions can lead to better access to essential services, ensuring that vulnerable groups receive the support they need during emergencies.
Impact on Future Development:	Upgraded infrastructure sets a higher standard for future development, encouraging the construction of more resilient and sustainable buildings.
Impact on Critical Facilities/Lifelines:	Strengthened government structures ensure that critical facilities, such as emergency services, remain operational during severe weather, providing uninterrupted support to the community.
Impact on Capabilities:	Proactive maintenance and upgrades improve the City's overall emergency preparedness and response capabilities.
Climate Change Considerations:	Improving infrastructure to withstand severe weather aligns with climate change adaptation strategies, making the City more resilient to future climate impacts.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection, Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	Problem continues
Rebuild facilities to new standards	Costly and not necessary
Build secondary facility protected to new standards	Costly and not necessary

Action 2025-PassaicCity-003. McDonalds Brook Flood Control Project

Lead Agency:	City Engineering
Supporting Agencies:	Passaic County
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	Veterans Memorial Park faces significant challenges due to the long-term effects of repeated flooding. This flooding has caused extensive damage to the 50-acre public open space, raised safety concerns, and led to environmental issues in McDonalds Brook and Hughes Lake. The City has identified that repair and mitigation solutions are needed to restore the park's infrastructure, enhance public safety, and address the environmental degradation in the affected water bodies.
Description of the Solution:	Although Phases 1-5 of the original McDonalds Brook Flood Control Project have been completed, the City has recently awarded a design contract to French & Parrello to develop comprehensive repair and mitigation solutions for McDonalds Brook. This initiative aims to address the long-term flooding issues at Veterans Memorial Park, restoring and protecting the 50-acre park. The project will ensure the safety of public open spaces and tackle environmental concerns in McDonalds Brook and Hughes Lake. The proposed solutions will enhance flood control, prevent future damage, and improve the overall resilience of the park's infrastructure and natural resources.
Estimated Cost:	High
Potential Funding Sources:	CDBG, NJDEP, Passaic County Open Space, Green Acres
Implementation Timeline:	1-5 years
Goals Met:	2,4,8
Benefits:	The project will significantly enhance flood control measures, protecting Veterans Memorial Park from future flooding. This will restore and preserve the park's infrastructure and natural resources, ensuring it remains a safe and enjoyable space for the community. Additionally, the project will address environmental concerns in McDonalds Brook and Hughes Lake, promoting ecological health and sustainability.
Impact on Socially Vulnerable Populations:	By mitigating flooding risks, the project will provide a safer environment for socially vulnerable populations who rely on public open spaces for recreation and community activities. Improved infrastructure will ensure that these groups have continued access to safe and well-maintained facilities.
Impact on Future Development:	The successful implementation of this project will set a precedent for future development, demonstrating the City's commitment to resilient and sustainable infrastructure. It will encourage new investments and development projects that prioritize flood mitigation and environmental protection.
Impact on Critical Facilities/Lifelines:	Enhancing flood control at Veterans Memorial Park will protect critical facilities and lifelines within the park and surrounding areas. This will ensure the continuity of essential services and reduce the risk of disruptions during severe weather events.
Impact on Capabilities:	The project will improve the City's overall capabilities in managing and mitigating flood risks. By addressing existing vulnerabilities, the City can allocate resources more efficiently and focus on other critical areas during emergencies. This proactive approach will strengthen the City's emergency preparedness and response capabilities.

Climate Change Considerations:	The project aligns with climate change adaptation strategies by enhancing the resilience of the park's infrastructure to withstand future climate impacts. Improved flood control measures will help mitigate the effects of increased precipitation and extreme weather events, contributing to long-term sustainability and environmental stewardship.	
Mitigation Category	Structural and Infrastructure Project	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	Problem continues
	Use temporary flood barriers, such as sandbags or inflatable barriers, during flood events.	Temporary barriers are less effective than permanent solutions and may not provide adequate protection during severe flooding.
	Move Veterans Memorial Park to a different location that is not prone to flooding.	Relocating a 50-acre park is logistically challenging and would require finding a suitable new location, which may not be available.

Action 2025-PassaicCity-004. Flood Insurance Outreach

Lead Agency:	Floodplain Administrator
Supporting Agencies:	-
Hazard(s) of Concern:	Flood
Description of the Problem:	Flood insurance rates are on the rise, and upcoming remapping efforts may further increase the necessity for flood insurance coverage. This situation poses a significant financial burden on residents, particularly those in newly designated flood zones who may be unprepared for the additional costs.
Description of the Solution:	To address this issue, the City's Floodplain Administrator will launch a comprehensive outreach campaign to encourage residents to purchase flood insurance. This campaign will include educational workshops, informational brochures, and community meetings to raise awareness about the importance of flood insurance and how it can protect against financial losses. By proactively informing residents about the benefits and necessity of flood insurance, the City aims to ensure that more households are adequately prepared for potential flooding events, thereby enhancing community resilience and financial security
Estimated Cost:	Low
Potential Funding Sources:	City budget
Implementation Timeline:	1-2 years
Goals Met:	1,2,3,4,7
Benefits:	The outreach campaign to encourage residents to purchase flood insurance will significantly enhance community resilience. By increasing the number of insured households, the City can reduce the financial impact of flooding on residents, ensuring quicker recovery and stability after flood events.
Impact on Socially Vulnerable Populations:	This initiative will particularly benefit socially vulnerable populations who may be less aware of the risks and benefits of flood insurance. By providing targeted education and support, the City can help these groups protect their homes and assets, reducing their vulnerability to financial hardship caused by flooding.
Impact on Future Development:	Promoting flood insurance awareness will foster a culture of preparedness and resilience, influencing future development practices. Developers and residents will be more likely to consider flood risks and mitigation measures, leading to safer and more sustainable community growth.
Impact on Critical Facilities/Lifelines:	By encouraging widespread adoption of flood insurance, the City can ensure that critical facilities and lifelines, such as hospitals, schools, and emergency services, are better protected. This will help maintain essential services during and after flood events, supporting overall community well-being.
Impact on Capabilities:	The outreach campaign will enhance the City's capabilities in disaster preparedness and response. Educating residents about flood insurance will empower them to take proactive steps in protecting their properties, reducing the burden on emergency services and allowing for more efficient resource allocation during flood events.
Climate Change Considerations:	As climate change increases the frequency and severity of flooding, promoting flood insurance becomes even more crucial. This project aligns with climate adaptation strategies by ensuring that residents are financially prepared for future flood risks, contributing to long-term community resilience and sustainability.
Mitigation Category	Education and Awareness Program
CRS Category	Emergency Services, Public Information
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Offer financial subsidies to residents for implementing flood mitigation measures such as elevating homes, installing flood barriers, or improving drainage systems.	Subsidizing flood mitigation measures can be extremely costly for the City, potentially exceeding available budgetary resources.
	Create a municipal flood relief fund to provide financial assistance to residents affected by flooding.	Maintaining a flood relief fund requires continuous funding, which may not be sustainable in the long term, especially with increasing flood events due to climate change.

Action 2025-PassaicCity-005. CRS Participation

Lead Agency:	Floodplain Administrator
Supporting Agencies:	-
Hazard(s) of Concern:	Flood
Description of the Problem:	Although the City of Passaic has flood exposure, the City does not participate in the Community Rating System (CRS) program. Flood insurance premiums continue to rise.
Description of the Solution:	The City will evaluate the benefits and costs of participating in CRS program. If feasible, the City will join the program and begin implementing standards that exceed NFIP requirements.
Estimated Cost:	Low
Potential Funding Sources:	City Budget
Implementation Timeline:	1-2 years
Goals Met:	5
Benefits:	The participation in the CRS benefits communities by offering discounted rates for flood insurance premiums, which addresses the three goals of the program: reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the National Flood Insurance Program, and foster comprehensive floodplain management.
Impact on Socially Vulnerable Populations:	The participation in the Community Rating System (CRS) benefits communities by offering discounted rates for flood insurance premiums, which may be more affordable for some socially vulnerable populations.
Impact on Future Development:	Future development would need to adhere to any increased standards established as part of joining the CRS program such as increased freeboard and elevation certificate requirements.
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	This action would enhance the City's floodplain management 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. As sea level rises due to climate change, the area of the flood hazard may expand. These changes are likely to increase flood risks.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information
Priority	High

Alternatives:

Action	Evaluation
No action	-
Adopt aspects of the CRS program into the floodplain management program	Increased floodplain management capabilities but no reduction in flood insurance premiums
Abandon any floodplain management practices not required by NFIP	Reduction in floodplain management capabilities and increase in risk.

Action 2025-PassaicCity-006. Snow Storage Locations

Lead Agency:	Public Works
Supporting Agencies:	Administration
Hazard(s) of Concern:	Severe Winter Weather
Description of the Problem:	Heavy snowfall events create a significant challenge for the City, as the accumulation of snow on roadways can impede traffic flow and compromise public safety. The lack of designated snow storage areas exacerbates this issue, making it difficult to keep roads clear and accessible during and after severe winter weather.
Description of the Solution:	To address this problem, the City will proactively identify and secure potential locations for snow storage. This initiative will involve a thorough assessment of available sites that can accommodate large volumes of snow without disrupting daily activities or causing environmental concerns. By establishing designated snow storage areas, the City aims to ensure that roadways remain open and safe for travel, even during heavy snowfall events. This strategic approach will enhance the City's ability to manage winter weather conditions effectively, improving overall public safety and mobility.
Estimated Cost:	Medium
Potential Funding Sources:	City Budget
Implementation Timeline:	1-2 years
Goals Met:	1,5,6
Benefits:	Identifying and securing designated snow storage locations will ensure that roadways remain clear and safe during heavy snowfall events. This proactive measure will enhance public safety, reduce traffic disruptions, and improve overall mobility within the City. Additionally, it will streamline snow removal operations, making them more efficient and cost-effective.
Impact on Socially Vulnerable Populations:	By maintaining open and accessible roadways, the City will ensure that socially vulnerable populations, including the elderly and those with limited mobility, can safely travel during winter weather conditions. This initiative will also facilitate the delivery of essential services, such as emergency response and healthcare, to these groups.
Impact on Future Development:	Establishing a robust snow storage plan will set a precedent for future urban planning and development. It will encourage the integration of snow management strategies into new projects, promoting sustainable and resilient infrastructure that can withstand severe winter weather.
Impact on Critical Facilities/Lifelines:	Keeping roadways open during heavy snowfall is crucial for the operation of critical facilities and lifelines, such as hospitals, fire stations, and utility services. This project will ensure that these essential services remain accessible and functional, even during severe winter storms, thereby safeguarding public health and safety.
Impact on Capabilities:	The City's ability to manage heavy snowfall events will be significantly enhanced by this initiative. By having designated snow storage areas, the city can respond more quickly and effectively to snowstorms, reducing the strain on public works and emergency services. This will improve overall disaster preparedness and response capabilities.
Climate Change Considerations:	As climate change may lead to more unpredictable and severe winter weather, having a comprehensive snow storage plan is increasingly important. This project aligns with climate adaptation strategies by ensuring that the City is prepared for extreme snowfall events, thereby enhancing long-term resilience and sustainability.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures, Emergency Services
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Use snow-melting machines to melt snow directly on-site, converting it to water that can be drained away.	now-melting machines are expensive to purchase, operate, and maintain, making this solution cost-prohibitive for large-scale use.
	Utilize public spaces such as parks, playgrounds, and parking lots for temporary snow storage.	Using these spaces for snow storage can disrupt their intended use, inconveniencing residents and limiting access to recreational areas.

Action 2025-PassaicCity-007. Flood Study

Lead Agency:	Floodplain Administrator
Supporting Agencies:	City Engineering
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	There are flood-prone areas in the City, including multiple locations which are located in the floodplain. These locations are Benson and Main, South and 10, and South and 11. Additionally, South and 10, and South and 11 are impacted by riverine flooding.
Description of the Solution:	The City will conduct flood studies at the flood prone locations to determine the cause of flooding and potential mitigation actions. The City will develop specific mitigation solutions for flood-prone road systems (roads, bridges, intersections, drainage, etc.).
Estimated Cost:	Medium
Potential Funding Sources:	PDM, FMA
Implementation Timeline:	Within 5 years
Goals Met:	1,2,4,5,6
Benefits:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding along flood-prone roads.
Impact on Future Development:	This action will identify measures to protect infrastructure in the transportation lifeline, which will lead to the assurance of clear roadways for evacuations, regular travel, and emergency responses.
Impact on Critical Facilities/Lifelines:	Not applicable
Impact on Capabilities:	Future development in the impacted area will be less likely to be flooded.
Climate Change Considerations:	A warmer atmosphere means storms have the potential to be more intense and occur more often, including increased periods of intense rain events.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures, Property Protection
Priority	High

Alternatives:

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

Action 2025-PassaicCity-008. Update Municipal Codes

Lead Agency:	Administration
Supporting Agencies:	-
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The City's current municipal codes may not fully reflect the latest best management practices for hazard mitigation. This gap can leave the community vulnerable to various risks, as outdated regulations may not adequately address contemporary challenges posed by natural and man-made hazards.
Description of the Solution:	To enhance community resilience and safety, the City will undertake a comprehensive review of its ordinances. This process will involve updating the municipal codes to incorporate the latest best management practices for hazard mitigation. By aligning local regulations with current standards, the City aims to better protect its residents, infrastructure, and environment from potential hazards. This proactive approach will ensure that the City's policies are robust, forward-thinking, and capable of addressing future risks effectively
Estimated Cost:	Staff time
Potential Funding Sources:	City Budget
Implementation Timeline:	1-2 years
Goals Met:	1,2,4,5
Benefits:	Updating the municipal codes to reflect best management practices for hazard mitigation will significantly enhance the City's resilience to various risks. This proactive measure will ensure that the community is better protected against natural and man-made hazards, leading to increased safety and peace of mind for all residents.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will benefit greatly from updated municipal codes, as these changes will ensure that hazard mitigation measures are inclusive and effective. By addressing the specific needs of these groups, the City can reduce their vulnerability and enhance their overall safety and well-being.
Impact on Future Development:	Incorporating best management practices into municipal codes will set a higher standard for future development. This will encourage the construction of safer, more resilient buildings and infrastructure, fostering sustainable growth and reducing the risk of damage from hazards.
Impact on Critical Facilities/Lifelines:	Critical facilities and lifelines will be better protected under the updated codes, ensuring their continued operation during and after hazard events. This will help maintain essential services, such as healthcare, emergency response, and utilities, which are vital for community resilience.
Impact on Capabilities:	The City's capabilities in hazard mitigation and emergency response will be significantly enhanced. Updated codes will provide a clear framework for implementing effective mitigation strategies, improving the City's preparedness and ability to respond to emergencies efficiently.
Climate Change Considerations:	By aligning municipal codes with best management practices, the City will be better equipped to address the impacts of climate change. This includes adapting to increased frequency and severity of weather events, ensuring that the community remains resilient and sustainable in the face of evolving climate challenges.
Mitigation Category	Local Plans and Regulation
CRS Category	Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Use temporary measures to mitigate hazards as they arise.	Temporary measures do not provide long-term solution and may only offer limited protection during hazard events.
	Depend solely on state or federal regulations for hazard mitigation without updating local municipal codes.	State and federal regulations may not address the unique needs and vulnerabilities of the City, leading to inadequate local protection.

Action 2025-PassaicCity-009. Flood Outreach at Pulaski Elementary School

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Board of Education
Hazard(s) of Concern:	Flood
Description of the Problem:	Number 8, Pulaski Elementary School, located on 140 Street, is situated within the 100-year floodplain, making it highly susceptible to flooding. This vulnerability poses significant risks to the safety of students, staff, and the school's infrastructure. As the school is owned and operated by the Board of Education, it is crucial to address these risks to ensure a safe learning environment and prevent potential disruptions to educational activities.
Description of the Solution:	To mitigate the flood risks faced by Pulaski Elementary School, the Floodplain Administrator (FPA) will initiate a comprehensive outreach program with the Board of Education. This program will focus on discussing the school's flood exposure and exploring possible mitigation actions. The FPA will provide expert guidance on flood risk management, including structural and non-structural measures, to enhance the school's resilience. Potential mitigation actions may include elevating critical infrastructure, improving drainage systems, and implementing flood barriers. By collaborating closely with the Board of Education, the FPA aims to develop and implement effective strategies that will protect the school community and ensure the continuity of educational services during flood events.
Estimated Cost:	Low
Potential Funding Sources:	City budget, PDM, FMA, HMGP
Implementation Timeline:	1-2 years
Goals Met:	1,2,3,4,5
Benefits:	Mitigating flood risks at Pulaski Elementary School will ensure a safer environment for students and staff, reducing the likelihood of disruptions to educational activities. This proactive approach will protect the school's infrastructure, preserving valuable resources and minimizing repair costs after flood events.
Impact on Socially Vulnerable Populations:	By addressing flood risks at Pulaski Elementary School, the project will provide a safer and more secure learning environment for all students, including those from socially vulnerable populations. Ensuring the continuity of education during flood events is crucial for maintaining stability and support for these communities.
Impact on Future Development:	Implementing effective flood mitigation measures at the school sets a positive example for future development projects. It demonstrates the importance of incorporating resilience and sustainability into planning and construction, encouraging other institutions to adopt similar practices.
Impact on Critical Facilities/Lifelines:	Protecting Pulaski Elementary School from flooding ensures that this critical educational facility remains operational during and after flood events. This continuity is vital for the community, as schools often serve as emergency shelters and hubs for relief efforts during disasters.
Impact on Capabilities:	The outreach and collaboration between the Floodplain Administrator and the Board of Education will enhance the City's overall capabilities in flood risk management. This project will build expertise and foster a culture of preparedness, improving the City's ability to respond to and recover from flood events.
Climate Change Considerations:	As climate change increases the frequency and severity of flooding, this project aligns with broader climate adaptation strategies. By proactively addressing flood risks, the City is taking important steps to ensure long-term resilience and sustainability, protecting the school and its community from future climate impacts.
Mitigation Category	Education and Awareness Programs
CRS Category	Emergency Services, Public Information
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Move Pulaski Elementary School to a location outside the 100-year floodplain.	Relocating an entire school is extremely expensive, involving the acquisition of new land, construction of new facilities, and logistical challenges of moving students and staff.
	Depend solely on flood insurance to cover damages and losses incurred by the school during flood events.	Insurance policies may have limitations and exclusions that do not fully cover all damages, leading to significant out-of-pocket expenses for repairs and recovery.

10. CITY OF PATERSON

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

10.1 HAZARD MITIGATION PLANNING TEAM

The City of Paterson identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many City departments. The Office of Emergency Management represented the community on the Passaic 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 10-1 summarizes City officials who participated in the development of the annex and in what capacity. Additional documentation of the City's planning activities through Planning Partnership meetings is included in Volume I.

Table 10-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Troy Ayers, OEM Coordinator Address: 300 McBride Ave, Paterson, NJ 07501 Phone Number: 973-803-1730 Email: tayers@patersonnj.gov	Name/Title: Captain Herb Eggers, OEM Address: 300 McBride Ave, Paterson, NJ 07501 Phone Number: 973-868-1551 Email: heggers@patersonnj.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Jerry Lobozzo, Acting Construction Official Address: 300 McBride Ave, Paterson, NJ 07501 Phone Number: 973-321-1600 Email: jlobozzo@patersonnj.gov	
Additional Contributors	
Name/Title: Troy Ayers, Coordinator, Office of Emergency Management Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop; provided information on hazard event history, and previous mitigation status.	
Name/Title: Captain Herb Eggers, Office of Emergency Management Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff.	
Name/Title: Deborah Bravo Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Detective Joseph Ricciardi, Office of Emergency Management Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: James McGrath, P.E., Municipal Engineer Method of Participation: Participated in the planning process and provided updated NFIP information.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Jose Castro, Chief, Fire Department Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Libra Jones, Deputy Coordinator, Office of Emergency Management Method of Participation: Attended Planning Partnership Kickoff and Risk Assessment/Mitigation Strategy Workshop; Provided information on the hazard event history, capability assessment, critical facilities, mitigation actions and the NFIP summary.	
Name/Title: Michael Sanginario, Police Department Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Tyrome Joyner, Office of Emergency Management Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Jerry Lobozzo, (Former) Construction Official Method of Participation: Provided information on building permits and development since last planning process.	

10.2 COMMUNITY PROFILE

10.2.1 Brief History

Paterson, also known as the Silk City, became an incorporated city in 1851. Its location along the Passaic River and near the Great Falls provided many industries the opportunity to harness a source of energy to power their factories. These industries flourished and with their growth, came the beginnings of the Industrial Revolution in the United States (Passaic County HMP 2020).

10.2.2 Location

According to the U.S. Census Bureau, the City has a total land area of 8.074 square miles, of which 8.428 square miles is land and 0.276 square miles is water. It is bordered by City of Clifton and Borough of Woodland Park to the South, Borough of Prospect Park to the west, and Bergen County to the north and east.

10.2.3 Governing Body Format

Paterson is governed by the Mayor/Council form of government under the Faulker Act (Passaic County HMP 2020).

10.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Paterson was 159,732, an 8.8 percent increase 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 2020 U.S. Census indicates that 7.9 percent of the population is 5 years of age or younger, 11.5 percent is 65 years of age or older,22.1 percent is non-English speaking, 23.5 percent is below the poverty threshold, and 8.1 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2022 Point-in-Time-Data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $79,955, and the County sees a labor force participation rate of 66 percent. Passaic County faces a lower-than-average household income compared to the state average of $96,346, and a higher-than-average poverty rate at 14 percent (compared to the state average of 10 percent) (United for ALICE 2022).

10.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Paterson 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 Paterson to identify opportunities for integrating mitigation concepts into ongoing City procedures.

10.3.1 Planning and Regulatory Capability and Integration

Table 10-2 summarizes the planning and regulatory tools that are available to Paterson.

Table 10-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14; International Building Code – New Jersey Edition, 2018. NJAC 5:24-3; Chapter	State and Local	Economic Development
How has or will this be integrated with the HMP and how does this reduce risk? The State Uniform Construction Code Enforcing Agency, also known as the "Paterson Construction Code Enforcing Agency," as heretofore established, is hereby continued. The agency shall be a subdivision in the Community Improvements Division of the Department of Community Development. The enforcing agency shall consist of a Construction Official, building subcode official, plumbing subcode official, electrical subcode official, fire protection subcode official and other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.				
Zoning/Land Use Code	Yes	Chapter 483 – Zoning and Land Development	Local	Planning Department
How has or will this be integrated with the HMP and how does this reduce risk? The ordinance includes natural hazard overlay zones, as indicated by FEMA maps, which set specific conditions for land use within these zones. It also prohibits development within, or the filling of, wetlands, floodways, and floodplains, requiring a DEP permit for any such activities. Additionally, a zoning code is in place to encourage resilient development by offering density bonuses for projects located outside of natural hazard areas.				
Subdivision Code	Yes	P.L.1975, c.291 (C.40:55D-47):40:55D-37; Chapter 297-Subdivision of Land	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? The purpose and intent of this chapter shall be to provide rules, regulations and standards to guide land subdivision in the city in order to promote the public health, safety, convenience and general welfare of the municipality. It shall be administered to ensure the orderly growth and development, the conservation, protection and proper use of land and adequate provision for public facilities, circulation, utilities and services.				
Site Plan Code	Yes	MLUL NJ 40:55d; Chapter 297-Subdivision of Land, Article II Sketch Plat Procedure	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? Any applicant proposing to subdivide land within the city shall, prior to subdividing land, submit to the Planning Board copies of a sketch plat of the proposed subdivision for the purposes of classification and preliminary discussions. The Planning Board, or its Subdivision Committee is so delegated to said Committee, shall determine if a sketch plat conforms to the definition of a "minor subdivision." Minor subdivision approval shall be granted or denied by the Planning Board within forty-five (45) days of submission of a completed application or within such further time as may be consented to by the applicant. All subdivisions of land within the city are subject to review buy the Passaic County Planning Board. Approval by the Passaic County Planning Board is required if said subdivision falls within the jurisdiction of the county				
Stormwater Management Code	Yes	Chapter 433 – Stormwater Management	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this chapter to establish minimum stormwater management requirements and controls for major development.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 219- Flood Damage Prevention	Local	Floodplain Manager
How has or will this be integrated with the HMP and how does this reduce risk? Last updated in March 2020. Promotes the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed: A. To protect human life and health. B. To minimize expenditure of public money for costly flood control projects. C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public. D. To minimize prolonged business interruptions. E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard. F. To help maintain a stable tax base by providing for the secondary use and development of areas od special flood hazard so as to minimize future flood blight areas. G. To ensure that potential buyers are notified that property is in an area of special flood hazard. The ordinance does not follow the latest model code coordinated ordinance from the New Jersey Department of Environmental Protection (NJDEP) and will require update.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Chapter 473 Water, 1979	Local	Administration
How has or will this be integrated with the HMP and how does this reduce risk? Whenever the amount of water impounded in the storage reservoirs supplying users of water in the city has fallen below 50 percent of full storage capacity or whenever the engineer in charge of water being supplied to the city shall certify that an emergency exists in such water supply or the water of the Passaic River is at a low ebb, the Mayor may, for the protection, health, safety and general welfare of the citizens and residents of the city, proclaim the existence of a water emergency and prescribe regulations to: A. Prohibit the use of water from the city supply for any purpose not necessary to the health, safety, and welfare of the public. B. Allocate and prorate the available water supplies. C. Reduce consumption by users. D. Prevent waste for the period of duration of such emergency.				

	Jurisdiction has this?	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				
Comprehensive/Master Plan	Yes	City of Paterson Master Plan, 2014	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? To evaluate and synchronize the many previous planning efforts that have been undertaken in the City and provide a comprehensive Plan that synthesizes all the previous plans, while also addressing new issues and circumstances.				
Capital Improvement Plan	Yes	City of Paterson Master Plan, 2014	Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? To evaluate and synchronize the many previous planning efforts that have been undertaken in the City and provide a comprehensive Plan that synthesizes all the previous plans, while also addressing new issues and circumstances.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	Yes	New Jersey Department of Environmental Protection Storm Water Management Rule (N.J.A.C. 7:8, et seq.)	State and Local	Department of Public Works

How has or will this be integrated with the HMP and how does this reduce risk?

- Several minimum goals for Tier A municipal stormwater management plans were identified in the New Jersey Department of Environmental Protection Guidance document and include:
- Reduce flood damage, including damage to life and property;
- Minimize, to the extent practical, any increase in stormwater runoff from any new development
- Reduce soil erosion from any development or construction project
- Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- Maintain groundwater recharge;
- Prevent, to the greatest extent feasible, an increase in nonpoint source pollution;
- Maintain the integrity of stream, channels for their biological functions, as well as for drainage;
- Minimize pollutants in stormwater runoff from new and existing development in order to restore, enhance and maintain the chemical, physical, and biological integrity of the waters of the State, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water;
- Protect public safety through the proper design and operation of stormwater management basins.

	Jurisdiction has this?	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
Open Space Plan	Yes	Parks and Open Space Vision 2021	Local	-
How has or will this be integrated with the HMP and how does this reduce risk? Public open spaces in Paterson should be designed, maintained, and programmed to support: • Economic growth; well-designed, well-maintained outdoor public spaces enhance tourism, downtown and neighborhood revitalization, and property values. • Health: safe, usable outdoor public space encourages fitness and prevents obesity and diabetes. New facilities and outdoor programs led by health care organizations are some of the available options. • Environmental Protection and Flood Prevention: urban trees, wetlands, and shoreline buffers reduce heat island effects, flooding and combined sewer overflow. • Education: adequate outdoor recreation space benefits students and increases the potential for outdoor environmental education (for jobs of the future and for understanding of global climate issues). • Community Development: well-programmed and safe spaces, supported by active community groups, promote community cohesion and reduce crime.				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	Yes	City of Paterson Forestry Management Plan	Local	Planning
A community forest management plan can reduce hazard risk in a hazard mitigation plan by providing structured procedures and resources to effectively respond to and manage emergencies for Paterson's forests, thereby minimizing potential damage and enhancing community resilience.				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Stormwater Pollution Prevention Plan, 2005	State and Local	Department of Public Works
How has or will this be integrated with the HMP and how does this reduce risk? Identifies stormwater programs, state basic requirements, local ordinances and enforcement, and the local stormwater management processes.				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	City of Paterson Emergency Operations Plan, 2014	Local	OEM
An emergency operations plan can reduce hazard risk in a hazard mitigation plan by providing structured procedures and resources to effectively respond to and manage emergencies, thereby minimizing potential damage and enhancing community resilience.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Public Health Plan	Yes	Paterson Community Health Improvement Plan	Local	Division of Health
How has or will this be integrated with the HMP and how does this reduce risk? Focuses on the development of strategies to address health disparities within the City.				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

10.3.2 Development and Permitting Capability

Table 10-3 summarizes the capabilities of Paterson to oversee and track development.

Table 10-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Planning Board and permitting programs
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	City-based GIS system
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	Vacant property layer
Describe the level of buildout in your jurisdiction.	N/A	Fully built out

10.3.3 Administrative and Technical Capability

Table 10-4 summarizes potential staff and personnel resources available to Paterson and their current responsibilities that contribute to hazard mitigation.

Table 10-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Planning and Zoning Board
Zoning Board of Adjustment	Yes	Zoning Board of Adjustment
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	The Paterson Environmental Commission seeks to protect and improve the quality of our natural resources by addressing the City Council, the planning board, and the Mayor on actions and policies of sustainability. Through education and outreach, the Commission seeks to inspire and empower the community, both residential, commercial, and globally to incorporate environmentally responsible practices in their daily lives. The Paterson Green Team was adopted by City Council Resolution in December 2019 and has since been working with Paterson mayor Andres Sayegh, City Council members, Department of Public Works, and residents to support various green initiatives throughout the City.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	The Department of Economic Development is responsible for establishing Paterson as an economic engine in the Northern New

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		Jersey region in order to enhance the quality of life for all who live, work and play in the city. Working with the Mayor, his administration and the City Council, the Department is responsible for developing an economic vision for a sustainable and prosperous Paterson. The Urban Enterprise Zone program is part of the Department of Economic Development. The Urban Enterprise Zone Program was created in 1986 and exists to foster an economic climate that revitalizes urban communities. The program works to stimulate growth in the City by encouraging businesses to develop and create private-sector jobs through public and private investment.
Public Works/Highway Department	Yes	The Department of Public Works is responsible for all matters relating to the construction, management, maintenance, and operation of physical properties of the City. In addition, Public Works helps to prepare plans, specifications and the letting and performance of contracts for all city Public Works or improvements. Public Works also oversees and provides all engineering and mechanical services required by departments, offices, or agencies of the City government.
Construction/Building/Code Enforcement Department	Yes	Department of Community Development
Emergency Management/Public Safety Department	Yes	The mission of the Public Safety Department is to protect and serve the residents of Paterson through the work of four divisions which include the Police Division, Fire Division, Animal Control and the Office of Emergency Management.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Department of Public Works
Mutual aid agreements	Yes	Paterson Fire Department
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	Yes	Passaic Valley Water Commission provides water for the City. The mission of the Department of Community Development is to revitalize neighborhoods in the City of Paterson. The Department administers the funding received annually by the United States Department of Housing and Urban Development.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Economic Development, Planning and Zoning Board
Engineers or professionals trained in building or infrastructure construction practices	Yes	City Engineer
Planners or engineers with an understanding of natural hazards	Yes	Economic Development, Planning and Zoning Board

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
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	Yes	City Engineer
Staff that work with socially vulnerable populations or underserved communities	Yes	Paterson Council on the Aging, and Paterson Council on the Disabled
Environmental scientists familiar with natural hazards	No	-
Surveyors	No	-
Emergency manager	No	-
Grant writers	Yes	Ryan White, Grants Office
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

10.3.4 Fiscal Capability

Table 10-5 summarizes financial resources available to Paterson.

Table 10-5. Fiscal Capabilities

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

10.3.5 Education and Outreach Capability

Table 10-6 summarizes the education and outreach resources available to Paterson.

Table 10-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Public Information Officer The City of Paterson uses various communications tools to share information with residents. Communication tools include a website, social media, municipal channels, phone calls, emails, and outreach through community partners.
Personnel skilled or trained in website development	Yes	Coordinator and Deputy Coordinators skilled in website development
Hazard mitigation information available on your website	No	-
Social media for hazard mitigation education and outreach	Yes	Mayor uses social media for various announcements
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	The City of Paterson updates their emergency communications plan to utilize a variety of communication channels. Including but not limited to: Social Media, Newspapers, Radio, Television, Cablevision, Route Distribution of Pamphlet, Posters, Emergency Alert System (EAS), etc.
Natural disaster/safety programs in place for schools	Yes	In progress. Working with the Superintendent and Safety Director of Schools on programs.
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	Paterson Council on the Aging, and Paterson Council on the Disabled
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	The City of Paterson Office of Emergency Management hosts several information events and trainings in conjunction with the Paterson Fire Department and Red Cross.

10.3.6 Community Classifications

Table 10-7 summarizes classifications for community programs available to Paterson.

Table 10-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	2	-
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Silver	October 27,2023
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

10.3.7 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 10-8 summarizes the adaptive capacity for each identified hazard of concern and the City’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 10-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

10.4 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 10-1 is responsible for maintaining this information.

10.4.1 NFIP Statistics

Table 10-9 summarizes the NFIP policy and claim statistics for Paterson.

Table 10-9. Paterson NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**682**
Total Loss Payments	**$32,173,512**
# Repetitive Loss Properties (NFIP definition)	**149**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**48**
# Severe Repetitive Loss Properties (FMA definition)	**48**

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: NJOEM 2024

10.4.2 Flood Vulnerability Summary

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

Table 10-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	This information is provided on the FEMA Flood Map, January 27, 2016
Do you maintain a list of properties that have been damaged by flooding?	Yes – maintained by the Department of Economic Development
Do you maintain a list of property owners interested in flood mitigation?	Yes – maintained by the Department of Economic Development
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	In accordance with FEMA Unit 8
How do you make Substantial Damage determinations?	In accordance with FEMA Unit 8
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown

NFIP Topic	Comments
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	Economic Development – Blue Acres Funding – As of March 2020, 51 Residential Properties
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?	The Department of Public Works
Are any certified floodplain managers on staff in your jurisdiction?	Jerry Lobozzo, Construction Official
Do you have access to resources to determine possible future flooding conditions from climate change?	Collaboratively with Planning/Zoning and Building, we can use the data and mapping that we have to determine this.
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?	Yes, the Engineering Department does not have any training related to this and would benefit from it
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	The Engineering Department has GIS and mapping capabilities, as well as the ability to pull permits and perform inspections.
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	In accordance with FEMA Unit 8
What are the barriers to running an effective NFIP program in the community, if any?	The City of Paterson is a financially distressed City and does not have the funding to keep the staff to fully monitor and implement an NFIP program.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	None are noted
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	The Engineering Department is unaware of the most recent CAC/CAV visit.
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 219 – Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	Adopted 09/25/2007 by Ordinance No. 07-049; updated 03/10/2020 by Ordinance No. 20-014
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Does not meet requirements but will once City adopts Code Coordinated Ordinance
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?	City of Paterson Municipal Code, Chapter 483 - Zoning and Land Development - Article 5, Section 11 - Flood Damage Prevention
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, Paterson is interested in participating in the CRS

10.5 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 10-11 through Table 10-13.

Table 10-11. 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
2020				
Total Permits	5	5	0	10
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	13	2	16
Permits within SFHA	0	0	0	0
2022				
Total Permits	6	74	19	99
Permits within SFHA	0	0	0	0
2023				
Total Permits	20	69	19	108
Permits within SFHA	0	0	0	0

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

Table 10-12. Recent Major Development and Infrastructure from 2020 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
Hinchcliff Stadium	Commercial	1	186 Maple St	None	Complete

** Only location-specific hazard zones or vulnerabilities identified.*

Table 10-13. 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
None reported.					

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

10.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the City are shown in Figure 10-1 through Figure 10-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Paterson has significant exposure. The maps show the location of potential new development, where available.

Figure 10-1. Paterson Hazard Area Extent and Location Map 1

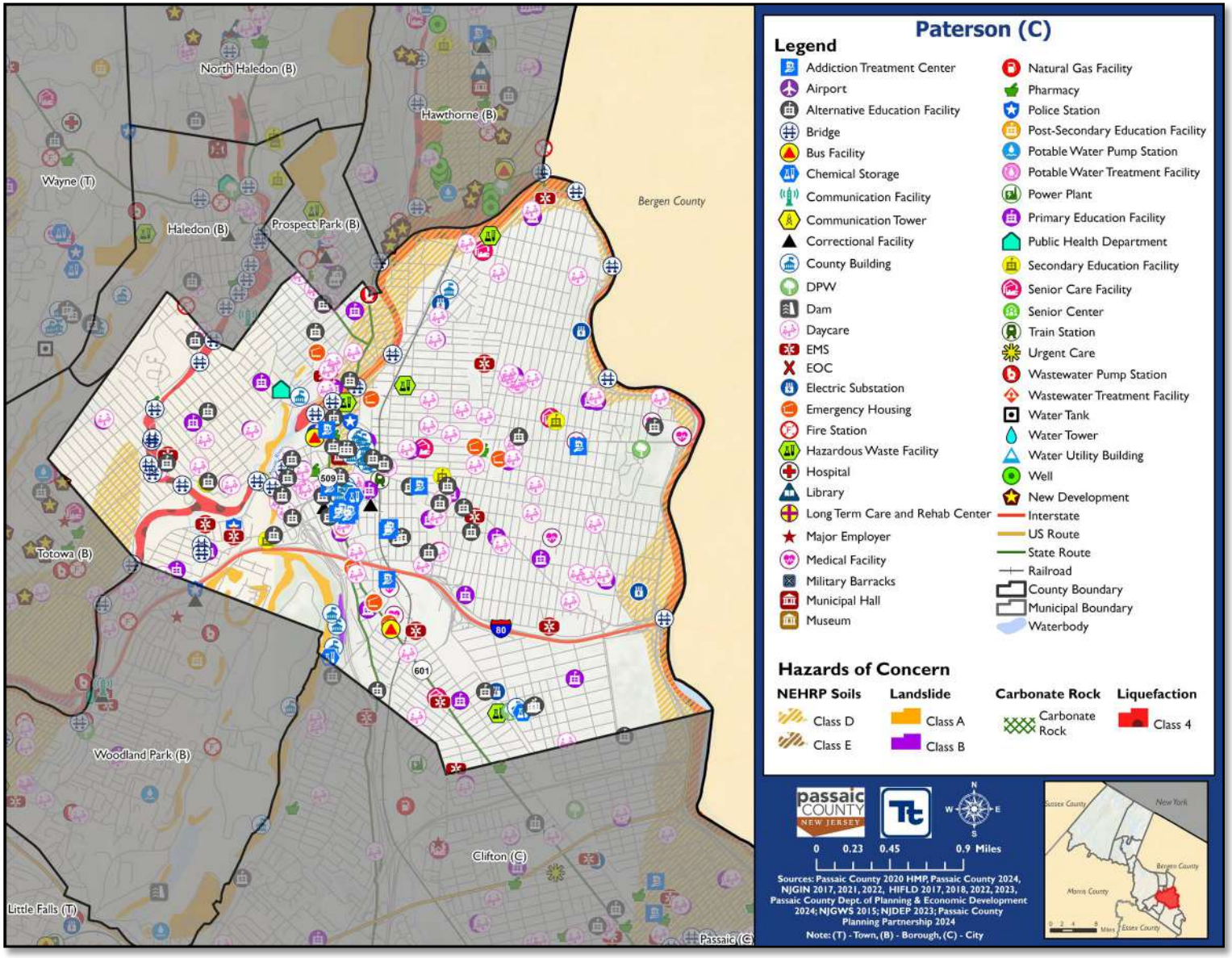
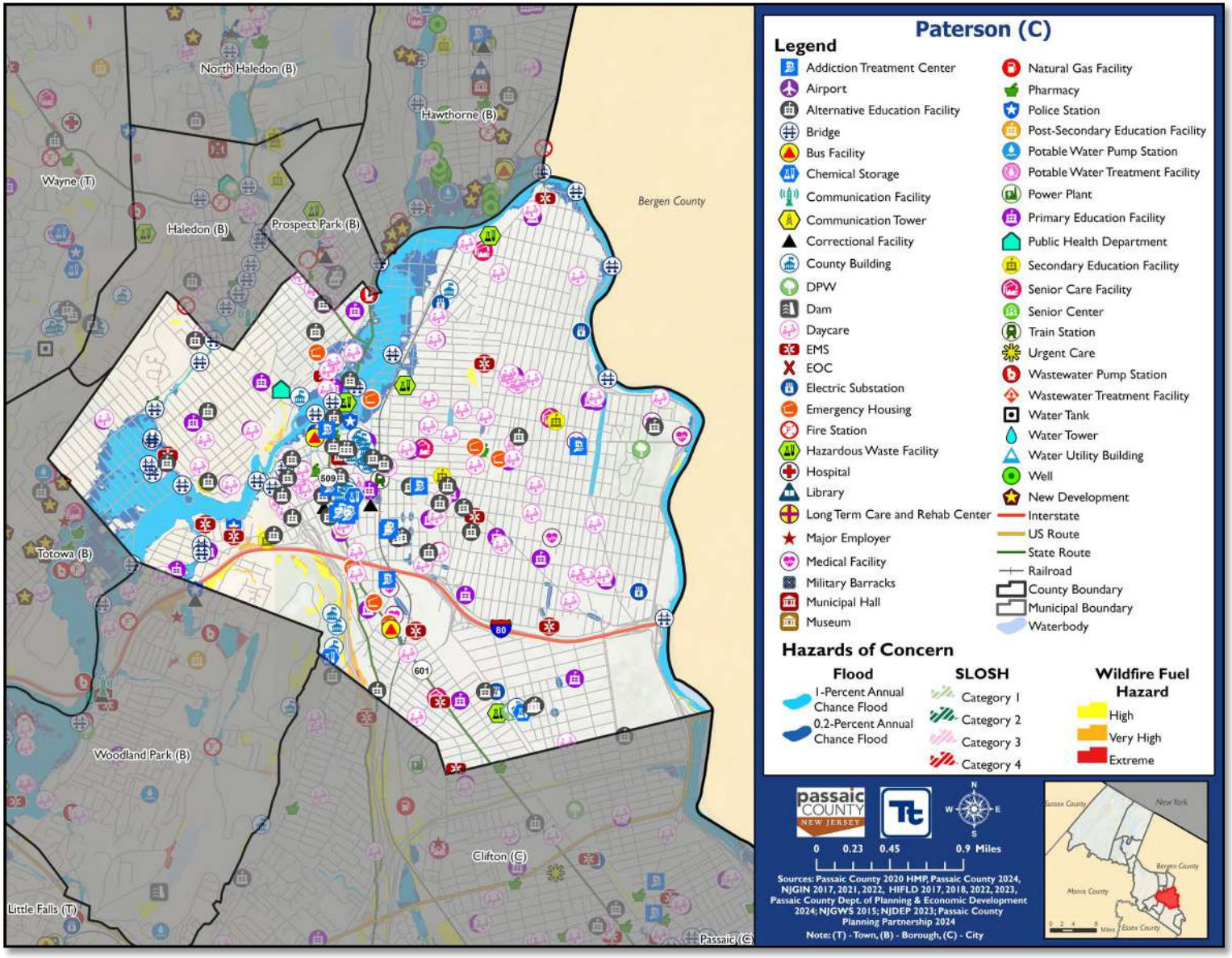


Figure 10-2. Paterson Hazard Area Extent and Location Map 2



10.6.2 Hazard Event History

The history of natural and non-natural hazard events in Paterson is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 10-14 provides details on loss and damage in Paterson during hazard events since the last hazard mitigation plan update.

Table 10-14. Hazard Event History in Paterson

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Paterson
January 20, 2020- May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	The Pandemic caused a city wide shut down and Local and Nation State of Emergencies were put in place indefinitely. Curfews were also put in place for businesses and residents. As of September 26, 2023, Passaic County accounted for 7,530 positive cases of Covid-19, and 32 reported deaths (State of New Jersey, 2023)	All Public and Private schools closed and converted to remote learning causing crossing guards and bus companies a great loss in funding. Non-Essential employees were asked not to come into the offices and eventually were set up to work from home leaving most city offices closed to the public such as Fire Prevention Office, Municipal and Federal Court and offices, etc. and citizens were unable to pay their bills, Due to insufficient PPE in the beginning, some EMS and Law Enforcement duties could not be carried out as effectively as they could with proper PPE.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed three inches in parts of County; four water rescues occurred due to flash floodings.	Debris from the flash flooding on the streets caused severe clogging of sewers. Many residents in low lying areas had to leave their homes and lost power which led to loss of food and personal items. Numerous city roads and bridges had to be shut down to prevent injury to residents and public Safety workers. Fallen trees and downed power lines caused dangerous conditions for residents, Public Safety and Public Works employees. Overtime pay had to be given to all employees who worked after hours during this event.

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Paterson
December 17-23, 2023	Flood		Over five inches of rainfall resulted in major flooding and power outages in the region. Local Stat of Emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Debris from the flash flooding on the streets caused severe clogging of sewers and the rivers debris caused dangerous conditions in streets and sidewalks. Many residents in low lying areas had to leave their homes and lost power which led to loss of food and personal items. Temporary shelter had to be provided for evacuees. Numerous city roads and bridges had to be shut down. Garbage could not be picked up in flooded areas. Overtime pay had to be given to employees who worked after hours during the event.

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

10.6.3 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 Paterson.

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. Paterson 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 City indicated the following:

- The City of Paterson faces significant challenges due to repetitive and severe repetitive loss properties caused by frequent flooding and its aging stormwater management system, which is inadequate to handle increasing stormwater runoff and the impacts of climate change. Also, the City experienced significant flash flooding in 2021 and 2023. As a result, the ranking for Flood was updated from Medium to High.

Table 10-15 shows Paterson's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 10-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Medium
Flood	High
Geological Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 10-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 10-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600009	Bridge	Yes	Yes
1600010	Bridge	Yes	Yes
1600014	Bridge	Yes	Yes
1600015	Bridge	Yes	Yes
1600016	Bridge	Yes	Yes
1600017	Bridge	Yes	Yes
1600018	Bridge	Yes	Yes
1600096	Bridge	No	Yes
1600097	Bridge	Yes	Yes
1600112	Bridge	Yes	Yes
1600113	Bridge	Yes	Yes
1600114	Bridge	Yes	Yes
1600115	Bridge	Yes	Yes
1600116	Bridge	No	Yes
1600117	Bridge	Yes	Yes
1600211	Bridge	Yes	Yes
1600476	Bridge	Yes	Yes
0200-11C (I-86 "old");1600086	Bridge	Yes	Yes
0200-17E (I-8 "old");16000008	Bridge	Yes	Yes

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
Boys and Girls Club of Paterson/Passaic – School 4	Daycare	Yes	Yes
C.A.M.P. Youth Development Program Corp.	Daycare	Yes	Yes
Covanta Sustainable Solutions	Hazardous Waste Facility	Yes	Yes
Don Bosco Technology Academy	Alternative Education Facility	No	Yes
Gifted & Talented Academy @ School 28	Alternative Education Facility	Yes	Yes
Mud Pies Learning Center LLC	Daycare	Yes	Yes
Number 28 E.S.	Primary Education Facility	No	Yes
Number 4 E.S.	Primary Education Facility	Yes	Yes
OEM	EOC	No	Yes
Paterson Charter School for Sci&Tech K-1	Alternative Education Facility	No	Yes
Paterson Day Care 100	Daycare	Yes	Yes
Paterson FD - Headquarters	EMS	No	Yes
Paterson FD - Headquarters	Fire Station	No	Yes
Paterson FD - Hillcrest Firehouse	EMS	No	Yes
Paterson FD - Hillcrest Firehouse	Fire Station	No	Yes
Paterson Great Falls Hydro Electrical Plant	Power Plant	Yes	Yes
Prospect Park Sewage Collection Pit	Wastewater Pump Station	No	Yes
St. Paul's Community Development Corporation-Women Living Independently	Emergency Housing	Yes	Yes
St. Peter's Haven	Emergency Housing	Yes	Yes
Starlet Academy	Daycare	No	Yes
The Guardian Child Care Center LLC	Daycare	No	Yes
Walgreens – 3379	Pharmacy	No	Yes
		Yes	Yes

Source: Passaic County 2020 HMP; Passaic County 2024; NJGIN 2017, 2021, 2022; HIFLD 2017, 2018, 2022, 2023; Passaic County Department of Planning & Economic Development 2024

No high hazard damages are located in the City.

10.6.4 Identified Issues

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

- The City of Paterson lacks a dedicated logistics vehicle, which is crucial for effective emergency response. This vehicle is needed to address various hazard events, including Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire. Without a logistics vehicle, the city's ability to transport emergency supplies, equipment, and personnel is severely

limited, leading to delayed response times and increased vulnerability for residents. Acquiring this vehicle will enhance Paterson's preparedness and resilience, ensuring timely and effective mitigation of hazard events.

- The City of Paterson faces significant challenges due to repetitive and severe repetitive loss properties caused by frequent flooding. These properties are highly vulnerable to hazard events, leading to recurring damage and financial strain on the community. Effective mitigation of these hazard-prone structures is essential to reduce future losses and enhance the city's resilience.
- The City of Paterson faces a significant challenge in maintaining effective communication during emergencies due to power outages that can interrupt the emergency broadcast system. This disruption can hinder the ability to alert citizens and motorists about critical emergency actions, such as evacuations and traffic diversions, potentially putting lives at risk.
- The City is facing significant challenges with its aging stormwater management system, which is inadequate to handle increasing stormwater runoff and the impacts of climate change. This inadequacy has led to frequent flooding, water pollution, and infrastructure damage. Additionally, the City is vulnerable to a range of hazards, including dam failure, drought, extreme temperatures, geological hazards, severe weather, severe winter weather, and wildfires. There is a pressing need for a comprehensive approach to update the stormwater management system and integrate climate adaptation measures to ensure the city's resilience and sustainability.
- Gifted & Talented Academy at School 28 and Number 4 Elementary School are located in the 100-year floodplain, making them highly vulnerable to flooding. This exposure poses significant risks to the safety of students and staff, as well as potential damage to school facilities and disruption of educational activities.
- The Paterson Great Falls Hydro Electrical Plant is situated within the 100-year floodplain, making it vulnerable to significant flood exposure. This poses a risk to the facility's operations, safety, and the surrounding community.
- The City, as the County seat, faces a critical shortage of warming shelters. Existing shelters fill up very quickly, leaving many residents without adequate protection during cold weather events.
- The City currently lacks a well-equipped Hazardous Materials Team to effectively respond to hazardous material situations. This deficiency poses a significant risk to public safety and environmental health. Additionally, this problem is part of a broader challenge, as the City needs to enhance its preparedness and response capabilities for all hazards, including dam failure, drought, extreme temperatures, floods, geological hazards, severe weather, severe winter weather, and wildfires.
- The City faces significant challenges with its combined sewerage overflow (CSO) system, which leads to the release of untreated sewage and frequent flooding during heavy rainfall events. This situation poses environmental hazards, public health risks, and property damage concerns for residents.
- The City has not adopted the Code Coordinated Ordinance.
- The City does not have a Substantial Damage Response Plan or a Debris Management Plan.
- The City 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 ensure those that bare it understand the regulatory requirements and procedures needed to make floodplain management work effectively and efficiently at the community level.

10.7 MITIGATION STRATEGY AND PRIORITIZATION

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

10.7.1 Past Mitigation Action Status

Table 10-17 indicates progress on the City's mitigation strategy identified in the 2020 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.

10.7.2 Additional Mitigation Efforts

The City of Paterson did not identify additional mitigation actions completed since the last plan other than those shown in Table 10-17.

Table 10-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Paterson-001	Molly Ann Brook mechanical screen	Flood, Severe Storm	Paterson DPW	Mechanical operated trash screen is in need of replacement. Replacement of manually operated trash screen on Molly Ann Brook with mechanical screen.	1. Complete 2.	1. Discontinue 2. Not Applicable 3. Action is Complete
2020-Paterson-002	Train Public Information Officer in hazard mitigation concepts	All hazards	Public Information Officer, Administration	The City's public information officer lacks hazard mitigation training. Train Public Information Officer to inform and educate citizens and property owners about hazards and mitigation with the potential of initiating national programs.	1. Complete 2.	1. Discontinue 2. Not Application 3. Action is Complete
2020-Paterson-003	Logistics vehicle	All hazards	Fire Department, Administration	The City lacks a logistics vehicle. Purchase logistics vehicle for transportation of critical resources	1. On going 2. The City is still seeking local funding for this activity as it cant be funded through FEMA HMA funding.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Paterson-004	Certified Floodplain Manager	Flood	Economic Development, Administration	The floodplain manager needs additional training. The floodplain manager will undergo training to become a certified floodplain manager.	1. In Progress 2. Currently, in progress hiring a floodplain manager.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable
2020-Paterson-005	Mitigation of hazard vulnerable structures	Flood, Severe Storm	Floodplain Administrator	The City flood repetitive loss properties and severe repetitive loss properties. Support the mitigation of hazard vulnerable structures including the acquisition of Repetitive and Severe Repetitive Loss properties. Conduct outreach to develop a list of property owners that want to mitigate. Set up a multi-year plan to prioritize and apply for FEMA grant funding.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.

Project Number	Project Name	Hazards 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.
2020-Paterson-006	Ensure continuity of operations	All hazards	Facilities	Critical facilities require backup power to ensure continuity of operations. Purchase portable generators for critical infrastructure Obtain backup power for shelter at Riverside Vets Community Center.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.
2020-Paterson-007	Relocate Emergency Communications System outside of designated Flood Plain	Flood	Fire Department	Currently the Public Safety Answering Point is located in the floodplain. Design/construct a new Emergency Communications System outside of designated Flood Plain. A new structure has been identified and plans are being finalized.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.

Project Number	Project Name	Hazards 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.
2020-Paterson-008	Relocate police headquarters out of floodplain	Flood	City of Paterson Police Department	Currently police headquarters is flood prone and has experienced losses. Relocate/construct a new Municipal/City Complex outside of flood hazard area.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.
2020-Paterson-009	Relocate Temple Street fire house out of floodplain	Flood	Fire Department	The fire house on Temple Street is flood prone. Construct a new fire house outside of the flood hazard area.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.
2020-Paterson-010	Relocate Hillcrest fire house out of floodplain	Flood	Fire Department	The Hillcrest fire house is flood prone. Construct a new fire house outside of the flood hazard area.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.

Project Number	Project Name	Hazards 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.
2020-Paterson-011	Mobile communication system for first response vehicles	All hazards	Fire Department, Administration	Purchase and install a mobile communication system for first response vehicles that would greatly enhance the response to large scale emergencies	1. No Progress 2. City of Paterson Fire Department has a unit called Field Com that is setup as our mobile communication system. All 3 alarm fire and larger and major incident this unit is deployed and staffed with a dispatcher and staff to support incident.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.
2020-Paterson-012	Portable emergency broadcast system	All hazards	Fire Department	Power outages can interrupt the emergency broadcast system. Purchase a portable emergency broadcast system that can be placed in a mobile command center or at any scene that can alert citizens as well as motorist of emergency alerts and actions that can include evacuations and traffic diversions that need to be adhered to during an emergency.	1. In Progress 2. Everbridge was budgeted by City of Paterson.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Paterson-013	Develop place-based stormwater management and flood control strategies and identify implementable climate adaptation action steps	Flood, All hazards	Engineering	The city needs to implement stormwater management measures and climate adaptation actions. Develop a framework for green infrastructure, including cost-effective, long-term solutions to update the aging system and integrate source controls into the design and construction of public improvement, private development, open space and right-of-way projects.	1. In Progress 2. Engineering is identifying scope and capacity needed for this project, funding has also been delayed for this activity.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable
2020-Paterson-014	Conduct outreach to schools located in the 100-year floodplain.	Flood	FPA, facility managers	Gifted & Talented Academy @ School 28 and Number 4 E.S. are located in the 100-year floodplain. Discuss flood exposure with facility managers. Discuss possible mitigation measures that could be taken.	1. In Progress 2. Purchasing temporary dams	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable

Project Number	Project Name	Hazards 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.
2020-Paterson-015	Conduct outreach to Paterson Great Falls Hydro Electrical Plant	Flood	FPA, facility manager	Paterson Great Falls Hydro Electrical Plant is located in the 100-year floodplain. Discuss flood exposure with facility manager. Discuss possible mitigation measures that could be taken.	1. In Progress 2. Working on in progress flood resilience wall along river.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable
2020-Paterson-016	Warming shelters.	Extreme Temperature	Office of Emergency Management	The City needs additional warming shelters. As County seat, shelters get filled up very quickly. The City will develop additional warming shelters	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable
2020-Paterson-017	Flood protection for St. Joseph's Hospital.	Flood, Severe Storm	FPA, Facility manager	Flooding occurs at St. Joseph's Hospital. The City will conduct outreach to St. Joseph's Hospital and discuss potential mitigation actions.	1. No Progress 2. This action will be discontinued due to lack of progress.	1. Discontinue 2. Not Applicable 3. City recommended this not move forward.

Project Number	Project Name	Hazards 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.
2020-Paterson-018	Establish fully staffed and equipped Hazardous Materials Team	All hazards	OEM	The City needs a well-equipped Hazardous Materials Team to respond to hazardous material situations. The City will staff and equip a Hazardous Materials Team.	1. In Progress 2. Working on grant for funding.	1. Include in 2025 HMP 2. Keep as is 3. Not Applicable
2020-Paterson-019	Implement Long Term Control Plan	Flood, Severe Storm, Hazardous Substances	Engineering	The City is adopting a Long-Term Control Plan to separate the combined sewerage overflow system in fall 2020 to reduce release of sewage and reduce flooding. The City will implement the selected elements of the Long-Term Control Plan to separate the combined sewerage overflow system.	1. In Progress 2. Working on grant for combined sewage overflow.	1. Include in 2025 HMP 2. Keep as is 3. Not applicable

10.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Paterson 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 Paterson 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 City priorities.

Table 10-18 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 10-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 10-18. 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
Drought	X				X				X	X
Extreme Temperature	X	X			X				X	X
Flood	X	X		X	X	X	X		X	X
Geological Hazards	X				X				X	X
Severe Weather	X	X		X	X		X		X	X
Severe Winter Weather	X	X			X				X	X
Wildfire	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 10-19. 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-PatersonC-001	Logistics Vehicle	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2025-PatersonC-002	Mitigation of Hazard Vulnerable Structures	1	1	1	1	1	0	1	1	0	1	1	0	1	1	**11**	High
2025-PatersonC-003	Portable Emergency Broadcast System	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
2025-PatersonC-004	Localized Stormwater Management and Climate Adaption Strategies	0	1	1	1	1	1	1	1	1	1	1	0	1	1	**12**	High
2025-PatersonC-005	Flood Awareness and Preparedness Outreach for Schools in High-Risk Areas	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
2025-PatersonC-006	Outreach to Paterson Great Falls Hydro Electrical Plant	1	1	1	1	1	1	1	1	1	0	1	1	1	1	**13**	High
2025-PatersonC-007	Warming Shelters	1	1	1	1	1	1	1	1	1	1	1	0	1	1	**13**	High
2025-PatersonC-008	Staff and Equip Hazardous Material Team	1	1	0	1	1	0	1	1	1	1	1	1	1	1	**12**	High
2025-PatersonC-009	Implement Long Term Control Plan	0	1	0	1	1	0	1	1	1	1	1	0	1	1	**10**	Medium
2025-PatersonC-010	Certified Floodplain Manager	1	1	1	1	1	1	1	1	1	0	1	1	1	1	**13**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-PatersonC-001. Logistics Vehicle

Lead Agency:	City of Paterson Fire Department
Supporting Agencies:	Administration
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The City of Paterson lacks a dedicated logistics vehicle, which is crucial for effective emergency response. This vehicle is needed to address various hazard events, including: - Dam Failure - Drought - Extreme Temperature - Flood - Geological Hazards - Severe Weather - Severe Winter Weather - Wildfire Without a logistics vehicle, the city's ability to transport emergency supplies, equipment, and personnel is severely limited, leading to delayed response times and increased vulnerability for residents. Acquiring this vehicle will enhance Paterson's preparedness and resilience, ensuring timely and effective mitigation of hazard events.
Description of the Solution:	The Paterson Fire Department will purchase a logistics vehicle to enhance the transportation of critical resources. This vehicle will be used to efficiently move emergency supplies, equipment, and personnel, ensuring a swift and effective response to various hazard events. By acquiring this logistics vehicle, the fire department will significantly improve its operational capabilities, thereby increasing the city's overall preparedness and resilience.
Estimated Cost:	Medium
Potential Funding Sources:	Emergency Management Grant
Implementation Timeline:	1-2 years
Goals Met:	5,6
Benefits:	Acquiring a logistics vehicle will significantly enhance the City of Paterson's emergency response capabilities, ensuring timely and efficient transportation of critical resources during hazard events.
Impact on Socially Vulnerable Populations:	The logistics vehicle will enable faster and more effective delivery of emergency supplies and services to socially vulnerable populations, such as the elderly, low-income families, and individuals with disabilities. This will help reduce their risk and improve their resilience during disasters.
Impact on Future Development:	By improving emergency response capabilities, the logistics vehicle will support safer and more resilient future development in the City of Paterson. It will ensure that new developments are better protected from hazard events, encouraging sustainable growth and community confidence.
Impact on Critical Facilities/Lifelines:	The logistics vehicle will enhance the protection and functionality of critical facilities and lifelines, such as hospitals, schools, and utilities. It will ensure that these essential services remain operational during emergencies, minimizing disruptions and safeguarding public health and safety.

Impact on Capabilities:	The addition of a logistics vehicle will significantly boost the fire department's operational capabilities. It will improve response times, resource distribution, and overall efficiency in managing hazard events, leading to a more robust emergency management system.
Climate Change Considerations:	Climate change is expected to increase the frequency and severity of hazard events, such as extreme weather, floods, and wildfires. The logistics vehicle will be crucial in addressing these challenges by ensuring that the City of Paterson is better equipped to respond to and mitigate the impacts of climate change-related disasters. This proactive measure will enhance the City's resilience and adaptability in the face of a changing climate.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Leasing a Logistics Vehicle	Higher long-term expenses.
Relying on Mutual Aid	Not a reliable option during a widespread event.

Action 2025-PatersonC-002. Mitigation of Hazard Vulnerable Structures

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Property Owners
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The City of Paterson faces significant challenges due to repetitive and severe repetitive loss properties caused by frequent flooding. These properties are highly vulnerable to hazard events, leading to recurring damage and financial strain on the community. Effective mitigation of these hazard-prone structures is essential to reduce future losses and enhance the city's resilience.
Description of the Solution:	To address the issue of repetitive and severe repetitive loss properties due to frequent flooding, the City of Paterson will implement a comprehensive mitigation strategy. This strategy includes supporting the mitigation of vulnerable structures by acquiring and addressing repetitive and severe repetitive loss properties to reduce future flood damage. Additionally, the City will conduct targeted outreach to develop a list of property owners interested in mitigation efforts. A multi-year plan will be established to prioritize these properties for mitigation and to apply for FEMA funding to support these initiatives. This approach aims to protect vulnerable structures, minimize the impact of future flooding, and enhance the overall safety and resilience of the community.
Estimated Cost:	High
Potential Funding Sources:	HMGP, FMA, match from property owners
Implementation Timeline:	Within 5 years
Goals Met:	1,2,3
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2025-PatersonC-003. Portable Emergency Broadcast System

Lead Agency:	City of Paterson Fire Department
Supporting Agencies:	-
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The City of Paterson faces a significant challenge in maintaining effective communication during emergencies due to power outages that can interrupt the emergency broadcast system. This disruption can hinder the ability to alert citizens and motorists about critical emergency actions, such as evacuations and traffic diversions, potentially putting lives at risk.
Description of the Solution:	To address this issue, the City of Paterson Fire Department will purchase a portable emergency broadcast system. This system can be deployed in a mobile command center or at any emergency scene to ensure continuous communication with citizens and motorists. It will provide real-time alerts and instructions during emergencies, including evacuations and traffic diversions. Additionally, the City has budgeted for the Everbridge system within its budget, further enhancing its emergency communication capabilities. This comprehensive approach will ensure that the City can effectively manage and communicate during power outages and other emergencies, thereby safeguarding the community.
Estimated Cost:	Low
Potential Funding Sources:	Assistance to Firefighter Grant Program, municipal budget
Implementation Timeline:	1-2 years
Goals Met:	5,6
Benefits:	The purchase of a portable emergency broadcast system will ensure continuous communication during power outages, enhancing the city's ability to manage emergencies effectively. This will lead to improved public safety and a more resilient community.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations, such as the elderly, low-income families, and individuals with disabilities, will benefit from timely and clear emergency alerts. This system will help ensure they receive critical information and instructions during emergencies, reducing their risk and improving their safety.
Impact on Future Development:	Reliable emergency communication infrastructure will support safer and more resilient future development in the City of Paterson. It will provide confidence to developers and residents that the city is well-prepared to handle emergencies, encouraging sustainable growth.
Impact on Critical Facilities/Lifelines:	The portable emergency broadcast system will help protect critical facilities and lifelines, such as hospitals, schools, and utilities, by ensuring they receive timely alerts and instructions during emergencies. This will minimize disruptions and maintain essential services during crises.
Impact on Capabilities:	The addition of the portable emergency broadcast system, along with the Everbridge system, will significantly enhance the City's emergency response capabilities. It will improve communication, coordination, and overall efficiency in managing hazard events, leading to a more robust and effective emergency management system.

Climate Change Considerations:	Climate change is increasing the frequency and severity of extreme weather events, leading to more frequent power outages. These outages disrupt emergency communication systems, making reliable communication even more critical. The portable emergency broadcast system will ensure that the City of Paterson can maintain effective communication during these events, providing real-time alerts and instructions to keep residents safe. This proactive measure enhances the City's resilience and adaptability in the face of climate change.	
Mitigation Category	Local Plans and Regulations	
CRS Category	Emergency Services	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Relying on traditional media outlets	They are dependent on power and may be compromised during severe weather events.
	Using Social Media Platform	Rely on internet connectivity which can be disrupted during power outages and extreme weather events.

Action 2025-PatersonC-004. Localized Stormwater Management and Climate Adaption Strategies

Lead Agency:	Paterson Engineering Department
Supporting Agencies:	-
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The City is facing significant challenges with its aging stormwater management system, which is inadequate to handle increasing stormwater runoff and the impacts of climate change. This inadequacy has led to frequent flooding, water pollution, and infrastructure damage. Additionally, the City is vulnerable to a range of hazards, including dam failure, drought, extreme temperatures, geological hazards, severe weather, severe winter weather, and wildfires. There is a pressing need for a comprehensive approach to update the stormwater management system and integrate climate adaptation measures to ensure the city's resilience and sustainability.
Description of the Solution:	The City of Paterson Engineering Department will develop a framework for green infrastructure that includes cost-effective, long-term solutions to modernize the aging stormwater management system. This framework should incorporate source controls and be integrated into the design and construction of public improvement projects, private developments, open spaces, and right-of-way projects. By doing so, the city can effectively manage stormwater, reduce flooding, improve water quality, and enhance its resilience to climate change and various hazards.
Estimated Cost:	Medium
Potential Funding Sources:	Municipal budget
Implementation Timeline:	Within 5 years
Goals Met:	2,5
Benefits:	Implementing the green infrastructure framework will create a more resilient and sustainable city by effectively managing stormwater, reducing flooding, and improving water quality, while also promoting social equity and economic growth.
Impact on Socially Vulnerable Populations:	Enhanced water quality and reduced pollution lead to better health outcomes, particularly for communities with limited access to healthcare.
Impact on Future Development:	The framework promotes sustainable development practices, ensuring that new projects are designed with resilience in mind.
Impact on Critical Facilities/Lifelines:	Improved infrastructure ensures that lifelines such as transportation, water supply, and power remain functional during extreme weather events.
Impact on Capabilities:	Implementing advanced stormwater management techniques provides opportunities for innovation and learning, positioning the city as a leader in climate adaptation and resilience.
Climate Change Considerations:	Climate change intensifies the problem by increasing the frequency and strength of extreme weather events, such as heavy rainfall and severe storms, leading to more frequent and severe flooding. Additionally, rising temperatures and prolonged droughts can strain the aging stormwater management system, making it less effective. These changes increase the urgency for a comprehensive and resilient stormwater management solution.
Mitigation Category	Local Plans and Regulation
CRS Category	Preventative Measure, Structural Flood Control Projects
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Traditional Infrastructure Upgrade	Expensive
	Temporary flood barriers	Not sustainable for a long-term solution

Action 2025-PatersonC-005. Flood Awareness and Preparedness Outreach for Schools in High-Risk Areas

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Facility Managers
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	Gifted & Talented Academy at School 28 and Number 4 Elementary School are located in the 100-year floodplain, making them highly vulnerable to flooding. This exposure poses significant risks to the safety of students and staff, as well as potential damage to school facilities and disruption of educational activities.
Description of the Solution:	The Floodplain Administrator will conduct outreach to facility managers at Gifted & Talented Academy at School 28 and Number 4 Elementary School to discuss their flood exposure. Collaborate with them to identify and implement possible mitigation measures, such as elevating critical infrastructure, installing flood barriers, and developing emergency response plans. These actions will help reduce the risk of flood damage, ensure the safety of students and staff, and maintain the continuity of educational operations.
Estimated Cost:	Staff Time
Potential Funding Sources:	City Budget
Implementation Timeline:	1-2 years
Goals Met:	1,2,3,4,5,7
Benefits:	Implementing flood mitigation measures at Gifted & Talented Academy at School 28 and Number 4 Elementary School will significantly reduce the risk of flood damage, ensuring the safety of students and staff and maintaining the continuity of educational activities.
Impact on Socially Vulnerable Populations:	By protecting schools located in high-risk flood areas, we ensure that all students, including those from socially vulnerable populations, have a safe and secure learning environment. This action helps to prevent disruptions in education that can disproportionately affect these communities.
Impact on Future Development:	Proactively addressing flood risks at these schools sets a precedent for future development, encouraging the integration of resilient design and construction practices. This approach promotes sustainable growth and ensures that new projects are better prepared for climate-related challenges.
Impact on Critical Facilities/Lifelines:	Enhancing flood protection for schools, which are critical community facilities, ensures that they remain operational during and after flood events. This not only protects the physical infrastructure but also supports the broader community by providing safe havens and continuity of essential services.
Impact on Capabilities:	Implementing these mitigation measures strengthens the City's overall disaster preparedness and response capabilities. It fosters collaboration between school administrators and emergency management officials, enhancing the community's ability to effectively manage and mitigate flood risks.
Climate Change Considerations:	Climate change heightens the flood risk for Gifted & Talented Academy at School 28 and Number 4 Elementary School by increasing the frequency and intensity of extreme weather events, such as heavy rainfall and severe storms. These changes lead to higher flood levels and more frequent flooding, making it even more critical to implement effective mitigation measures to protect the schools and ensure the safety of students and staff.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Relocating the schools	High cost; Disruption of operations
	Temporary flood barriers	Not a sustainable long-term solution

Action 2025-PatersonC-006. Outreach to Paterson Great Falls Hydro Electrical Plant

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Hydro Electrical plant Facility Manager
Hazard(s) of Concern:	Flood
Description of the Problem:	The Paterson Great Falls Hydro Electrical Plant is situated within the 100-year floodplain, making it vulnerable to significant flood exposure. This poses a risk to the facility's operations, safety, and the surrounding community.
Description of the Solution:	The City of Paterson Floodplain Administrator will conduct outreach to the Paterson Great Falls Hydro Electrical Plant to discuss flood exposure with the facility manager. They will collaborate to identify and implement potential mitigation measures to reduce the risk of flood damage and enhance the facility's resilience to flooding events. This will include integrating the ongoing construction of a flood resilience wall along the river.
Estimated Cost:	Staff Time
Potential Funding Sources:	City budget
Implementation Timeline:	1-2 years
Goals Met:	2,5,6
Benefits:	Implementing flood mitigation measures at the Paterson Great Falls Hydro Electrical Plant will significantly reduce the risk of flood damage, ensuring the facility's continuous operation and safeguarding the surrounding community.
Impact on Socially Vulnerable Populations:	By enhancing flood protection at the hydroelectric plant, the City of Paterson is prioritizing the safety and well-being of socially vulnerable populations who are often disproportionately affected by natural disasters.
Impact on Future Development:	Strengthening flood resilience at critical infrastructure sites like the hydroelectric plant will encourage sustainable future development in the area, fostering economic growth and community stability.
Impact on Critical Facilities/Lifelines:	Improving flood defenses at the hydroelectric plant will protect a vital source of electricity, ensuring that critical facilities and lifelines remain operational during and after flood events.
Impact on Capabilities:	The implementation of these mitigation measures will enhance the overall disaster preparedness and response capabilities of the City of Paterson, making the community more resilient to future flooding events.
Climate Change Considerations:	Climate change is expected to increase the frequency and severity of flooding events. The solution should account for these changes by designing mitigation measures that can handle more extreme and frequent flood scenarios.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Relocate the Hydro Electrical Plant	High costs
	Temporary Flood Barrier	Not a reliable permanent solution

Action 2025-PatersonC-007. Warming Shelters

Lead Agency:	Office of Emergency Management
Supporting Agencies:	-
Hazard(s) of Concern:	Extreme Temperature, Severe Winter Weather
Description of the Problem:	The City, as the County seat, faces a critical shortage of warming shelters. Existing shelters fill up very quickly, leaving many residents without adequate protection during cold weather events.
Description of the Solution:	The City's Office of Emergency Management will develop additional warming shelters to accommodate the growing demand and ensure that all residents have access to safe and warm shelter during cold weather conditions.
Estimated Cost:	Medium
Potential Funding Sources:	City Budget
Implementation Timeline:	Within 5 years
Goals Met:	1,7
Benefits:	Developing additional warming shelters will ensure that all residents have access to safe and warm shelter during cold weather events, significantly enhancing community safety and well-being.
Impact on Socially Vulnerable Populations:	By increasing the number of warming shelters, the City will provide crucial support to socially vulnerable populations, including the homeless and low-income individuals, ensuring they have a safe place to stay during extreme cold.
Impact on Future Development:	The establishment of additional warming shelters will demonstrate the City's commitment to public safety and resilience, encouraging future development and investment in the community by showcasing a proactive approach to addressing residents' needs.
Impact on Critical Facilities/Lifelines:	Additional warming shelters will reduce the strain on existing critical facilities and lifelines, such as hospitals and emergency services, by providing a designated space for those in need during cold weather events.
Impact on Capabilities:	Expanding the network of warming shelters will enhance the City's overall emergency preparedness and response capabilities, ensuring that the community is better equipped to handle cold weather emergencies and protect its residents.
Climate Change Considerations:	Climate change increases the frequency and severity of extreme cold weather events, making the development of additional warming shelters essential to protect vulnerable populations and ensure community safety.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Emergency Services
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Utilize existing public buildings as temporary shelters.	Public buildings may not always be available.
	Provide financial assistance for heating costs.	This assistance may not reach all those in need.

Action 2025-PatersonC-008. Staff and Equip Hazardous Material Team

Lead Agency:	Office of Emergency Management
Supporting Agencies:	-
Hazard(s) of Concern:	Dam Failure, Drought, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The City currently lacks a well-equipped Hazardous Materials Team to effectively respond to hazardous material situations. This deficiency poses a significant risk to public safety and environmental health. Additionally, this problem is part of a broader challenge, as the City needs to enhance its preparedness and response capabilities for all hazards, including dam failure, drought, extreme temperatures, floods, geological hazards, severe weather, severe winter weather, and wildfires.
Description of the Solution:	The City's Office of Emergency Management will staff and equip a dedicated Hazardous Materials Team to ensure a rapid and effective response to hazardous material incidents. This initiative is a critical component of the City's comprehensive strategy to improve resilience and safety across all hazard scenarios. The City is actively working on securing a grant to fund the establishment and operation of this team, ensuring sustainable and robust protection for its residents and environment.
Estimated Cost:	Medium
Potential Funding Sources:	City Budget
Implementation Timeline:	Within 3 years
Goals Met:	1,5,7
Benefits:	Establishing a well-equipped Hazardous Materials Team will significantly enhance the City's ability to respond swiftly and effectively to hazardous material incidents, ensuring public safety and environmental protection.
Impact on Socially Vulnerable Populations:	By having a dedicated Hazardous Materials Team, the City will better protect socially vulnerable populations who are often at greater risk during hazardous material incidents, ensuring equitable safety measures for all residents.
Impact on Future Development:	The presence of a specialized Hazardous Materials Team will make the City more attractive for future development and investment, as businesses and residents will have greater confidence in the City's emergency response capabilities.
Impact on Critical Facilities/Lifelines:	A well-equipped Hazardous Materials Team will safeguard critical facilities and lifelines, such as hospitals, schools, and infrastructure, by ensuring rapid containment and mitigation of hazardous material threats.
Impact on Capabilities:	Enhancing the City's hazardous materials response capabilities will improve overall emergency preparedness and resilience, enabling the City to effectively manage a wide range of hazards, including dam failure, drought, extreme temperatures, floods, geological hazards, severe weather, severe winter weather, and wildfires.
Climate Change Considerations:	Climate change increases the frequency and severity of extreme weather events, which can lead to more hazardous material incidents. Establishing a well-equipped Hazardous Materials Team is essential to effectively manage these risks and protect public safety.
Mitigation Category	Local Plans and Regulation
CRS Category	Emergency Services
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Contract a private company	Could lead to longer response times.
	Provide training to emergency personnel	Emergency personnel may not possess required specialty skills and equipment needed.

Action 2025-PatersonC-009. Implement Long Term Control Plan

Lead Agency:	City of Paterson Engineering
Supporting Agencies:	-
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The City faces significant challenges with its combined sewerage overflow (CSO) system, which leads to the release of untreated sewage and frequent flooding during heavy rainfall events. This situation poses environmental hazards, public health risks, and property damage concerns for residents.
Description of the Solution:	To address these issues, the City's Engineering Department will adopt and implement a Long-Term Control Plan starting in fall 2020. This plan involves separating the combined sewerage overflow system, which will significantly reduce the release of untreated sewage and mitigate flooding. Additionally, the City is actively working on securing a grant to support the implementation of the CSO separation project. By executing the selected elements of this plan and obtaining necessary funding, the City aims to enhance environmental protection, improve public health, and safeguard properties from flood damage
Estimated Cost:	High
Potential Funding Sources:	City Budget, HMGP, State and Federal sources
Implementation Timeline:	Within 5 years
Goals Met:	1,2,7
Benefits:	The implementation of the Long-Term Control Plan to separate the combined sewerage overflow system will significantly reduce the release of untreated sewage and mitigate flooding. This will lead to a cleaner environment, improved public health, and enhanced property protection.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations will benefit greatly from the reduction in flooding and sewage overflows, as these communities are often disproportionately affected by such issues. The plan will help ensure a safer and healthier living environment for all residents.
Impact on Future Development:	By addressing the CSO issues, the City will create a more attractive and resilient environment for future development. This will encourage investment and growth, leading to economic benefits and improved quality of life for residents.
Impact on Critical Facilities/Lifelines:	The separation of the combined sewerage overflow system will protect critical facilities and lifelines from flooding and sewage-related disruptions. This will enhance the reliability and functionality of essential services, ensuring they remain operational during adverse weather conditions.
Impact on Capabilities:	The successful implementation of the Long-Term Control Plan will strengthen the City's capabilities in managing stormwater and sewage systems. This will improve the City's overall resilience to environmental challenges and enhance its ability to respond to future hazards effectively.
Climate Change Considerations:	To address the challenges posed by climate change, the City should assess future risks and incorporate adaptation strategies into the Long-Term Control Plan. This will ensure the sewerage system remains resilient, protecting critical facilities and vulnerable communities from increased flooding and sewage overflows.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Structural Flood Control Projects
Priority	Medium

Alternatives:	Action	Evaluation
	No Action	-
	Partial separation, targeting only the most flood-prone areas	This would not completely solve the issue, leaving some areas still vulnerable to flooding and sewage overflow
	Increase storage capacity	Does not address the root cause of the problem

Action 2025-PatersonC-010. Certified Floodplain Manager

Lead Agency:	Economic Development
Supporting Agencies:	City Administration
Hazard(s) of Concern:	Flood
Description of the Problem:	The City 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 ensure 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:	The City is currently in the process of hiring a floodplain manager. In addition, the floodplain manager will be provided training and/or certification with NFIP regulations and floodplain management ordinances.
Estimated Cost:	Low
Potential Funding Sources:	City Budget
Implementation Timeline:	1-5 years
Goals Met:	1,2,5,8
Benefits:	This action will increase the NFIP capabilities of the City and assure the City'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 have the opportunity to influence future development and prevent unsafe building in 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 City's current NFIP capabilities.
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related events. This action will educate staff on NFIP regulations to assist with the flood hazard.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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

11. BOROUGH OF POMPTON LAKES

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

11.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Pompton Lakes identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management Coordinator represented the community on the Passaic County HMP Planning Partnership and Steering Committee 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 11-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 11-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Albert Evangelista, OEM Coordinator Address: 25 Lenox Avenue, Pompton Lakes, NJ 07442 Phone Number: (973) 583-2879 Email: oem@pomptonlakes-nj.gov	Name/Title: Michael Carelli, Administrator Address: 25 Lenox Avenue, Pompton Lakes, NJ 07442 Phone Number: (862) 377-8612 Email: administrator@pomptonlakes-nj.gov
National Flood Insurance Program Floodplain Administrator	
Name/Title: Sal Poli, Construction and Zoning Official Address: 25 Lenox Avenue, Pompton Lakes, NJ 07442 Phone Number: 973-835-0143, ext. 224 Email: construction@pomptonlakes-nj.gov	
Additional Contributors	
Name/Title: Sal Poli, Construction and Zoning Official Method of Participation: Provided key information in completing necessary worksheets	
Name/Title: Carmelina Fusaro, Planning and Zoning Secretary Method of Participation: Provided key information in completing necessary worksheets	
Name/Title: Albert Evangelista, OEM Coordinator Method of Participation: Participated in Planning Partnership and Steering Committee; Attended Steering Committee Kickoff, Planning Partnership Kickoff, and Risk Assessment/Mitigation Strategy Workshop; Provided key information on hazard history, capabilities, NFIP program, building permits, new development, mitigation action status updates, and critical facilities.	
Name/Title: Anthony J. Rodriguez, Police Department Method of Participation: Attended Planning Partnership Kickoff.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: Daniel Cottrell, OEM Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Derek Clark, Police Department Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Elizabeth Brandsness, Borough Clerk Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Michael Carelli, Administrator Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Maria Kent, Borough Councilperson Method of Participation: Attended Planning Partnership Kickoff.	

11.2 COMMUNITY PROFILE

11.2.1 Brief History

The area now known as Pompton Lakes was originally purchased in 1695 and settled in 1697. In the early 1700s, the construction of the Pompton Furnace began; the Furnace would become an important supplier for ammunition during the French-Indian War, the Revolutionary War and the War of 1812. During the Industrial Revolution, it would expand and become a large steelworks plant. Incorporated in 1895, the Borough's industrial past would drive its suburban and commercial land use (Borough of Pompton Lakes 2017).

11.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 3.191 square miles, of which 2.913 square miles is land and 0.278 square miles is water. Its eastern edge abuts Pompton Lake and is bordered by the Boroughs of Bloomingdale and Wanaque to the northwest and Morris County to the south.

11.2.3 Governing Body Format

Pompton Lakes is governed by a six-member Borough Council and a Mayor. The Borough Council is elected at large, and each member serves a three-year term.

11.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Pompton Lakes was 11,127, a 0.3 percent increase 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 2020 U.S. Census indicates that 5.1 percent of the population is 5 years of age or younger, 16 percent is 65 years of age or older, 2.1 percent is non-English speaking, 8.7 percent is below the poverty threshold, and 7.2 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, childcare, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32% of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26%). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66%. Passaic County faces low household income compared to the state average of $89,296 and is on par with the state average of 66% for labor force participation rates. 15% of Passaic households live in poverty, which exceeds the state average of 10%.

11.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Pompton Lakes 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 Pompton Lakes to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

11.3.1 Planning and Regulatory Capability and Integration

Table 11-2 summarizes the planning and regulatory tools that are available to Pompton Lakes.

Table 11-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018 NJAC 5:24-3.14. Chapter 19 – Building and Construction	State and Local	Construction Department
How has or will this be integrated with the HMP and how does this reduce risk? Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures.				
Zoning/Land Use Code	Yes	Chapter 190 – Zoning and Land Use Regulations, 2019	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter is to provide rules, regulations and standards to guide land development in the Borough of Pompton Lakes in order to promote the public health, safety and general welfare of the municipality. It shall be administered to ensure the orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services in accordance with the purposes of the Municipal Land Use Law (N.J.S.A. 40:55D-2). The ordinance includes an article (Article VII) for subdivision and site plan review and Well head protection areas (Article X).				
Subdivision Code	Yes	Chapter 190, Article VII – Subdivision and Site Plan Review	Local	Zoning Department
How has or will this be integrated with the HMP and how does this reduce risk? Prior to the subdivision or re-subdivision of land and prior to the issuance of a building permit or certificate of occupancy or continued occupancy of any development for which site plan approval is required, an application for subdivision or site plan, as the case may be, shall be submitted to and approved by the Planning Board (or the Zoning Board if permitted by the Municipal Land Use Law and/or Redevelopment Ordinance of the Borough).				
Site Plan Code	Yes	Chapter 190 – Site Plan Review	Local	Zoning Department
How has or will this be integrated with the HMP and how does this reduce risk? Site plan approval shall be required for any new building, any addition to an existing building, any change in use of an existing building, any off-street parking area or alteration of said parking and any other improvement involving land disturbance, including excavation, soil removal, land filling or site clearance.				
Stormwater Management Code	Yes	Chapter 190, Article 31 – Stormwater Control	Local	DPW
How has or will this be integrated with the HMP and how does this reduce risk? Establishes minimum stormwater management requirements and controls for major developments. Any development needs to incorporate a maintenance plan for the stormwater management measures incorporated into the design of a major development. The actions in the ordinance limit soil erosion, encourages non-structural controls, encourages recharge, and improves stormwater quality and reduce quantity.				
Post-Disaster Recovery/ Reconstruction Code	Yes	Chapter 19 – Building and Construction	Local	Construction Department
How has or will this be integrated with the HMP and how does this reduce risk? The Construction code ordinance notes that substantial damages result in higher standards for reconstruction.				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Environmental Protection Ordinance(s)	Yes	Chapter 9 – Environmental Regulations Chapter 190, Article 39 – Environmental Sustainability Standards	Local	Zoning Department
How has or will this be integrated with the HMP and how does this reduce risk? For the purpose of controlling and reducing atmospheric pollution, it is hereby declared to be the policy of the Borough to minimize air pollution, as herein defined, and prohibit excessive emission of the same, to establish standards governing the installation, maintenance and operation of equipment and appurtenances relating to combustion which are a source of air pollution and, in furtherance of this purpose, to cooperate and coordinate these efforts with the State Department of Environmental Protection, Bureau of Air Pollution Control.				
Flood Damage Prevention Ordinance	Yes	Chapter 16 – Flood Damage Prevention	Local	Construction Official
How has or will this be integrated with the HMP and how does this reduce risk? 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: A. To protect human life and health; B. To minimize expenditure of public money for costly flood control projects; C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; D. To minimize prolonged business interruptions; E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard; F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; G. To ensure that potential buyers are notified that property is in an area of special flood hazard; and H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. The ordinance does not conform with not NJDEP's model code coordinated ordinance and will require update.				
Wellhead Protection	Yes	Chapter 190, Article 10 – Wellhead Protection Areas	Local	Board of Health
How has or will this be integrated with the HMP and how does this reduce risk? To protect the public health, safety, and welfare through the protection of the groundwater resources underlying the municipality to ensure a supply of safe and healthful drinking water for the present and future generations of local residents, employees and the general public in this municipality, as well as users of these water supplies outside this municipality.				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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	Borough of Pompton Lakes Master Plan Reexamination, 2017	State, County and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The plan identifies the following mitigation related goals: • Preserve open space to protect critical environmental resources, such as wetlands, floodplains, ridge lines, steep slopes, and stream and river corridors. • Protect and preserve water resources and watershed lands for purposes of drinking water supply, flood control, and recreation.				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? Capital improvements are identified in the annual budget which is adopted yearly. The budget includes funding for mitigation and is administered by the Mayor and Council. Through its plan, the Borough has allocated over $100 million to address river flooding through bank stabilization efforts. In 2024, the Borough identified a riverbank for flood damage repairs that is not covered by FEMA or NJDEP jurisdiction, and the Borough will have to pay for this project itself.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	Yes	2020 Passaic County Hazard Mitigation Plan	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? The Borough receives CRS credit for Activity 510 (Floodplain Management) for the County HMP and its jurisdictional annex.				
Stormwater Management Plan	Yes	Stormwater Management Plan For The Borough of Pompton Lakes Passaic County, NJ	State and Local	Stormwater Management Committee
How has or will this be integrated with the HMP and how does this reduce risk? The Stormwater Management Plan was adopted in 2002 through Ordinance 06-02 and is administered by the Mayor and Council. The Plan documents the strategy for the Borough to address stormwater-related impacts including groundwater recharge, stormwater quantity, and stormwater quality by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acre of land.				
Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan (SWPPP)	State and Local	Stormwater Management Committee
How has or will this be integrated with the HMP and how does this reduce risk? Outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.				
Open Space Plan	Yes	Open Space and Recreation Plan, 2012	Local	Open Space Committee
How has or will this be integrated with the HMP and how does this reduce risk? Defines the sustainable use, development, and maintenance of open space within the Borough. The plan includes valuable information including the Natural Resources Inventory. The Open Space and Recreation Plan became part of the Borough's Master Plan shortly after it was published. The Plan also helped to create the Environmental Protection Committee.				

	Jurisdiction has this?	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? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	Yes	Community Forestry Management Plan, 2015 (annual accomplishment reports are also completed)	Local	Pompton Lakes Shade Tree Committee
How has or will this be integrated with the HMP and how does this reduce risk? The Pompton Lakes Shade Tree Committee, along with other committees, have worked hard to develop a Community Forestry Plan and Tree Cover Goal. Each year the Shade Tree Committee revisits the plan to verify all information and make any adjustments. The committee also resubmits information for the town's Accreditation Report. The Plan has been updated since last update.				
Transportation Plan	Yes	Pompton Lakes Transit Access Study	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Provides an analysis of transit demand and explore the scale and types of potential transit services that would support the short-, medium-, and long-term development needs in the Pompton Lakes Downtown Redevelopment Area.				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Borough of Pompton Lakes Emergency Operations Plan, 2021	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? The Emergency Operating Plan (EOP) contains annexes for each borough department delineating what their responsibilities are in the event of an emergency or disaster. Where Borough departments cannot provide specific support services, outside agencies, such as the American Red Cross and Salvation Army, are contracted through verbal and written agreements to provide the service needed. The Emergency Operating Plan is reviewed and approved every two years by the New Jersey State Office of Emergency Management. Annexes in the plan must be tested annually through functional, tabletop, and full-scale exercises.				
Continuity of Operations Plan	Yes	Borough of Pompton Lakes Emergency Operations Plan, 2021	Local	OEM
Pompton Lakes' COOP Plan provides the Borough's essential functions during a disaster or emergency.				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

11.3.2 Development and Permitting Capability

Table 11-3 summarizes the capabilities of Pompton Lakes to oversee and track development.

Table 11-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 Permits, Building and Construction Office
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	GIS tracks permits in hazard area
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	Vacant lands inventory
Describe the level of buildout in your jurisdiction.	N/A	More than half built out, with large areas of open space and forests to the north surrounding the Wanaque River and the east along Pompton Lake.

11.3.3 Administrative and Technical Capability

Table 11-4 summarizes potential staff and personnel resources available to Pompton Lakes and their current responsibilities that contribute to hazard mitigation.

Table 11-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning Board reviews and acts on site plan and subdivision applications. The Planning Board has the authority to prepare, adopt and amend or revise the Borough's Master Plan. Land use planning is a mechanism for governments to provide compatible uses of land for residents and businesses that preserve the character of a community.
Zoning Board of Adjustment	Yes	The Zoning Board of Adjustment consists of seven members and four alternate members who are responsible for determining whether relief in the form of a variance can be granted.
Planning Department	No	-
Mitigation Planning Committee	Yes	The Flood Advisory Board assists Pompton Lakes' Municipal government on flood-related matters and pursues means of mitigating flooding within the Borough.
Environmental Board/Commission	Yes	The Pompton Lakes Environmental Protection Committee strives to promote the awareness and importance of the protection and preservation of wildlife habitats, wetlands, and recreation and conservation resources. The Commission hosts an annual river cleanup with improves flood mitigation and cleans the natural environment.
Open Space Board/Committee	Yes	Open Space Committee

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Economic Development Commission/Committee	Yes	The Pompton Lakes Business Improvement District's mission is to create a "place of destination" and a "Highlands Gateway" with a warm, clean, safe neighborhood environment for people to shop, dine and stroll in Pompton Lakes. We aim to provide a sense of community that contributes to attract local support, as well as create a destination business district that insures economic growth to existing businesses and the town.
Public Works/Highway Department	Yes	Public Works conducts street sweeping operations.
Construction/Building/Code Enforcement Department	Yes	Construction Department
Emergency Management/Public Safety Department	Yes	The Borough's Emergency Operating Center (EOC) is located adjacent to the police communications center in the municipal building. In times of crisis, all members of the Local Emergency Planning Committee (LEPC) respond to Borough Hall and meet to address the emergency. The LEPC meets twice a year, and more often if necessary. The OEM Coordinator works closely with the Flood Advisory Board and Non Governmental Organizations (NGO) and to provide the support that is needed to be effective in all phases.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Shade Tree Commission – Interlocal Agreement Storm Drain Cleaning. Passaic County conducts street sweeping on Wanaque Avenue.
Mutual aid agreements	Yes	Police, Fire, and First Aid, interlocal agreement with Borough of Ringwood for storm drain cleaning, Borough of Bloomingdale for street sweeping
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	Yes	Pompton Lakes Shade Tree Committee, along with other committees, have worked hard to develop a Community Forestry Plan and Tree Cover Goal. Each year the Shade Tree Committee revisits the plan to verify all information and make any adjustments. The committee also resubmits information for the town's Accreditation Report.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	H2M Engineer Associates, Inc. and Ferriero Engineering, Inc.
Engineers or professionals trained in building or infrastructure construction practices	Yes	H2M Engineer Associates, Inc. and Ferriero Engineering, Inc.
Planners or engineers with an understanding of natural hazards	Yes	H2M Engineer Associates, Inc. and Ferriero Engineering, Inc.
Staff with expertise or training in benefit/cost analysis	Yes	Administrator

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Agnoli Engineering/ H2M Engineer Associates, Inc.
Staff that work with socially vulnerable populations or underserved communities	Yes	The Borough Health Department provides services to residents who are living on a limited income and for those caring for aging parents. Its mission is to prevent the premature onset of disease and disability, and to help all residents achieve healthier, more productive lives.
Environmental scientists familiar with natural hazards	No	-
Surveyors	Yes	The Borough has contracted a private firm to conduct aerial surveys via drone to assess flood damage to assets and river backs. They have an active NJDEP permit to conduct this work until 2025.
Emergency manager	Yes	OEM Coordinator
Grant writers	Yes	Millennium Strategies
Resilience Officer	Yes	OEM Coordinator
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

11.3.4 Fiscal Capability

Table 11-5 summarizes financial resources available to Pompton Lakes.

Table 11-5. Fiscal Capabilities

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

11.3.5 Education and Outreach Capability

Table 11-6 summarizes the education and outreach resources available to Pompton Lakes.

Table 11-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Public Information Officer under OEM. The Borough utilizes the Civic Plus Engage platform for the Borough website which has various compatibility assurances with mobile devices and also has advanced capabilities for email notifications.
Personnel skilled or trained in website development	No	-
Hazard mitigation information available on your website	Yes	Flood information
Social media for hazard mitigation education and outreach	Yes	Facebook and X (formerly Twitter)
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Flood Advisory Board, Open Space Committee, Stormwater Committee, Flood Legislation Committee, CRS Committee, Climatology Committee, Program for Public Information.
Warning systems for hazard events	Yes	CivicReady, website, emails
Natural disaster/safety programs in place for schools	Yes	Handouts for school kids
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	Newsletter, Awareness Seminar each March The Borough's OEM Director along with the work of the Pompton Lakes Police Department, Pompton Lakes Fire Department and CERT team regularly check the functionality of the communication plans.

11.3.6 Community Classifications

Table 11-7 summarizes classifications for community programs available to Pompton Lakes.

Table 11-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	Yes	5	May 1, 2013
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	-
National Weather Service StormReady Certification	Yes	N/A	October 2014
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Silver	October 1, 2021
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

11.3.7 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 11-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 11-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Extreme Temperatures	Moderate
Flood	Moderate
Geological Hazards	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

11.4 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 11-1 is responsible for maintaining this information.

11.4.1 NFIP Statistics

Table 11-9 summarizes the NFIP policy and claim statistics for Pompton Lakes.

11.4.2 Flood Vulnerability Summary

Table 11-10 provides a summary of the NFIP program in Pompton Lakes.

Table 11-9. Pompton Lakes NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**1,913**
Total Loss Payments	**$49,258,458**
# Repetitive Loss Properties (NFIP definition)	**147**
# Repetitive Loss Properties (FMA definition)	**3**
# Severe Repetitive Loss Properties (NFIP definition)	**110**
# Severe Repetitive Loss Properties (FMA definition)	**168**

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: NJOEM 2024

Table 11-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Properties located near streams, rivers, and lakes
Do you maintain a list of properties that have been damaged by flooding?	Yes, a list is maintained
Do you maintain a list of property owners interested in flood mitigation?	A list is not maintained however, the Borough has recently partnered with the State for several elevations and buyouts.
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	None at this time
How do you make Substantial Damage determinations?	Under the regulations of NJ DEP and FEMA requirements
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?	Unknown, the Borough has recently partnered with the State for several elevations and buyouts.
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?	The Building Department and Borough Engineer

NFIP Topic	Comments
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
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, not at this time
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Yes, permit review, GIS, education, outreach, inspections, and engineering capabilities
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Under the regulations of NJ DEP and FEMA requirements
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 16 – Flood Damage Prevention
What is the date that your flood damage prevention ordinance was last amended?	March 25, 2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Exceeds with 30” Freeboard; however, Borough needs to adopt Code Coordinated Ordinance
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	The Borough participates in CRS and is a Class 5 community. They have been working towards a Class 4 designation for the past several years. They are the first Class 5 community east of the Mississippi River.

11.5 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 11-11 through Table 11-13.

Table 11-11. 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
2020				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2022				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2023				
Total Permits	5	0	1	6
Permits within SFHA	0	0	0	0

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

Table 11-12. Recent Major Development and Infrastructure from 2017 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
Meridia Project	Mixed Use – Commercial & Residential	1 Structure	Wanaque Avenue & Babcock Place	Zone DRA – 1 No Flooding	In Progress
Soaring Car Wash	Commercial	1 Structure	105 Hamburg Turnpike	Zone B-1 No Flooding	Completed
525 Wanaque LLC	Mixed Use – Commercial & Residential	1 Structure	525 Wanaque Avenue	Zone B-1 No Flooding	In Progress

** Only location-specific hazard zones or vulnerabilities identified.*

Table 11-13. 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
Pompton Five Associates	Mixed Use – Commercial & Residential	1 Structure	223 Wanaque Avenue	Zone DRA – 1 No Flooding	In Review
Passaic County Affordable Housing	Residential	1 Structure	519 Ringwood Avenue	Zone DBD-2 Frontal Flooding	In Review

11.6 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 Pompton Lakes' risk assessment results and data used to determine the hazard ranking. Key local risk assessment information is presented below.

11.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 11-1 through Figure 11-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Pompton Lakes has significant exposure. The maps show the location of potential new development, where available.

Figure 11-1. Pompton Lakes NEHRP Hazard Area Extent and Location Map

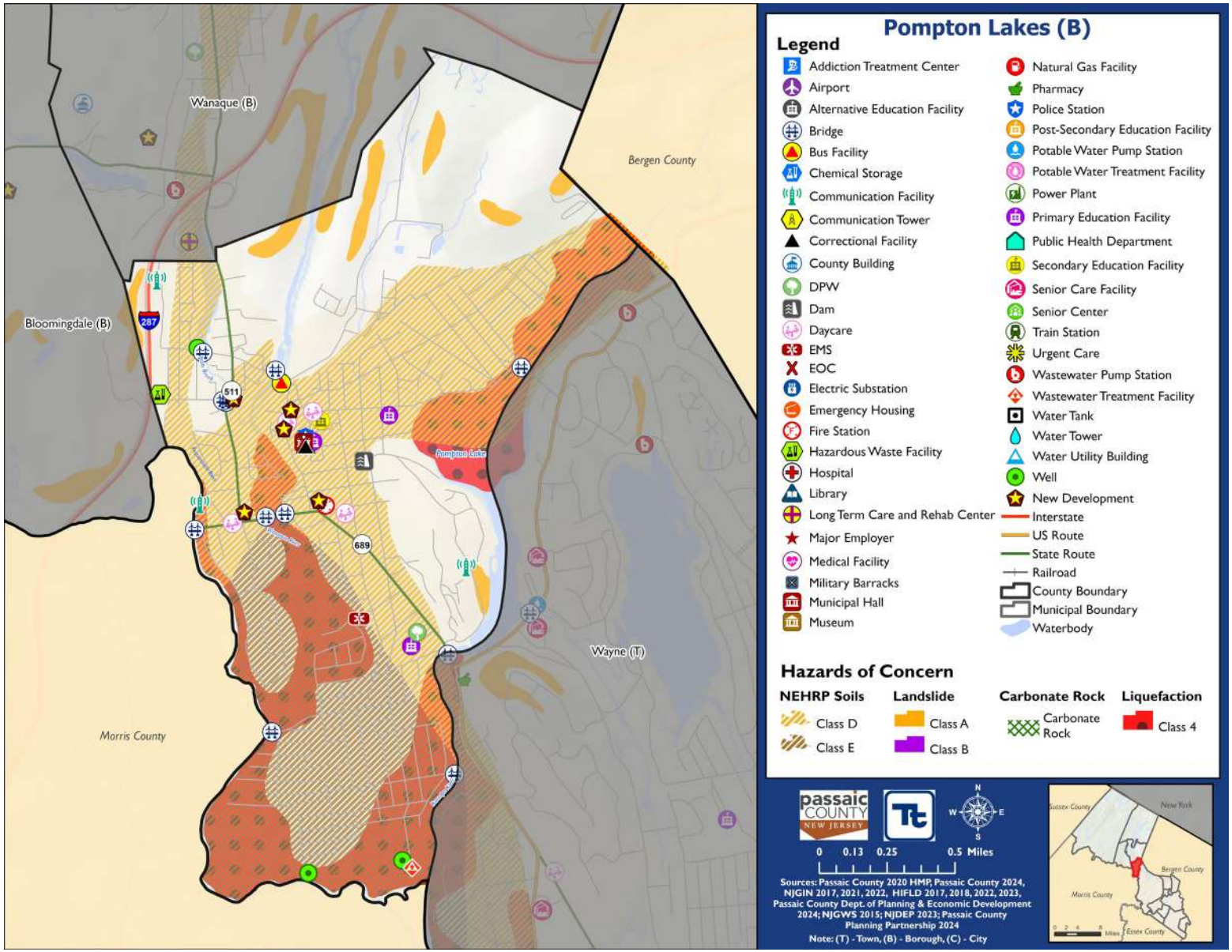
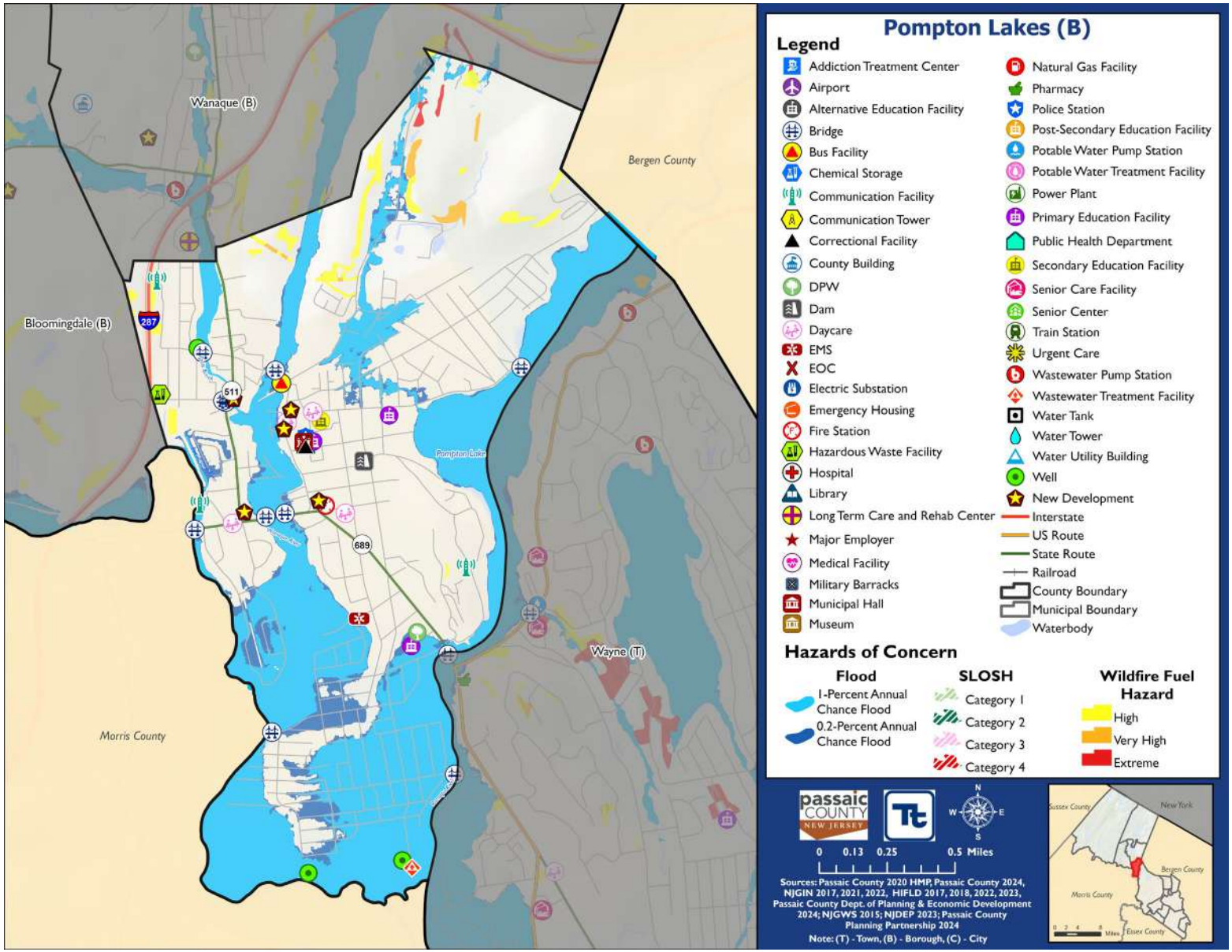


Figure 11-2. Pompton Lakes Flood and Wildfire Hazard Area Extent and Location Map



11.6.2 Hazard Event History

The history of natural and non-natural hazard events in Pompton Lakes is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 11-14 provides details on loss and damage in Pompton Lakes during hazard events since the last hazard mitigation plan update.

Table 11-14. Hazard Event History in Pompton Lakes

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Pompton Lakes
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	None
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	None
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	None

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

11.6.3 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 Pompton Lakes.

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. Pompton Lakes 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 Borough indicated the following:

- The Borough has experienced significant flooding and has put extensive resources into developing a strong floodplain management and mitigation program. The Borough agreed with the High ranking for the Flood hazard.

- The Borough of Pompton Lakes experiences recurring issues with downed trees and flooding that require the same temporary mitigation measures. The Borough works with NJDEP to comply with environmental regulations and obtain the necessary permits; however, this process requires the Borough to repeatedly apply for funding, but it is increasingly becoming an operating need. As a result, the Borough updated its hazard ranking for Severe Weather from Medium to High.
- Municipality deals with recurring issues with downed trees and flooding that require the same fixes again and again. It is cumbersome to continuously get the necessary permits from NJDEP and apply for funding, as this is an ongoing need rather than a capital investment.
- In early November 2024, during the planning process, the Borough experienced a wildfire near Cannonball Road and Pompton Lake. The event, called the Jennings Creek wildfire, affected more than 5,000 acres in Passaic County and Orange County in the State of New Jersey (Vannozzi 2024). The hilly and steep terrain of Passaic County contributed to the rapid spread, exacerbated by strong winds. As a result of this event, the Borough updated its hazard ranking for Wildfire from Low to Medium.

Table 11-15 shows Pompton Lakes's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 11-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Geologic Hazards	Medium
Extreme Temperature	Medium
Flood	High
Severe Weather	High
Severe Winter Weather	Medium
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 11-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

In addition to critical facilities that are exposed to flooding, the Borough of Pompton Lakes contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

Table 11-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600027	Bridge	X	X
1600028	Bridge	X	X
1600041	Bridge	X	X
1600042	Bridge	X	X
1600044	Bridge	X	X
1600045	Bridge	X	X
1600142	Bridge	X	X
1600503	Bridge	X	X
Lincoln E.S.	Primary Education Facility	-	X
Police Radio Tower	Communication Facility	X	X
Pompton Lakes DPW	DPW	X	X
Pompton Lakes MUA	Wastewater Treatment Facility	X	X
Well 1	Well	X	X
Well 2	Well	X	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

11.6.4 Identified Issues

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

- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 150 repetitive loss properties, but other nearby properties may be impacted by flooding as well. Revisiting the Open Space ROSSI may support identification of properties for encouraging buy-outs or other mitigation measures.
- The following critical facilities are municipally owned and located in the special flood hazard area:
  - Highway Bridge: 1600027
  - Highway Bridge: 1600028
  - Highway Bridge: 1600041
  - Highway Bridge: 1600042
  - Highway Bridge: 1600044
  - Highway Bridge: 1600045
  - Highway Bridge: 1600142
  - Highway Bridge: 1600503
  - Lincoln E.S.
  - Police Radio Tower

  - Pompton Lakes DPW
  - Pompton Lakes MUA
  - Well 1
  - Well 2
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- 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 following a storm, flood, or other hazard event.
- The Borough experiences flooding along the Ramapo River that may be attenuated using a natural berm or levee. To help determine the need, the Borough needs a flood gauge to assess conditions along the waterbody.
- The Borough experiences flooding along a bridge during intense precipitation events.
- The Borough and neighboring municipalities experience flood issues along the Pompton River. The flooding issues are being analyzed to determine what measures can be taken.
- The Borough has drainage issues relating to drainage infrastructure.
- The Borough does not have an ongoing stream clearing permit from NJ DEP which makes it difficult to mitigate stream flooding as a result from debris backup.
- The Borough is unaware of how climate change will impact their economy, built and natural environment, and their population.
- The Borough has not updated its Floodplain Damage Prevention Ordinance to be in accordance with NJDEP's Code Coordinated Ordinance. The ordinance needs to be updates to incorporate new Flood Hazard Area rules and comply with state and NFIP requirements.
- A primary cause of flooding in the Borough is degraded habitat conditions along the Pompton River, Ramapo River, Wanaque River, and Pequannock River. Restoring the natural habitat along these water bodies could alleviate some flooding issues. The Borough would have to hire professionals with expertise in river restoration and/or living shorelines to assess damage areas and preferred strategies.
- The Borough has a "Prepare & Recover" information booklet to educate residents on flood risks; however, not all residents are aware of this resource. The Borough could update the booklet to increase visibility by adding a QR code with a link to it on newsletters and other municipal materials, like calendars.

11.7 MITIGATION STRATEGY AND PRIORITIZATION

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

11.7.1 Past Mitigation Action Status

Table 11-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

11.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 11-17, Pompton Lakes identified the following mitigation efforts completed since the last HMP:

- Bank stabilization projects; want to do more of this; considered rip/rap and sheet piling; Wanaque and Peconic rivers in the Borough.

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

- The Borough has allocated $100 million in its Capital Improvement Plan to repair its rivers from flood damage, like bank stabilization activities. In the 2024 Plan, the Borough included funds to fix damage to riverbanks that are not under the jurisdiction by FEMA or NJDEP, so the Borough has to pay for this project itself.
- The Borough worked with FEMA to facilitate a community outreach effort on flood buyouts and relocations. There have been several buyouts in the past few years in the Borough. The FEMA outreach effort identified approximately 10 new homeowners that were interested in potential buyouts. Some Borough property owners are unwilling to sell their homes due to low offers, despite initial interest.
- Since the last plan update, the Borough has contracted the facilitation of an open space survey and an assessment on the deer population.
- The Borough has contracted a private company to conduct drone aerial imagery to assess flood damage to its riverbanks. The Borough has an NJDEP permit to conduct this work until 2025.
- Since the last plan update, the Shade Tree Committee has updated the last community forestry plan.

Table 11-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Pompton Lakes-001			FPA	Support the mitigation of vulnerable structures via retrofit (e.g., elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable.	1.In Progress 2. The remaining structures needed elevations have not applied or taken offers in the past from FEMA to do so. The Borough encourages elevations.	1. Include 2. N/A 3. Borough will encourage elevations if money is provided by State or Federal entities so as to protect residents but continue to support the Borough tax base.
2020-Pompton Lakes-002			Borough of Pompton Lakes	Complete drone survey of areas that are prone to snags and silting. Use this information to complete de-snagging and desilting operations.	1. Ongoing Capability 2. The Borough has been asked to include the cost of the drone surveys in the annual operating budget. The past surveys have been donated.	1.Discontinue 2.N/A 3. Project is ongoing capability

Project Number	Project Name	Hazards 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.
2020-Pompton Lakes-003			County	Address the river constriction issues on the Ramapo River at the Dawes Highway bridge by working with the State and County to construct either a set of bypass channels or another diversion or storage structure.	1. No Progress 2. Borough met with the Passaic County Engineering Department to address restrictions and were told that the proposals cannot be done for engineering and cost reasons.	1.Discontinue 2.N/A 3. Not feasible to re-route roadway or widen bridge; new construction might make it slightly wider but not to the extent requested by Borough. It looks as though the project will go forward without Borough recommendations.
2020-Pompton Lakes-004	Repetitive Loss Properties		NFIP Floodplain Administrator	Continue the acquisition and removal of homes along River Edge Drive, with the intention of construction additional flood storage along the Ramapo River.	1. In Progress 2. Borough held public meeting to discuss acquisition of properties with FEMA in April 2024; homeowners spoke with FEMA counselors and got an estimate of appraisal of the house. Resulted in about 10 people interested in pursuing home sale/elevations. Borough will continue push to acquire remaining four homes on River Edge Drive.	1.Include 2.Keep as is 3. N/A
2020-Pompton Lakes-005			Borough	Work with NJ DEP to secure an ongoing permit for stream clearing.	1.In Progress 2. Borough needs to have an open permit to perform emergent mitigation operations as well as an annual permit for stream and river maintenance.	1.Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Pompton Lakes-006			OEM	Work with USGS and NWS for gauge. Already have existing location for installation set	1.No Progress 2. FEMA declined installing another gauge on Ramapo River. Borough had requested it	1.Include 2. Keep as is 3. N/A
2020-Pompton Lakes-007			Engineering	Put vented sides or guardrail on bridge that would prevent water from being diverted to the side of the bridge.	1.No Progress 2. Borough is continuing effort to pursue this. Put it forward to the County. Bridge experienced additional flooding during snow/rain events.	1.Include 2. Keep as is 3. N/A
2020-Pompton Lakes-008			Engineering	Regional analysis and control of the Pompton River.	1.No Progress 2. Hoping this will fund an effort; discussed with Wayne/Pequonic (nearby muni) engineer.	11.Include 2. Keep as is 3. N/A
2020-Pompton Lakes-009			Engineering, Public Works	The Engineering Department will design improvements to address drainage issues. Public works will carry out the improvements.	1.No Progress 2. Improvements wanted were check valves; not going to work (based on past experience). Not feasible or not cost-effective.	1.Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Pompton Lakes-010			Flood Advisory Board	The Borough will gather and review climate change studies that pertain to the local flood condition and develop flood actions and strategies based on this analysis.	1.In Progress 2. Work with Rutgers U on this; Flood Advisory Committee is pushing for permeable pavement on road shoulders	1.Include 2. Keep as is 3. N/A
2020-Pompton Lakes-011			Flood Advisory Board	Complete an invasive species inventory and remove invasives. Restore impacted habitats.	1.Complete and Ongoing 2. Proud to announce that the Borough has eradicated a large amount of bamboo and other invasive species in our flood affected areas to allow for better flow of flood water	1. Discontinue 2. N/A 3. This action has been completed.

Project Number	Project Name	Hazards 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.
2020-Pompton Lakes-012			Flood Advisory Board	Complete outreach and public education to property owners.	1.Ongoing Capability 2. In past year, Boro revamped insert (Emergency Flood Preparedness Handbook) which is sent out with Boro calendar. Handbook lists dos/don'ts for property owners for before/during/after storm. This year, changing color of booklet to make it more eye-catching. Adding more graphics to bring more attention to it. Boro has the annual emergency preparedness seminar every March (tape, put it on Channel 77 Local Govt TV station, on muni site/YT)	1. Discontinue 2. N/A 3. This action is ongoing.

11.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Pompton Lakes 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 Pompton Lakes 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 Borough priorities.

Table 11-18 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 11-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 11-18. 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
Drought	X		X	X	X		X	X		X
Geological Hazards	X		X	X	X		X	X		X
Extreme Temperature	X		X	X	X		X	X		X
Flood	X	X	X	X	X	X	X	X	X	X
Severe Weather	X	X	X	X	X	X	X	X	X	X
Severe Winter Weather	X	X	X	X	X		X	X		X
Wildfire	X		X	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 11-19. 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**	
Action 2025-PomptonLakesB-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-PomptonLakesB-002	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	12	High
Action 2025-PomptonLakesB-003	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	11	High
Action 2025-PomptonLakesB-004	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	11	High
Action 2025-PomptonLakesB-005	Ramapo River Flood Gauge	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
Action 2025-PomptonLakesB-006	Bridge Flood Mitigation	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
Action 2025-PomptonLakesB-007	Pompton River Analysis	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
Action 2025-PomptonLakesB-008	Drainage System Improvements	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
Action 2025-PomptonLakesB-009	Stream Clearing Permit	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
Action 2025-PomptonLakesB-010	Climate Change Studies and Practices	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
Action 2025-PomptonLakesB-011	Dam Owner Partnership	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-PomptonLakesB-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Flood Advisory Board
Hazard(s) of Concern:	Severe Weather, Flood
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 Borough has 150 repetitive loss properties, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 300 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,3,4,5,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2025-PomptonLakesB-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers
Supporting Agencies:	Flood Advisory Board
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge: 1600027 • Highway Bridge: 1600028 • Highway Bridge: 1600041 • Highway Bridge: 1600042 • Highway Bridge: 1600044 • Highway Bridge: 1600045 • Highway Bridge: 1600142 • Highway Bridge: 1600503 • Lincoln E.S. • Police Radio Tower • Pompton Lakes DPW • Pompton Lakes MUA • Well 1 • Well 2
Description of the Solution:	The Borough will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Borough will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Town Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	1,2,8
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.
Mitigation Category	Structure and Infrastructure Projects

CRS Category	Emergency Services, Property Protection	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2025-PomptonLakesB-003. Disaster Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	4,5
Benefits:	The action will result in increased quicker and more efficient cleanup after disaster events.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-PomptonLakesB-004. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	4,5
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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025-PomptonLakesB-005. Ramapo River Flood Gauge

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough is in need of new flood gauges that report out to Borough police, so that the gauges can be used as a warning for evacuation purposes. The Borough has also determined a need for another flood gauge on Ramapo River and has an existing location for installation set.
Description of the Solution:	The Borough will work with USGS and NWS to purchase and install another flood gauge on Ramapo River and will install gauges that can be read by police for emergency management. Once installed, the Borough will ensure the flood gauge is regularly maintained and evaluated to determine the best available data along the Ramapo River.
Estimated Cost:	TBD
Potential Funding Sources:	HMGP, FMA, Municipal Budget
Implementation Timeline:	Within 5 years
Goals Met:	2,5,8
Benefits:	The Borough will have better available data relating to the water levels of the Ramapo River as well as a better warning time for all Borough flood gauges.
Impact on Socially Vulnerable Populations:	Socially Vulnerable Populations may be disproportionately impacted by flooding along the Ramapo River and other bodies of water. With installation of a new gauge and other readable gages, those located near waterfront will be better protected.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	The flood gauges will provide faster flood related information so that facility owners may be better prepared to protect their facilities.
Impact on Capabilities:	This action improves the Borough’s capability to handle flood related events.
Climate Change Considerations:	Climate change is leading to an increase in intensity and frequency of precipitation events, which makes flooding more concerning.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Preventative Measures, Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Not cost effective; problem persists
Upgrade storm sewer systems	Does not give an emergency signal

Action 2025-PomptonLakesB-006. Bridge Flood Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Flood Advisory Board
Hazard(s) of Concern:	Flood, Severe Weather
Description of the Problem:	The Borough experiences flooding along a bridge during intense precipitation events.
Description of the Solution:	The Borough will put vented sides of guardrails on the bridge that would prevent water from being diverted to the side of the bridge.
Estimated Cost:	TBD based on mitigation technique
Potential Funding Sources:	HMGP, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	2,5
Benefits:	The bridge will not continue to flood.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	The bridge is a lifeline that allows for emergency vehicles to pass through.
Impact on Capabilities:	This improves the Borough's capacity to handle flooding.
Climate Change Considerations:	Climate change is leading to an increase in intensity and frequency of precipitation events, which makes flooding more concerning.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	The bridge will continue to flood
Improve storm drainage system	Does not guarantee bridge will not flood

Action 2025-PomptonLakesB-007. Pompton River Analysis

Lead Agency:	Public Works
Supporting Agencies:	Flood Advisory Board
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	The Borough and neighboring municipalities experience flood issues along the Pompton River. The flooding issues are being analyzed to determine what measures can be taken.
Description of the Solution:	The Borough and partnering municipalities will begin a flood study and will begin working the United States Army Corps of Engineers (USACE) to identify potential mitigation actions to reduce the occurrence of flooding and flood risk when floods do occur. Once identified, cost-effective actions will be carried out.
Estimated Cost:	TBD
Potential Funding Sources:	HMGP, FMA, Annual Budget
Implementation Timeline:	Within 5 Years
Goals Met:	4,5
Benefits:	• Flood risk will be reduced in hazard prone areas. • Vulnerable communities will be identified ahead of a flood event, which will allow first responders to plan and stage resources in those areas. • Future mitigation projects may be identified that will further increase overall community resiliency to flooding and other hazard events.
Impact on Socially Vulnerable Populations:	• Areas vulnerable to flooding will be made aware to Borough leadership and first responders which can place an emphasis on controlled future development. • If cost-effective mitigation actions are identified, they may be implemented in flood prone areas that could reduce their overall risk to loss of life and property.
Impact on Future Development:	• Flood insurance costs may decrease.
Impact on Critical Facilities/Lifelines:	• Transportation routes will be more likely to remain open if flooding is mitigated along them. • Hydration systems may remain potable for community usage if projects are identified to protect the existing infrastructure from flooding.
Impact on Capabilities:	This study will identify opportunities for mitigation funding to be spent in the areas in which it is most needed to increase resiliency and decrease damage from flood events.
Climate Change Considerations:	Consideration should be taken to ensure any projects conducted have accounted for increased extreme rainfall events.
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Projects
CRS Category	Public Information, Natural Resource Protection
Priority	High
Alternatives:	

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Not cost effective
Improve storm drainage system	Does not guarantee bridge will not flood

Action 2025-PomptonLakesB-008. Drainage System Improvements

Lead Agency:	Public Works
Supporting Agencies:	Flood Advisory Board
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough has drainage issues relating to drainage infrastructure.
Description of the Solution:	The engineering department will design improvements to address drainage issues. Public works will carry out the identified improvements.
Estimated Cost:	TBD
Potential Funding Sources:	HMGP, BRIC, FMA, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	2,5
Benefits:	The Borough will experience reduced flooding.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	Additional development can occur in the Borough with improved drainage in some areas.
Impact on Critical Facilities/Lifelines:	Critical facilities will not experience as much flooding.
Impact on Capabilities:	This action improves the flooding capability.
Climate Change Considerations:	Consideration should be taken to ensure any projects conducted have accounted for increased extreme rainfall events.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Not cost effective
Improve storm drainage system	Does not guarantee bridge will not flood

Action 2025-PomptonLakesB-009. Stream Clearing Permit

Lead Agency:	NJDEP
Supporting Agencies:	OEM; Flood Advisory Board
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough does not have an ongoing stream clearing permit from NJ DEP which makes it difficult to mitigate stream flooding as a result from debris backup.
Description of the Solution:	The Borough will secure an ongoing stream clearing permit so that they can perform emergent mitigation operations as well as stream and river maintenance.
Estimated Cost:	TBD
Potential Funding Sources:	Annual Budget
Implementation Timeline:	Within 5 Years; ongoing once established
Goals Met:	8
Benefits:	This action would help the Borough to reduce stream and river related flooding and would promote mitigation operations related to rivers and streams.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be disproportionately impacted by river flooding events, this action would support efforts to reduce river related flood events.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	Critical facilities that are impacted by river and stream related flooding would be better protected from those flooding events.
Impact on Capabilities:	This action improves the Borough's ability to handle flood events and prevent river related flood events.
Climate Change Considerations:	Climate change is leading to an increase in intensity and frequency of precipitation events, which makes flooding more concerning.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures, Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not fix the root issue, not cost effective
Elevate all roadways/properties impacted by flooding	Not cost effective

Action 2025-PomptonLakesB-010. Climate Change Studies and Practices

Lead Agency:	Planning Board; Flood Advisory Board
Supporting Agencies:	Rutgers University; Pompton Lakes Environmental Protection Committee
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The Borough is unaware of how climate change will impact their economy, built and natural environment, and their population.
Description of the Solution:	The Borough will work with Rutgers University on this and will launch climate friendly initiatives, such as a public tree planting to increase tree coverage in the Borough, as well as evaluating the benefits of permeable pavement on road shoulders.
Estimated Cost:	TBD
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	5
Benefits:	This action helps educate the Borough on how climate change will impact them and gives students an opportunity to help out a local community and learn about climate change.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be disproportionately affected by climate change events, this action aims to help build up the Borough to be more resistant to the impacts of climate change.
Impact on Future Development:	Future development can use this initiative to ensure their development is built in a more sustainable fashion and is built to withstand climate change events.
Impact on Critical Facilities/Lifelines:	Critical lifelines can be better mitigated to withstand climate change impacts.
Impact on Capabilities:	This action improves the Borough's capability to harden the community.
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	Education and Awareness Program; Natural Systems Protection
CRS Category	Natural Resource Protection, Public Information
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Elevate all buildings	Not cost effective
Elevate all roads	Not cost effective

Action 2025-PomptonLakesB-011. Dam Owner Partnership

Lead Agency:	Flood Advisory Board
Supporting Agencies:	OEM; NJDEP; Dam Owners
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has a high-hazard potential dam, the Pompton Lakes Dam, within its jurisdiction. These structures have the potential to impact those living nearby.
Description of the Solution:	The Borough will work with the owners of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by Borough OEM and shared with the County OEM.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,9
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:	N/A
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	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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

12. BOROUGH OF PROSPECT PARK

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

12.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Prospect Park identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management Coordinator represented the community on the Passaic 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 12-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 12-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Ariosto Rodriguez, OEM Coordinator Address: 106 Brown Avenue, Prospect Park, NJ 07508 Phone Number: (754) 226-7080 Email: prospectparkoem@prospectpark.net	Name/Title: Hana Hataf, Acting Business Administrator Address: 106 Brown Avenue, Prospect Park, NJ 07508 Phone Number: (973) 790-7902 ext. 532 Email: hatafh@prospectpark.net
National Flood Insurance Program Floodplain Administrator	
Name/Title: Ariosto Rodriguez, OEM Coordinator Address: 106 Brown Avenue, Prospect Park, NJ 07508 Phone Number: (754) 226-7080 Email: prospectparkoem@prospectpark.net	
Additional Contributors	
Name/Title: Ariosto Rodriguez, OEM Coordinator Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff; Provided information on hazard history, capabilities, NFIP program, building permits, previous mitigation actions, and critical facilities.	
Name/Title: Arsalan Gilani, Borough Engineer Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Steve Damiano, Police Department Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Walter Richmond, Police Department Method of Participation: Attended Planning Partnership Kickoff.	
Name/Title: Yeisy Reyes, Deputy OEM Coordinator Method of Participation: Attended Planning Partnership Kickoff.	

Primary Point of Contact	Alternate Point of Contact
Name/Title: George Stout, Assistant Superintendent of Department of Public Works Method of Participation: Provided information on previous mitigation action status and NFIP program.	
Name/Title: Mike Hafner, Zoning Official, Building Department Method of Participation: Provided building permit data.	
Name/Title: Debbie Buchanan, Chief Financial Officer Method of Participation: Provided information about damages and losses from previous hazard events.	

12.2 COMMUNITY PROFILE

12.2.1 Brief History

The early Dutch settlements in the area built a strong sense of community that has grown alongside the Borough's growth. The Prospect Park Quarry was opened in 1901, the same year as the Borough's incorporation as an independent municipality. The Quarry remained open and owned by multiple families and companies until the 1980's. After its closure, Tilcon employed a mineral collector to identify and preserve minerals and crystals that can be seen on display at the Smithsonian, the American Museum of Natural History and the Paterson Museum.

12.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 0.478 square miles, of which 0.475 square miles is land and 0.003 square miles is water. It is bordered by the Borough of Haledon to the north and west, City of Paterson to the South, and the Passaic River to the east.

12.2.3 Governing Body Format

Prospect Park is governed by a Borough Council and Mayor that are elected, as well as the Borough Administrator and Clerk and several boards and committees focusing on specific topics, such as health and land use.

12.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Prospect Park was 6,372 an 8.6 percent increase 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 2020 U.S. Census indicates that 8.3 percent of the population is 5 years of age or younger, 9.9 percent is 65 years of age or older, 11.3 percent is non-English speaking, 17.1 percent is below the poverty threshold, and 14.3 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household

essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32% of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26%). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66%. Passaic County faces low household income compared to the state average of $89,296 and is on par with the state average of 66% for labor force participation rates. 15% of Passaic households live in poverty, which exceeds the state average of 10%.

12.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Prospect Park 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 Prospect Park to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

12.3.1 Planning and Regulatory Capability and Integration

Table 12-2 summarizes the planning and regulatory tools that are available to Prospect Park.

Table 12-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.); Chapter 131 – Buildings, Unfit; Chapter 146 Construction Codes, Uniform	State and Local	Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 131: The existence and occupation of dwellings in the Borough of Prospect Park which are unfit for human habitation are inimical to the welfare and dangerous and injurious to the health and safety of the residents of the Borough of Prospect Park, and a public necessity exists for the repair, closing or demolition of such dwellings. Chapter 146: There is hereby established in the Borough of Prospect Park a State Uniform Construction Code Enforcing Agency to be known as the "Construction Code Enforcing Agency of the Borough of Prospect Park," consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the Enforcing Agency. The Plumbing Subcode Official shall be the Plumbing Inspector as appointed by the Board of Health.				
Zoning/Land Use Code	Yes	Chapter 235 Land Development, Part 6 – Zoning	Local	Zoning Officer
How has or will this be integrated with the HMP and how does this reduce risk? The purposes of this chapter are to establish a pattern for the use of land and buildings based on the land use element of the Master Plan, to implement the Master Plan and to encourage municipal action to guide the appropriate and orderly development of land in a manner which will promote the public health, safety, morals and general welfare of the people. This chapter is intended to regulate the use of land within zoning districts; secure safety from fire, flood, panic, and other natural and man-made disasters; provide adequate light, air, and open spaces; limit and restrict buildings and structures to specified zones and regulate buildings and structures according to their type and the nature and extent of their use, and regulate the nature and extent of the use of land for trade, industry, residence, open space or other purposes; regulate the bulk, height, number of stories, and size of buildings and other structures; avoid a conflict with the development and general welfare of neighboring municipalities, the county and the state; establish appropriate population densities and concentrations contributing to the well-being of persons, neighborhoods, communities and regions and the preservation of the environment; provide sufficient space for residential, recreational, commercial and industrial uses and open space; encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging the location of such facilities and routes which result in congestion or blight; promote a desirable visual environment; promote the conservation of open space and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land; and encourage coordination of various public and private procedures and activities shaping land development with a view of lessening the cost of such development and to the more efficient use of land.				
Subdivision Code	Yes	Chapter 235– Land Development	Local	Planning and Engineering
How has or will this be integrated with the HMP and how does this reduce risk? Ensures safe and uniform construction and permitting of approved facilities. Sets standards for submission and review of subdivision plats.				

	Jurisdiction has this?	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
Site Plan Code	Yes	Chapter 235 – Land Development Article XV Plat Design Standards for Site Plans and Article XVIII Construction Permits, Site Plan Approvals, and Variances Outstanding	Local	Planning, Engineering, and Zoning Officer
How has or will this be integrated with the HMP and how does this reduce risk? Sets standards for site plans and approval process for site plans.				
Stormwater Management Code	Yes	Chapter 234 Land Development, Article XXIX Stormwater Control; Chapter 354 – Stormwater Control; Chapter 356 – Stormwater Management	Local	Borough Engineer
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 234 Article XXIX: It is the purpose of this article to establish minimum stormwater management requirements and controls for "major development." Chapter 354: The purpose of this chapter is to establish minimum stormwater management requirements and controls for major development. Chapter 356: Establishes restrictions to prevent contamination of stormwater runoff from yard waste, pet waste, fertilizers, etc. and prohibits illicit connections.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 385 Trees	Local	Shade Tree Commission
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 385: Establishes the Shade Tree Commission, requirements for tree removals.				
Flood Damage Prevention Ordinance	Yes	Chapter 235 – Land Development, Part 7 Flood Hazard Areas	Local	Floodplain Manager
How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this article 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 to rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; D. Minimize prolonged business interruption; E. Minimize damage to public facilities and utilities such as water and gas mains, electricity, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood-blight areas; G. 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 assume responsibility for their actions. The ordinance does not conform with the NJDEP's model code coordinated ordinance and will require update.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	Yes	Chapter 35 Fire Department, Chapter 50 Police Department	Local	Borough Council
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 35: Establishes the Fire Department and Auxiliary and appoints Fire Director Chapter 50: Establishes the Police Department				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
PLANNING DOCUMENTS				
General/Comprehensive Plan	Yes	Borough of Pompton Lakes Master Plan Reexamination, 2021	Local	Planning Department
How has or will this be integrated with the HMP and how does this reduce risk? The Borough adopted its last master plan in June 2000 and reexamined in 2009 and 2021. The Plan includes a goal to continue to evaluate and improve storm water structures to meet the current and future needs of the Borough.				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Capital Improvement Plan	Yes	Borough of Pompton Lakes Master Plan Reexamination, 2021	Local	Planning Department
How has or will this be integrated with the HMP and how does this reduce risk? Encourages Borough actions to guide the appropriate use or development of all lands in Prospect Park which will promote public health, safety, morals and general welfare, while securing the public from fire, flood, panic and other natural and manmade disasters.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	Yes	Stormwater Management Plan, 2017	Local	Borough Engineer
Stormwater management plan advises on adverse effects of stormwater runoff such as flooding, which is integrated in the HMP.				
Stormwater Pollution Prevention Plan	Yes	Municipal Stormwater Pollution Plan	Local	Borough Engineer
Plan advises on how to prevent stormwater pollution such was with flooding, erosion and water pollution.				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Emergency Operations Plan	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? Sets procedures to respond to various disasters and emergencies.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

12.3.2 Development and Permitting Capability

Table 12-3 summarizes the capabilities of Prospect Park to oversee and track development.

Table 12-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	- Planning and Land Use Board
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Engineering
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No	-
Describe the level of buildout in your jurisdiction.	N/A	Borough is fully developed. State has designated "Opportunity Zone," and the only land available for redevelopment is the quarry.

12.3.3 Administrative and Technical Capability

Table 12-4 summarizes potential staff and personnel resources available to Prospect Park and their current responsibilities that contribute to hazard mitigation.

Table 12-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning/Land Use Board is authorized to adopt bylaws governing its procedural operation. It shall also have the following powers and duties: A. To make and adopt and from time to time amend a Master Plan for the physical development of the Borough including any areas outside its boundaries which, in the Board's judgment, bear essential relation to the planning of the Borough. B. To administer the provisions of the Land Subdivision Ordinance and Site Plan Review Ordinance of the Borough. C. To participate in the preparation and review of programs or plans by state or federal law or regulations. D. To assemble data on a continuing basis as part of a continuous planning process. E. To consider and make report to the governing body within 35 days after referral as to any proposed development regulation submitted to it and also pass upon other matters specifically referred to the Planning/Land Use Board by the Borough Council. F. When reviewing applications for approval of subdivision plats, site plans or conditional uses, to grant, to the same extent and subject to the same restrictions as the Zoning Board of Adjustment.
Zoning Board of Adjustment	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	The Shade Tree Commission is responsible for the regulation, planting, care and control of shade and ornamental trees and shrubbery upon or in the highways, parks or parkways of the Borough of Prospect Park.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	Public Works and Recycling is responsible for trash and recycling and maintenance of the Borough's roads and stormwater system.
Construction/Building/Code Enforcement Department	Yes	The Construction Department is comprised of Construction, Housing Inspector, and Code Enforcement. The Housing Department provides a wide range of services including housing and property maintenance code enforcement for both residential and commercial properties, investigation of illegal housing, zoning code enforcement, certificate of occupancy; commercial and residential.
Emergency Management/Public Safety Department	Yes	The Borough of Prospect Park Office of Emergency Management (OEM) works to mitigate, plan and prepare for emergencies; educate the public about preparedness, coordinate emergency response and recovery efforts, collect and disseminate critical information, and seek funding opportunities in support of the overall preparedness of the Borough of Prospect Park. To accomplish this mission, OEM maintains disciplined staff of emergency management personnel, including responders, planners, administrative and support staff, to identify and respond to various hazards.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	DPW – 250 storm basins are inspected monthly DEP – part of the stormwater
Mutual aid agreements	Yes	Public Works (Hawthorne and North Haledon, Haledon, Clifton, County, Garfield (Bergen County), Paterson, Little Falls), Fire Department, Law Enforcement, Library Services (Hawthorne)
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	N/A	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Planners or engineers with an understanding of natural hazards	Yes	Engineering
Staff with expertise or training in benefit/cost analysis	Yes	Engineering
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Engineering and Planning
Staff that work with socially vulnerable populations or underserved communities	No	-
Environmental scientists familiar with natural hazards	No	-
Surveyors	Yes	Engineering
Emergency manager	Yes	OEM
Grant writers	Yes	Capital Alternatives (consultant)
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	Yes	The Borough has an engineering consultant that serves as an environmental specialist. The Borough also has access to local/state water quality professionals through Passaic Valley Water.

12.3.4 Fiscal Capability

Table 12-5 summarizes financial resources available to Prospect Park.

Table 12-5. Fiscal Capabilities

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

12.3.5 Education and Outreach Capability

Table 12-6 summarizes the education and outreach resources available to Prospect Park.

Table 12-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Borough Administrator
Personnel skilled or trained in website development	No	Borough outsources the website
Hazard mitigation information available on your website	Yes	The website has information regarding local news and events, link to sign up for community and emergency notifications, and contact information for municipal departments. Information on stormwater management is included on the Public Works page.
Social media for hazard mitigation education and outreach	Yes	The Borough has a Facebook page where they post municipal information, emergency alerts, events, and countywide information
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Code Red - mass text, email, reverse 911; social media - Facebook; and municipal website
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	Newsletter, borough calendar, school calendar

12.3.6 Community Classifications

Table 12-7 summarizes classifications for community programs available to Prospect Park.

Table 12-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes		
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	None	N/A
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

12.3.7 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 12-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 12-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam and Levee Failure	Moderate
Drought	Moderate
Geologic Hazards	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

12.4 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 12-1 is responsible for maintaining this information.

12.4.1 NFIP Statistics

Table 12-9 summarizes the NFIP policy and claim statistics for Prospect Park.

12.4.2 Flood Vulnerability Summary

Table 12-10 provides a summary of the NFIP program in Prospect Park.

Table 12-9. Prospect Park NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	0
Total Loss Payments	$0
# Repetitive Loss Properties (NFIP definition)	0
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties (NFIP definition)	0
# Severe Repetitive Loss Properties (FMA definition)	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 2024

Table 12-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	East Main Steet, Short Street, and North 17th Street (Dead end)
Do you maintain a list of properties that have been damaged by flooding?	Yes
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)?	N/A
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Keep track of damage items-DPW
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?	N/A
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Yes

NFIP Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	OEM, Police, Fire, DPW
Are any certified floodplain managers on staff in your jurisdiction?	Engineer
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? 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)	N/A
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Zoning Board
What are the barriers to running an effective NFIP program in the community, if any?	N/A
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)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 235 – Land Development, Part 7 Flood Hazard Areas
What is the date that your flood damage prevention ordinance was last amended?	Last amended in 2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Does not meet but will once the Borough adopts he Coordinated Ordinance.
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

12.5 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 12-11 through Table 12-13.

Table 12-11. 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
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0

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

Table 12-12. Recent Major Development and Infrastructure from 2017 to Present

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

** Only location-specific hazard zones or vulnerabilities identified.*

Table 12-13. 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
None reported.					

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

12.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 12-1 through Figure 12-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Prospect Park has significant exposure. The maps show the location of potential new development, where available.

Figure 12-1. Prospect Park NEHRP Hazard Area Extent and Location Map

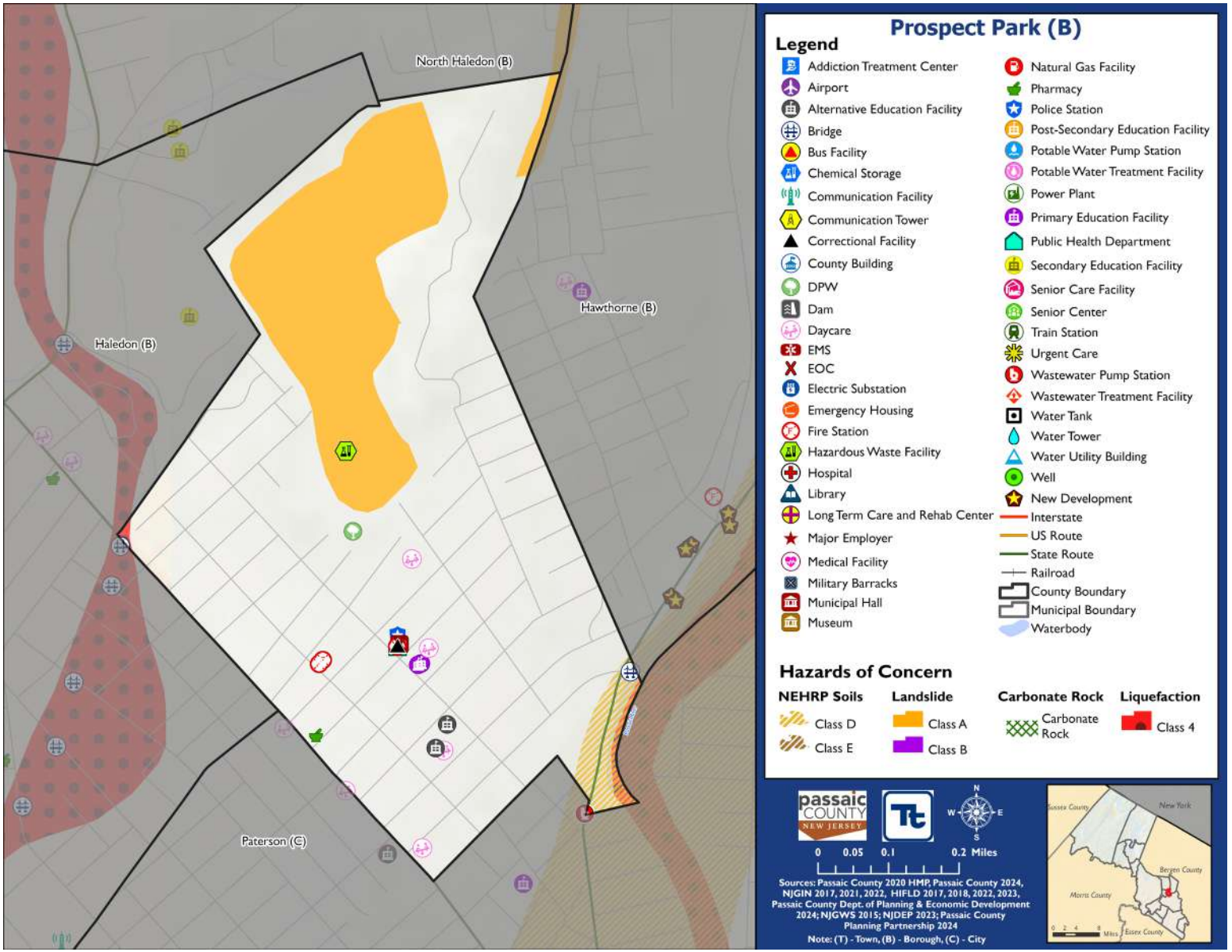
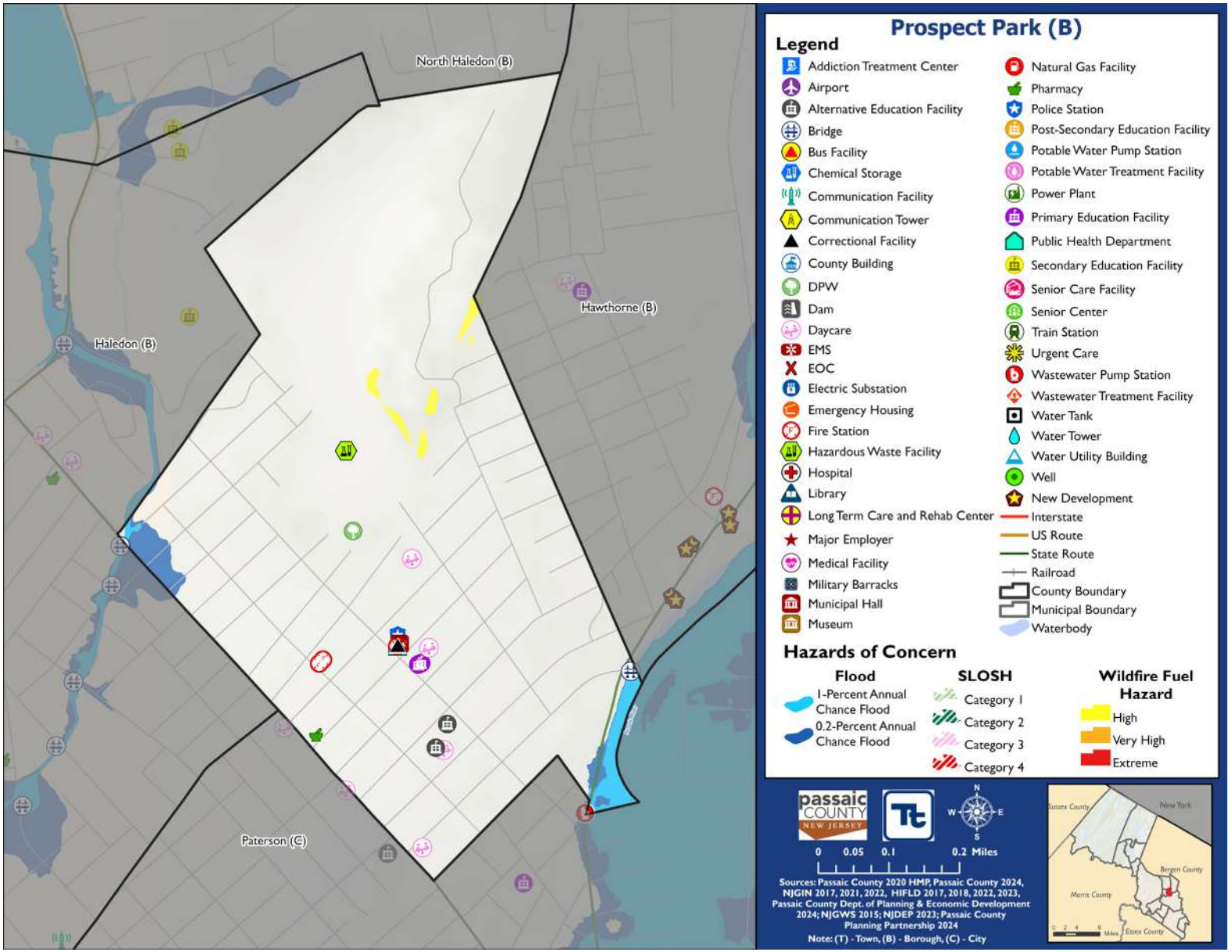


Figure 12-2. Prospect Park Flood and Wildfire Hazard Area Extent and Location Map



12.6.2 Hazard Event History

The history of natural and non-natural hazard events in Prospect Park is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 12-14 provides details on loss and damage in Prospect Park during hazard events since the last hazard mitigation plan update.

Table 12-14. Hazard Event History in Prospect Park

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Prospect Park
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	The Borough did not experience any documented damages and losses.
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	No damage, Personal Protective Equipment (PPE) purchased.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	E Main Street flooding, North 17th Street flooding.

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

12.6.3 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 Prospect Park.

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. Prospect Park 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 Borough indicated agreement with the preliminary ranking results.

Table 12-15 shows Prospect Park's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 12-15. Hazard Ranking

Hazard	Rank
Dam and Levee Failure	Low
Drought	Medium
Geologic Hazards	Low
Extreme Temperature	Medium
Flood	Medium
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 12-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 12-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600012	Bridge	-	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

No high hazard dams are located in the Borough of Prospect Park.

12.6.4 Identified Issues

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

- The following critical facilities are municipally owned and located in the special flood hazard area: Highway Bridge 1600012.
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.

- 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.
- The Borough has not adopted NJDEP's Code Coordinated Ordinance to ensure compliance with the NFIP.

12.7 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.

12.7.1 Past Mitigation Action Status

Table 12-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

12.7.2 Additional Mitigation Efforts

The Borough of Prospect Park did not identify mitigation efforts completed other than what is in Table 12-17.

Table 12-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020 – Prospect Park-001			Borough Administration	Purchase and install permanent generators at the Borough Hall, which serves as the EOC, and the public works garage.	1.Completed	1.Discontinue
2020 – Prospect Park-002			Borough OEM	Develop a shelter plan to identify proper sheltering for residents considering neighboring communities. The plan will include designating a shelter coordinator, develop an MOU with American Red Cross or Passaic County, identify shelter facilities and ensure agreements are in place, and train staff to maintain shelters.	1.Completed	1.Discontinue

Project Number	Project Name	Hazards 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.
2020 – Prospect Park-003			Borough Administration	Create an online code book to provide the codes to residents and businesses. This will allow the Borough to more effectively serve residents. It will also allow users to search and print codes.	1.Completed	1.Discontinue

Project Number	Project Name	Hazards 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.
2020 – Prospect Park-004			Borough Planning, Borough Engineer	Develop a circulation element of the Borough's master plan. This element will show the location and types of all facilities for all modes of transportation required for the efficient movement of people and goods into, around, and through the Borough. The element will include details on shuttle bus feasibility in the Borough. This will provide better connections between new development with the existing street network and better connections in the region.	1.Completed	1.Discontinue

12.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Prospect Park 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 Prospect Park 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 Borough priorities.

Table 12-18 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 12-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 12-18. 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
Drought	X				X					X
Geologic Hazards	X				X					X
Extreme Temperature	X				X					X
Flood	X	X			X	X				X
Severe Weather	X				X					X
Severe Winter Weather	X				X					X
Wildfire	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 12-19. 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**	
Action 2025-ProspectParkB-001.	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-ProspectParkB-002.	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-ProspectParkB-003.	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	11	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-ProspectParkB-001. Critical Facilities in the Floodplain

Lead Agency:	Borough of Prospect Park Office of Emergency Management
Supporting Agencies:	Construction Department
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge: 1600012
Description of the Solution:	The Borough will conduct a feasibility assessment to determine what additional floodproofing measures are needed at Highway Bridge:1600012 listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Borough will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Town Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	1,2,8
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Emergency Services, Property Protection
Priority	High

Alternatives:

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

Action 2025-ProspectParkB-002. Disaster Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	1,2
Benefits:	The action will result in increased quicker and more efficient cleanup after disaster events.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-ProspectParkB-003. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	1,2,8
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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

13. BOROUGH OF RINGWOOD

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

13.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Ringwood identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Deputy Coordinator of the Office of Emergency Management represented the community on the Passaic 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 13-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 13-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Scott Heck, Office of Emergency Management Deputy Coordinator/Borough Manager and Department of Public Works Director Address: 60 Margaret King Ave, Ringwood, NJ 07456 Phone Number: (973) 725-1661 Email: sheck@ringwoodnj.net	Name/Title: Patrick Murray, Jr., Office of Emergency Management Coordinator Address: 60 Margaret King Ave, Ringwood, NJ 07456 Phone Number: (917) 731-6958 Email: pmmurray@pjmandsons.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Jeffrey Yuhas, Borough Engineer Address: 60 Margaret King Ave, Ringwood, NJ 07456 Phone Number: (973) 475-7110 Email: jyuhas@ringwoodnj.net	
Additional Contributors	
Name/Title: Scott Heck, OEM Deputy Coordinator Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment Review/Mitigation Strategy Workshop; Provided information on hazard event history, capabilities, NFIP program, building permits, previous mitigation actions, and critical facilities.	
Name/Title: Patrick Murray, Jr. OEM Coordinator Method of Participation: Participated in Planning Partnership; Attended Planning Partnership Kickoff and Risk Assessment Review/Mitigation Strategy Workshop; Provided information on hazard event history, capabilities, NFIP program, building permits, previous mitigation actions, and critical facilities.	

13.2 COMMUNITY PROFILE

13.2.1 Brief History

In the early 1700s, settlers found iron ore, which prompted the construction of the first iron furnace in the area. Iron production was a major industry throughout the community's development, providing ammunition during the Revolutionary War and continuing production throughout the nineteenth and early twentieth century (Johnson 2005). The Borough of Ringwood was incorporated as an independent municipality when Pompton Township was divided into the Boroughs of Bloomingdale, Wanaque and Ringwood in 1918 (Ringwood Chamber of Commerce 2024).

13.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 28.2 square miles, of which 25.2 square miles is land and an approximate 3-square miles is water. The Borough is one of five towns that are 100% in the Highlands Preservation Zone. Most of the vacant land in the Borough is limited by wetlands, steep slopes, Category 1 waters, or located within the Highlands Preservation Area. In addition, the Borough zoning ordinance has many protective measures with regard to stormwater runoff and drainage throughout the Borough.

13.2.3 Governing Body Format

The Borough of Ringwood is governed by Council-Manager governing body. This structure is centered by the one directly elected body: the Council. The Council is made up of seven members and serves as policymakers for the Borough. Councilmembers serve four-year terms that are staggered. The Councilmembers elect the Mayor and Deputy Mayor in early January each year. The Mayor presides over the Council and votes in its proceedings but has no executive powers (Borough of Ringwood 2025).

The Council appoints the Manager, who serves as the chief executive and administrative officer. The duty of the Manager is to execute the will of the Council through appointing department heads, participating in Council meetings, negotiating contracts, preparing the municipal budget, and advising the Council on the Borough's financial condition. The Manager can be suspended or removed by a majority vote of the Council.

13.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Ringwood was 11,735, a 4 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 2020 U.S. Census indicates that 4.2 percent of the population is 5 years of age or younger, 17.1 percent is 65 years of age or older, 0.9 percent is non-English speaking, 2.2 percent is below the poverty threshold, and 8.1 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household income compared to the state average of $89,296 and is on par with the state average of 66% for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

13.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Ringwood 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 Ringwood to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

13.3.1 Planning and Regulatory Capability and Integration

Table 13-2 summarizes the planning and regulatory tools that are available to Ringwood.

Table 13-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14, International Building Code – New Jersey Edition, 2018; NJAC 5:24-3.14 Adopted 9/3/2019; Chapter 12 – Building and Housing; Chapter 40, Article 17 – Building Permits	State and Local	Construction Official

How has or will this be integrated with the HMP and how does this reduce risk?
Chapter 12 established a State Uniform Construction Code Enforcing Agency to be known as the Ringwood Uniform Construction Code Enforcing Agency, consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code.

Chapter 40, Article 17 was established to ensure compliance with the provisions of this chapter, no person shall erect, alter, or convert any structure or building or part thereof or alter or expand the use of any land subsequent to the adoption of this chapter until a Building Permit has been issued by the Construction Official.

	Jurisdiction has this?	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
Zoning/Land Use Code	Yes	Chapter 40 – Zoning Regulations	Local	Zoning Officer

How has or will this be integrated with the HMP and how does this reduce risk?
Zoning regulations are deemed necessary to achieve the following purposes:

a. To protect the character and maintain the stability of all areas within the Borough, and to promote the orderly and beneficial development of such areas.
b. To regulate the intensity, nature and extent of use of zoning lots and to determine the areas of open spaces surrounding buildings necessary to provide adequate light and air, privacy and convenience of access to property and to protect the public health, safety and welfare.
c. To establish building lines and the location of buildings designed for residential, commercial, industrial, office or other uses within such lines and to fix reasonable standards to which buildings or structures shall conform.
d. To prohibit uses, buildings or structures which are incompatible with the character of development or their permitted uses within specified zoning districts.
e. To prevent such additions to and alterations or remodeling of existing buildings or structures as would not comply with the restrictions and limitations imposed hereunder.
f. To limit congestion in the public streets and so protect the public health, safety, convenience and general welfare by providing for off-street parking of motor vehicles and for the loading and unloading of commercial vehicles.
g. To encourage the appropriate use or development of lands in this community in a manner which will promote the public health, safety, morals, and general welfare.
h. To secure safety from fire, flood, panic and other natural and man-made disasters.
i. To ensure that the development and general welfare within Ringwood does not conflict with the development and general welfare of neighboring municipalities, the County and the State as a whole.
j. To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment.
k. To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open space, both public and private, according to their respective environmental requirements in order to meet the needs of all New Jersey citizens.
m. To promote the conservation of open space and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land.
o. To reduce the hazards which exist in steep sloping areas by reason of erosion, siltation, flooding, surface water runoff, pollution of potable water supplies from point and non-point sources.
p. To preserve streams, watercourses and wetlands in their natural state wherever possible and practical.
q. To preserve and protect the quality and quantity of ground and surface water supply from pollution and violation of their safe yield.
r. To preserve and protect areas of high water table, flood way and flood hazard areas.
s. To assure the adequacy of existing and proposed culverts and bridges; to induce water recharge into the ground where practical; to lessen non-point pollution; to maintain the integrity of stream channels for their biological functions as well as for drainage and the means necessary for water supply, preservation or prevention or alleviation of flooding.

Subdivision Code	Yes	Chapter 36 – Land Subdivision	Local	Planning

How has or will this be integrated with the HMP and how does this reduce risk?
The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Borough has a Planning Board. The Borough Land Subdivision code (Chapter 36) provides rules, regulations and standards to guide land subdivision and land use control in the Borough. The flood hazard, wetlands, percent slope need to be included in the subdivision application to be reviewed by the Planning Board.

	Jurisdiction has this?	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
Site Plan Code	Yes	Chapter 36 – Land Subdivision	Local	Planning
How has or will this be integrated with the HMP and how does this reduce risk? The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county-by-county planning board and for the approval of those subdivisions affecting county road or drainage facilities. 40:27-6.10: Each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map.				
Stormwater Management Code	Yes	Chapter 28 – Stormwater Management	Local	Planning, Stormwater Coordinator
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter is to establish minimum stormwater management requirements and controls for major development (i.e., one acre more acre of land or increasing impervious surface by ¼ acre or more) in the Borough of Ringwood. Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards in the chapter. To the maximum extent feasible, these standards shall be met by incorporating nonstructural stormwater management strategies into the design. If these strategies alone are not sufficient to meet these standards, structural stormwater management measures necessary to meet these standards shall be incorporated into the design.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	Yes	Chapter 40 – Zoning Regulations	Local	Construction Official

How has or will this be integrated with the HMP and how does this reduce risk?
The Zoning Regulations:

- Establish a precise and detailed plan for the use of land and buildings in the Borough of Ringwood and is enacted in order to promote and protect the public health, safety, morals and general welfare of the people.
- Encourage the appropriate use or development of lands in this community in a manner which will promote the public health, safety, morals, and general welfare.
- Ensure that the development and general welfare within Ringwood does not conflict with the development and general welfare of neighboring municipalities, the County and the State as a whole.
- Promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment.

Environmental Protection Ordinance(s)	Yes	Chapter 37 – Environmental Impact Statements	Local	Planning Board, Board of Adjustment

How has or will this be integrated with the HMP and how does this reduce risk?
Environmental Assessment Ordinance (Environmental Impact Statement) was passed in compliance with the Highlands Act. The Borough is one of five towns that are 100 percent within the Highlands Preservation Zone. The EIS considers slopes, stream corridors, floodplains, water supply and other hazard areas and environmental resources.

Flood Damage Prevention Ordinance	Yes	Chapter 27 – Flood Damage Prevention	Federal, State, Local	Construction Official

How has or will this be integrated with the HMP and how does this reduce risk?
These regulations, in combination with the flood provisions of the Uniform Construction Code and FHACA shall apply to all proposed development in flood hazard areas established in Section 27-102 of these regulations. The purposes and objectives of these regulations are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to:

a. Protect human life and health.
b. Prevent unnecessary disruption of commerce, access, and public service during times of flooding.
c. Manage the alteration of natural floodplains, stream channels and shorelines;
d. Manage filling, grading, dredging and other development which may increase flood damage or erosion potential.
e. Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards.
f. Contribute to improved construction techniques in the floodplain.
g. Minimize damage to public and private facilities and utilities.
h. Help maintain a stable tax base by providing for the sound use and development of flood hazard areas.
i. Minimize the need for rescue and relief efforts associated with flooding.
j. Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas.
k. Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events.
l. Meet the requirements of the National Flood Insurance Program for community participation set forth in Title 44 Code of Federal Regulations, Section 59.22.

This ordinance follows the latest model code coordinated ordinance and meets the minimum requirements for complying with the NFIP.

	Jurisdiction has this?	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
Wellhead Protection	Yes	Chapter 39 – Wellhead Protection	Local	Zoning Officer and Engineer
How has or will this be integrated with the HMP and how does this reduce risk? Delineation of well head protection areas (WHPAs) is part of the NJ-approved 1991 well head protection plan (WHPP) for public community water supply wells. These are priority areas for efforts to prevent and clean up ground water contamination. Municipalities are empowered to regulate land use, physical facilities and other activities within WHPAs areas, the potential for groundwater contamination can be reduced under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes each municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents. Also refer to Safe Drinking Water Regulations (NJAC 7:10-11.7(b)1)). The Borough's Well Head Protection ordinance is Chapter 39. The groundwater under the Borough is a major source of existing and future water supplies, including drinking water. The Borough of Ringwood is empowered to regulate these activities under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A 40:55D-1 et seq., which authorizes each Municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents.				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Tree Protection Ordinance	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Tree Protection Ordinance in the zoning ordinance – This ordinance regulates the removal of trees on private property; a permit is needed from the Building Department prior to removal.				
PLANNING DOCUMENTS				
General/Comprehensive Plan	Yes	Borough of Ringwood Master Plan, Reexamination, 2022	Local	Planning
How has or will this be integrated with the HMP and how does this reduce risk? The Borough intends to integrate the Master Plan with the updated HMP.				
Capital Improvement Plan	Yes	Borough of Ringwood Master Plan, Reexamination, 2022	Local	Borough Manager
How has or will this be integrated with the HMP and how does this reduce risk? The Borough intends to integrate the Master Plan with the updated HMP.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Floodplain Management or Watershed Plan	Yes	An Assessment of the Lakes and Watersheds of Ringwood Borough, 2021	Local	Borough Manager
How has or will this be integrated with the HMP and how does this reduce risk? Ringwood Borough in Passaic County is located entirely within the Preservation Area of the Highlands Region (18,230 acres). The municipality's Petition for Plan Conformance was approved by the Highlands Council on October 13, 2011. Providing drinking water to millions of New Jersey residents, the Borough of Ringwood is situated in the heart of the New Jersey Highlands and is home to several public and private lakes that sit within the Ramapo Mountains. In order to take an active role in the management of these natural resources within multiple watersheds, the Borough of Ringwood will be the first municipality in the state of New Jersey to take a regional approach to private lake management through a public-private partnership (PPP) with lake associations. Although these lakes are private, the Borough wishes to take an active role in the management of the surrounding watersheds of these lakes, as the lakes themselves are managed by their respective associations. This regional approach to lake management has recently been informally suggested by staff of both the New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Highlands Council (NJHC). The assessment includes various recommendations for stormwater management upgrades such as porous pavement, vegetated swales, retention basins, etc.				
Stormwater Management Plan	Yes	Municipal Stormwater Management Plan, 2005	State and Local	Stormwater Coordinator
How has or will this be integrated with the HMP and how does this reduce risk? NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).				
Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan	State and Local	Stormwater Coordinator
How has or will this be integrated with the HMP and how does this reduce risk? Permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).				
Open Space Plan	Yes	Open Space Plan, 2010	Local	Open Space Committee
How has or will this be integrated with the HMP and how does this reduce risk? To preserve open space and provide a balance of recreational activities, while improving and protecting water and air quality, historic sites, farmland, and other natural resources.				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	Yes	Borough of Ringwood Master Plan, Reexamination, 2022	Local	Borough Manager
How has or will this be integrated with the HMP and how does this reduce risk? The Borough intends to integrate the Master Plan with the updated HMP.				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	-	Local	-
• Stream Corridor Management Plan • Housing Element and Fair Share Plan, May 10, 2010 • Natural Resource Inventory, June 2005				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Public Health Plan	Yes	Health Community Planning Report, 2022	Local	Borough Health Department
How has or will this be integrated with the HMP and how does this reduce risk? Provides individual, municipal-level reports that offer a snapshot of a municipality's health and environmental data to help promote a healthy and safe environment.				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

13.3.2 Development and Permitting Capability

Table 13-3 summarizes the capabilities of Ringwood to oversee and track development.

Table 13-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 N/A	Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes	Borough has a build-out plan as part of the COHA obligation
Describe the level of buildout in your jurisdiction.	N/A	Land use in the Borough is predominately conservation and residential, with commercial recreation, industrial, and business uses. Since the adoption of the 2012 Master Plan Reexamination Report, the Borough has experienced minimal development

13.3.3 Administrative and Technical Capability

Table 13-4 summarizes potential staff and personnel resources available to Ringwood and their current responsibilities that contribute to hazard mitigation.

Table 13-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Planning/Land Use Administrator The Ringwood Planning Board was established to perform the duties of a municipal Planning Board as outlined in the Municipal Land Use Law. The Board consists of nine members and two alternates. Members include the Mayor, a member of the Borough Council as well as nine residents of the community. The resident members are appointed by the Mayor.
Zoning Board of Adjustment	Yes	The Zoning Board reviews appeals from the decision of the Zoning Officer, requests for interpretation of the Zoning Ordinance, Dimensional Variances, Use Variances, Map Act Variances, Site Plan reviews and Subdivision Approval.
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Environmental Commission
Open Space Board/Committee	Yes	Open Space, Conservation, Recreation, Farmland and Historical Preservation Advisory Committee The Committee shall prioritize the needs of the Borough with specific regard to the a.) Need for Environmental Conservation and Protection of Open Space, b.) Need for Additional Recreational/Parkland Uses, c.) Need for and Viability of Purchases for Farmland and Historical Preservation and Restoration Purposes.
Economic Development Commission/Committee	Yes	Economic Development Advisory Commission The Ringwood Economic Development Commission will provide direct support to light industry and commercial companies seeking to relocate or expand in Ringwood.
Public Works/Highway Department	Yes	Department of Public Works Responsible for the operation and functioning of the Borough's extensive municipal infrastructure (roadways, storm drainage, sanitary sewerage, potable water supply and distribution, recycling and solid waste collection and disposal) as well as maintenance of ballfields, parks, and playgrounds.
Construction/Building/Code Enforcement Department	Yes	Building and Zoning The Building Department includes administration and enforcement of zoning, building and other codes as well as property maintenance. Within the Building Department, the Ringwood Construction Official enforces the New Jersey State Uniform Construction Code (UCC).

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Emergency Management/Public Safety Department	Yes	Emergency Management and Police Department The Borough of Ringwood Office of Emergency Management is a standalone component of the Municipal government. The office works closely with Federal, State, County and local agencies to assure the coordination of large-scale events. It plans for, coordinates and directs operations at large scale civil emergencies that usually require the coordinated efforts of multiple components of municipal government, outside agencies and local volunteer groups.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	DPW/Engineering – stormwater management, de-snagging, clearing
Mutual aid agreements	Yes	Borough Manager
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering/Borough Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering/Borough Engineer
Planners or engineers with an understanding of natural hazards	Yes	Engineering/Borough Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Borough Manager
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Engineering/Borough Engineer
Staff that work with socially vulnerable populations or underserved communities	Yes	Health Department
Environmental scientists familiar with natural hazards	No	-
Surveyors	No	-
Emergency manager	Yes	Borough Manager
Grant writers	No	-
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

13.3.4 Fiscal Capability

Table 13-5 summarizes financial resources available to Ringwood.

Table 13-5. Fiscal Capabilities

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

13.3.5 Education and Outreach Capability

Table 13-6 summarizes the education and outreach resources available to Ringwood.

Table 13-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	-
Personnel skilled or trained in website development	Yes	-
Hazard mitigation information available on your website	Yes	Community preparedness toolkit; FEMA's website; hurricane survival guide for New Jersey; Gypsy Moth bulletin and other resources for residents on emergency preparedness; stormwater management information, FEMA flood maps, mines, and superfund sites.
Social media for hazard mitigation education and outreach	Yes	Used for Sustainable Jersey efforts Post information regarding cleaning catch basis and storm events
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Reverse 911 and social media
Natural disaster/safety programs in place for schools	No	-

Outreach Resources	Available?	Comment
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	Police department phone line for road hazards and street closures

13.3.6 Community Classifications

Table 13-7 summarizes classifications for community programs available to Ringwood.

Table 13-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	Class 4 (1 and 2 dwellings) Class 3 for all other construction	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Bronze	December 10, 2021
Other: Organizations with mitigation focus (advocacy group, non-government)	N/A	-	-

N/A = Not applicable
— = Unavailable

13.3.7 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 13-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 13-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological Hazards	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

13.4 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 13-1 is responsible for maintaining this information.

13.4.1 NFIP Statistics

Table 13-9 summarizes the NFIP policy and claim statistics for Ringwood.

Table 13-9. Ringwood NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**3**
Total Loss Payments	**$30,759**
# Repetitive Loss Properties (NFIP definition)	**1**
# Repetitive Loss Properties (FMA definition)	**0**
# Severe Repetitive Loss Properties (NFIP definition)	**0**
# Severe Repetitive Loss Properties (FMA definition)	**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: NJOEM 2024

13.4.2 Flood Vulnerability Summary

Table 13-10 provides a summary of the NFIP program in Ringwood.

Table 13-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Low lying properties and those downstream of culverts are prone to flooding.
Do you maintain a list of properties that have been damaged by flooding?	No
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
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?	Manager and Engineer
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
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)	Provide residents with mapping amendments
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	This is complete through Ordinance 27-103.14., with the Construction Official and Floodplain Administrator
What are the barriers to running an effective NFIP program in the community, if any?	Lack of Public Education
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	None
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	January 2023 with NJDEP
What is the local law number or municipal code of your flood damage prevention ordinance?	Ordinance 2023-02 Chapter 27 Ringwood Municipal Code

NFIP Topic	Comments
What is the date that your flood damage prevention ordinance was last amended?	April 18, 2023
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	The Borough meets the minimum requirements
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

13.5 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 13-11 through Table 13-13.

Table 13-11. 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
2020				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2021				
Total Permits	5	0	0	5
Permits within SFHA	0	0	0	0
2022				
Total Permits	5	0	0	5
Permits within SFHA	0	0	0	0
2023				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0

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

Table 13-12. Recent Major Development and Infrastructure from 2017 to Present

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

** Only location-specific hazard zones or vulnerabilities identified.*

Table 13-13. 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
None Identified					

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

13.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 13-1 through Figure 13-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Ringwood has significant exposure. The maps show the location of potential new development, where available.

Figure 13-1. Ringwood NEHRP Hazard Area Extent and Location Map

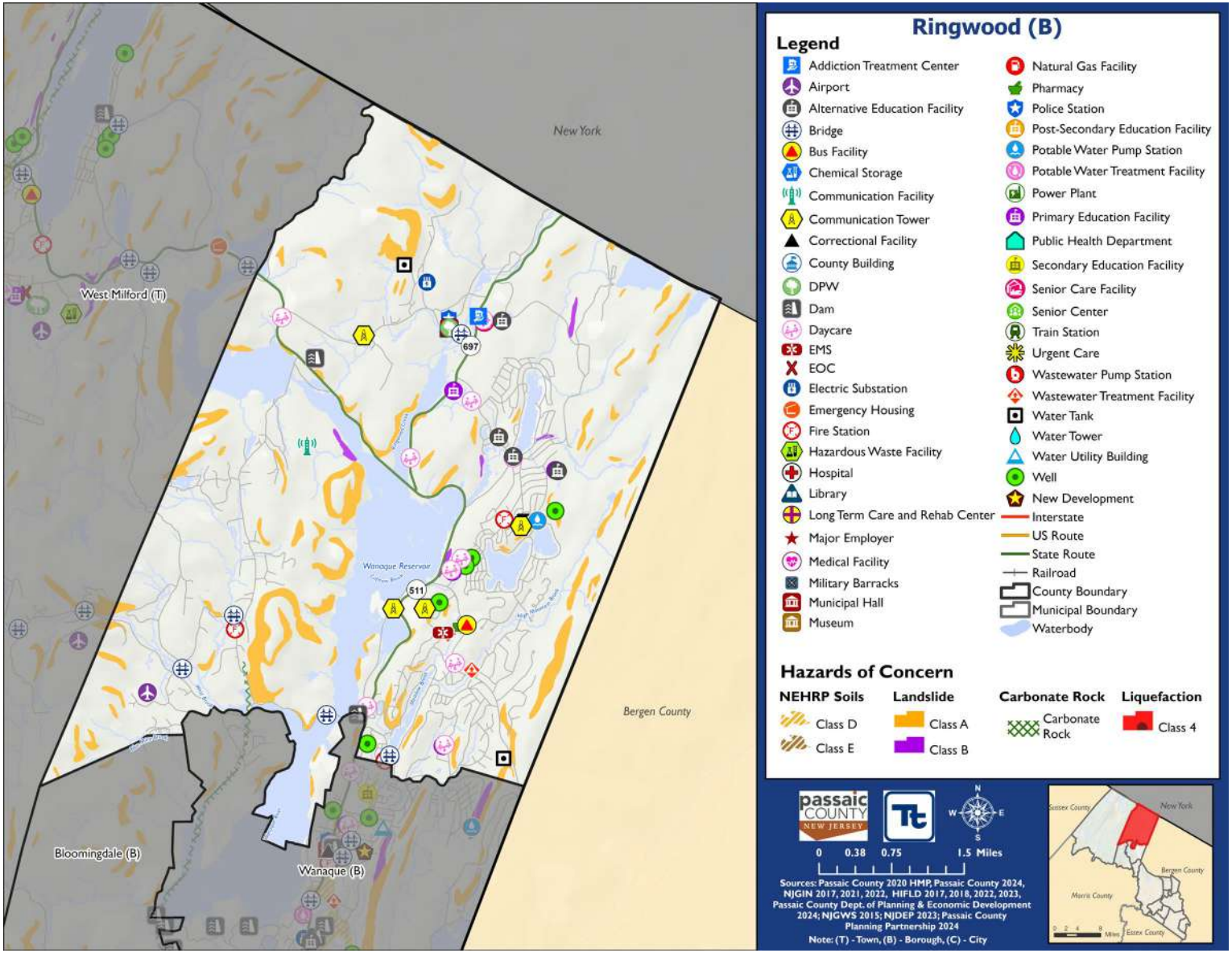
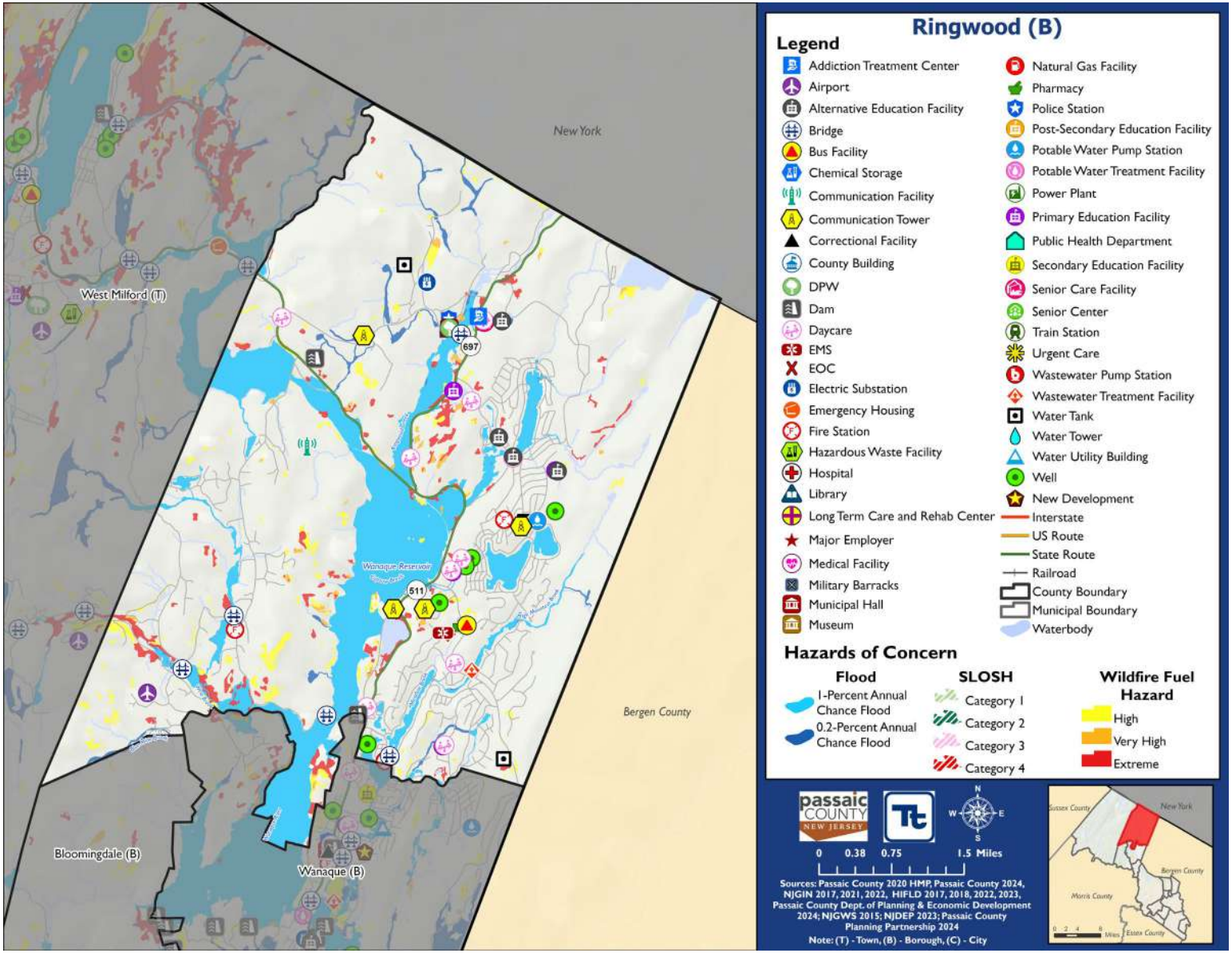


Figure 13-2. Ringwood Flood and Wildfire Hazard Area Extent and Location Map



13.6.2 Hazard Event History

The history of natural and non-natural hazard events in Ringwood is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 13-14 provides details on loss and damage in Ringwood during hazard events since the last hazard mitigation plan update.

Table 13-14. Hazard Event History in Ringwood

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Ringwood
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	The Borough conducted numerous area cleanups.
January 20, 2020-May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Borough had to pay $1,013,506 in overtime and staffing needs.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of the County; 4 water rescues occurred due to flash flooding.	The Borough incurred about $314,550 in damages and overtime.

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

13.6.3 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 Ringwood.

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. Ringwood 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 Borough indicated that it agreed with the preliminary hazard rankings.

Table 13-15 shows Ringwood's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 13-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Geological Hazards	Low
Extreme Temperature	Medium
Flood	Medium
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 13-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 13-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600404	Bridge	X	X
1600406	Bridge	X	X
1600491	Bridge	X	X
1600496	Bridge	X	X
James Drive Sewer Plant	Wastewater Treatment Facility	X	X
Pump Station	Well	-	X
Pump Station - Potable	Potable Water Pump Station	-	X
Water Buffering Tank	Water Tank	-	X
Well 7	Well	-	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

In addition to critical facilities that are exposed to flooding, the Borough of Ringwood contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

13.6.4 Identified Issues

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

- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has one repetitive loss properties, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are municipally owned and located in the special flood hazard area:
  - Highway Bridge: 1600404
  - Highway Bridge: 1600406
  - Highway Bridge: 1600491
  - Highway Bridge: 1600496
  - James Drive Sewer Plant
  - Pump Station
  - Pump Station - Potable
  - Water Buffering Tank
  - Well 7
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- 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.
- The Borough experiences flooding along roadways and is leading to bank erosion as well. The Borough does not have a list of problem roads/culverts to start making improvements with.
- The Borough does not have an official partnership with the Highlands for testing inflows into the lake as well as testing the phosphorus and nitrogen levels present in the lake.
- The Borough does not have a permanent redundant power source at the MJ Ryerson School/Shelter and the Peter Cooper School/Shelter and both of these facilities are necessary heating/cooling and emergency shelters for the Borough.
- The Borough Library consistently experiences flooding issues; however, it does not keep track of property owners that may be interested in mitigation or related technical assistance.
- The Borough suffers from drainage issues along the following roads:
  - High Mountain Road Phase 1 and 2
  - Skyline Lake Drive
  - Brookcyde Avenue
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams that have the potential to impact those living nearby.

13.7 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.

13.7.1 Past Mitigation Action Status

Table 13-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

13.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 13-17, Ringwood did not identify other mitigation efforts completed since the last HMP.

Table 13-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Ringwood-001	-		Borough Manager	Increase culvert capacity and raise banks and roadways.	1. No Progress 2. Roadway still floods and bank erosion occurs.	1.Include 2. Keep as is 3. N/A
2020-Ringwood-002	-		Borough Manager	Develop a public private partnership with the Highlands for all lakes, testing inflows into the lake and the lakes to determine phosphorus and nitrogen loading.	1.In Progress 2. Project has been delayed due to limited capacity and capability such as funding to complete project, scope is still being determine to determine load.	1.Include 2. Keep as is 3. N/A
2020-Ringwood-003	-		Planning Board	When updating the Master Plan, review and align with the Hazard Mitigation Plan to ensure future land use plan take into account high-hazard areas.	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete
2020-Ringwood-004	-		Emergency Manager	Install permanent generators at critical facility locations in the Borough, including MJ Ryerson School/Shelter and Peter Cooper School/shelter. Extend water system service to Peter Cooper, Erskine, Hewitt and MJ Ryerson schools which are designated shelters.	1.In Progress 2. Public water has been installed at some shelters. Generators are still needed at all facilities.	1.Include 2. Keep as is 3. N/A
2020-Ringwood-005	-		NFIP Floodplain Administrator	Flood proof utilities in Municipal Building/Police Department located on Margaret King Avenue	1. Complete 2.	1.Discontinue 2. N/A 3. This action is complete

Project Number	Project Name	Hazards 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.
2020-Ringwood-006	-		NFIP Floodplain Administrator	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone area that experience frequent flooding (high risk areas).	1.No Progress 2. Borough will continue to conduct outreach to flood-prone property owners; mitigation action has been impacted due to limited capacity and capability in the Borough.	1.Include 2. Keep as is 3. N/A
2020-Ringwood-007	-		Emergency Manager	Develop an internal tracking system to document sinkhole events and associated impacts. Work with property owners to identify appropriate mitigation actions.	1. In progress. 2. Project is currently in development in creating the internal system; limited capability/capacity has delayed this project	1. Include 2.Keep as is 3. N/A
2020-Ringwood-008	-		Emergency Manager	Conduct a feasibility study to identify mitigation alternatives to reduce flood impacts to the Library. Identify the most feasible action, apply for funding and implement the action.	1.No Progress 2. The Borough is currently evaluating funding opportunities and study scope of work for this feasibility study. Project is still in development.	1.Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Ringwood-009	-		Engineer	Increase the capacity of the drainage in the Borough including at the following locations identified in the capital plan for improvements: • Edgewood Road/Sylvan Lane Drainage • High Mountain Road/Seneca Drive Drainage, Phase 1 • High Mountain Road, Phase 2. • Skyline Lake Drive (near #81) • E. Brookcyde Avenue (near 108)	1.In Progress 2. Drainage is still needed at High Mountain Road Phase 1 and 2, Skyline Lake Drive, and Brookcyde Avenue. Edgewood Road drainage improvements have been recently installed.	1. Include 2. Keep as is 3. N/A

13.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Ringwood 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 Ringwood 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 Borough priorities.

Table 13-18 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 13-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 13-18. 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 and Levee Failure	X				X					X
Drought	X				X					X
Geological Hazards	X				X					X
Extreme Temperature	X				X					X
Flood	X	X	X	X	X	X	X	X	X	X
Severe Weather	X	X			X	X				X
Severe Winter Weather	X				X					X
Wildfire	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 13-19. 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**	
Action 2025-RingwoodB-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-RingwoodB-002.	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-RingwoodB-003	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-RingwoodB-004	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-RingwoodB-005	Repetitive Flooded Road Inventory	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-RingwoodB-006	Partnership with the Highlands	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14**	High
Action 2025-RingwoodB-007	Permeant Generators at Critical Facilities	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
Action 2025-RingwoodB-008	Library Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-RingwoodB-009	Drainage Improvements	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
Action 2025-RingwoodB-010	Dam Owner Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**13**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-RingwoodB-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Department of Building and Zoning
Hazard(s) of Concern:	Severe Storm, Flood
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 Borough has one repetitive loss properties, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 10 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1, 2, 3, 4, 5, 7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2025-RingwoodB-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers
Supporting Agencies:	Flood Advisory Board
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge: 1600404 • Highway Bridge: 1600406 • Highway Bridge: 1600491 • Highway Bridge: 1600496 • James Drive Sewer Plant • Pump Station • Pump Station - Potable • Water Buffering Tank • Well 7
Description of the Solution:	The Borough will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Borough will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	1,2,5
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Emergency Services, Property Protection
Priority	High

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

Action 2025-RingwoodB-003. Disaster Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-RingwoodB-004. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Mun
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025-RingwoodB-005. Repetitive Flooded Road Inventory

Lead Agency:	Public Works
Supporting Agencies:	Department of Building and Construction
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough experiences flooding along roadways and is leading to bank erosion as well. The Borough does not have a list of problem roads/culverts to start making improvements with.
Description of the Solution:	The Borough will conduct a flood study to determine what is causing flood issues along roadways and will document the problem areas that they wish to apply for funding for. The Borough will then upsize culvert capacity and determine what else needs to be done, including bank stabilization, to reduce and prevent flood events at each problem area.
Estimated Cost:	TBD
Potential Funding Sources:	HMGP, FMA, Municipal Budget
Implementation Timeline:	Within 5 Years; ongoing once established
Goals Met:	2,5
Benefits:	The Borough will have its problem areas documented and will work to improve conditions to reduce flood prone roadways.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be dependent on roadways that are blocked or damaged by flood events.
Impact on Future Development:	Future development can occur along areas that used to be problem areas.
Impact on Critical Facilities/Lifelines:	Critical facilities and lifelines may not have to be concerned with flooding in or around critical facilities and this may improve emergency vehicle access.
Impact on Capabilities:	This action would strengthen the Borough's ability to deal with flood.
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events.
Mitigation Category	Structure and Infrastructure Projects, Natural Systems Protection
CRS Category	Natural Resource Protection, Structural Flood Control Projects
Priority	High
Alternatives:	

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not solve issue
Upsize all culverts	Not necessary or cost effective

Action 2025-RingwoodB-006. Partnership with the Highlands

Lead Agency:	Highlands
Supporting Agencies:	Public Works, Borough Administration
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough does not have an official partnership with the Highlands for testing inflows into the lake as well as testing the phosphorus and nitrogen levels present in the lake.
Description of the Solution:	The Borough will work to develop a public or private partnership with the Highlands for all lakes, to test the inflows into the lake, as well as the phosphorus and nitrogen levels that may be present in the lake.
Estimated Cost:	Staff Time
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	8
Benefits:	This action would improve the Borough's knowledge of lake inflow and nutrient levels.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be more sensitive to nutrient levels that are present in and around lakes.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	This strengthens the Borough's ability to form partnerships.
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information, Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not solve issue
Upsize all culverts	Not necessary or cost effective

Action 2025-RingwoodB-007. Permeant Generators at Critical Facilities

Lead Agency:	Public Works
Supporting Agencies:	Department of Building and Zoning
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough does not have a permanent redundant power source at the MJ Ryerson School/Shelter and the Peter Cooper School/Shelter and both of these facilities are necessary heating/cooling and emergency shelters for the Borough.
Description of the Solution:	The Borough will conduct a generator study to determine the right sized generators that are needed at each facility, and will obtain funding to purchase and install the correct sized generators so that they may continue emergency operations as needed. Public Works will perform routine maintenance on the generators to ensure their longevity.
Estimated Cost:	TBD after Study
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:	1,5,6,7
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	Structure and Infrastructure Projects
CRS Category	Emergency Services
Priority	High

Alternatives:

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

Action 2025-RingwoodB-008. Library Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Library Owner
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough Library consistently experiences flooding issues.
Description of the Solution:	The Borough will conduct a feasibility study to identify mitigation alternatives to reduce flood impacts to the library and the Borough will then identify the most feasible action, apply for funding, and will implement the action.
Estimated Cost:	TBD after study
Potential Funding Sources:	HMGP, USDA Community Facilities Grant Program, Annual Budget
Implementation Timeline:	Within 5 Years
Goals Met:	4,5
Benefits:	The Library will be able to be used as an emergency shelter and will remain operable and in use.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be dependent on the Library for heating/cooling during extreme temperature or storm events.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow operations to adapt and resume in a more efficient manner.
Impact on Critical Facilities/Lifelines:	The library will remain in use and can potentially be used as another emergency shelter.
Impact on Capabilities:	Ensuring continuity of operations allows for a more rapid return to normalcy after a hazard event.
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Moveable flood barriers purchased	Does not prevent the issue
Improve drainage system	May not be related to drainage

Action 2025-RingwoodB-009. Drainage Improvements

Lead Agency:	Public Works
Supporting Agencies:	Department of Building and Zoning
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough suffers from drainage issues along the following roads: • High Mountain Road Phase 1 and 2 • Skyline Lake Drive • Brookcyde Avenue
Description of the Solution:	The Borough will increase the capacity of the drainage at the above locations that were identified in the Capital Plan for improvements.
Estimated Cost:	TBD based on needed improvements
Potential Funding Sources:	HMGP, FMA, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	2,5
Benefits:	The Borough will have reduced drainage issues.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations can be disproportionately impacted by roadways with flooding issues.
Impact on Future Development:	Future development may be encouraged after drainage issues make improvements.
Impact on Critical Facilities/Lifelines:	Critical facilities located along the roadways with drainage issues will experience reduced flooding.
Impact on Capabilities:	This action improves drainage in the Borough.
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Moveable flood barriers purchased	Does not prevent the issue
Elevate Roadways	Not cost effective

Action 2025-RingwoodB-010. Dam Owner Partnership

Lead Agency:	Public Works
Supporting Agencies:	Dam Owner and Managers
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams located in the Borough, including: the Sally's Pond Dam, Monksville Dam, Furnace Road Dam, Skyline Lake #2 (Upper) Dam, Skyline Lake #1 (Lower) Dam, Erskine Upper Lake Dam, and Cupsaw Lake Dam. These structures have the potential to impact those living nearby.
Description of the Solution:	The Borough will work with the owners and managers of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by the Borough OEM and shared with the County OEM.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,8,9
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:	N/A
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	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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

14. BOROUGH OF TOTOWA

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

14.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Totowa identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Emergency Management Coordinator represented the community on the Passaic 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 14-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 14-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Detective/Sergeant Gary Bierach, Office of Emergency Management Coordinator Address: 537 Totowa Road, Totowa, NJ 07512 Phone Number: (973) 953-3450 Email: gbierach@totowapd.org	Name/Title: Richard Schopperth, Office of Emergency Management Deputy Coordinator Address: 537 Totowa Road, Totowa, NJ 07512 Phone Number: (973) 650-2347 Email: rschopperth@totowanj.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Mike Cristaldi, Borough Engineer Address: 537 Totowa Road, Totowa, NJ 07512 Phone Number: (973) 523-6200 Email: mcristaldi@alaimogroup.com	
Additional Contributors	
Name/Title: Allan Burghardt, Floodplain Manager Method of Participation: Provided key input in the planning process by completing worksheets.	
Name/Title: Detective Gary Bierach, Office of Emergency Management Coordinator Method of Participation: Provided key input in the planning process by completing worksheets.	

14.2 COMMUNITY PROFILE

14.2.1 Brief History

The Borough was first settled around 1750 and was officially incorporated in 1898, formed from portions of the Townships of Manchester and Wayne. The name "Totowa" derives from a Native American term used by indigenous

inhabitants; various translations interpret the term to mean “where you begin,” “between mountains and waters,” or “to sink beneath the waters” (Zimmer 2018).

14.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 4.065 square miles, of which 3.994 square miles is land and 0.071 square miles is water. The Borough is in southeastern Passaic County. It is bordered to the north and west by Wayne, to the south by Little Falls, and to the east by Paterson and Woodland Park.

14.2.3 Governing Body Format

The Borough is governed by a mayor and six-person council. The Borough also has a Municipal Cleark that serves as a liaison officer between the governing body, taxpayers and residents, and the general body of municipal personnel.

14.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Totowa was 11,065, a 2.4 percent increase 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 2022 American Community Survey indicates that 3.7 percent of the population is 5 years of age or younger, 19.4 percent is 65 years of age or older, 3.1 percent is non-English speaking, 3.8 percent is below the poverty threshold, and 11.9 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – cannot afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household income compared to the state average of $89,296 and is on par with the state average of 66 percent for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

14.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Totowa performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describe 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 Totowa to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

14.3.1 Planning and Regulatory Capability and Integration

Table 14-2 summarizes the planning and regulatory tools that are available to Totowa.

Table 14-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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 153 – Uniform Construction Codes	State and Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? There is hereby established in the Borough of Totowa a State Uniform Construction Code enforcing agency to be known as the "Building Department of the Borough of Totowa." Said agency shall consist of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. Said agency shall further consist of an Assistant Building Subcode Official. The Construction Official shall be the chief administrator of the enforcing agency.				
Zoning/Land Use Code	Yes	Chapter 415 – Zoning and Land Use	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter shall be to provide rules, regulations and standards to guide land development in the Borough of Totowa in order to promote the public health, safety and general welfare of the municipality. The Borough might require conservation easements along drainage and stormwater rights-of-way. This type of easement must contain provisions to restrict the removal of trees and ground cover except for the following purposes: removal of dead or diseased trees; thinning of trees and other growth to encourage a more desirable growth; removal of trees to allow for structures designed to impound water; removal of trees in areas to be flooded for the creation of ponds or lakes; and to prohibit filling or grading of the lands or the disposal of refuse or waste material of any type within the limits of the easement. The Zoning and Land Use Code prevent detention basins in the floodway and requires that all development in the floodplain be in compliance with N.J.S.A. 58:16A-50 et seq. Lastly, the Borough has the zoning map posted online; however, it does not show hazards areas (e.g., floodplains). During the next update of this map, the Borough should incorporate hazard areas (e.g., floodplain, steep slope).				

	Jurisdiction has this?	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
Subdivision Code	Yes	Chapter 415 – Zoning and Land Use	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Prior to subdividing or re-subdividing land in the Borough, the Borough requires an application be filed which needs to be approved by the Planning Board.				
Site Plan Code	Yes	Chapter 415 – Zoning and Land Use	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Prior to the subdivision or re-subdivision of land and prior to the issuance of a building permit or certificate of occupancy for any development for which site plan approval is required, an application for subdivision or site plan, as the case may be, shall be submitted to and approved by the Planning Board in accordance with the requirements of this chapter.				
Stormwater Management Code	Yes	Chapter 349 - Storm Sewers, 2010; Chapter 352 - Stormwater Control, 2007; Chapter 320 – Sewers, 2008	Local	Borough Engineer
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 349 - Storm Sewers – last amended on 7/27/2010 – prohibits illicit connections and improper disposal of waste. • Chapter 352 - Stormwater Control - adopted by the mayor and council on 10/9/2007 – the purpose of this chapter is to establish minimum stormwater management requirements and controls for major development. It states that flood control, groundwater recharge, and pollutant reduction through non-structural or low-impact techniques should be looked at first before structural BMPs. The Borough assures that all new residential development and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management are in compliance with those standards. • Chapter 320 – Sewers – last amended on 4/8/2008 - It shall be unlawful for any person, firm, company, association, society, corporation or group to place, deposit or permit to be deposited in an unsanitary manner, upon public or private property within the Borough of Totowa, or in any area under the jurisdiction of said Borough of Totowa, any human or animal excrement, garbage, industrial wastes or other objectionable waste. It shall be unlawful to discharge any sewage or waste materials into any natural outlet or watercourse within the Borough of Totowa.			
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 279 – Parks and Recreation Areas, 1994 Chapter 383 – Trees, 2009	Local	OEM Coordinator/ Fire Chief
How has or will this be integrated with the HMP and how does this reduce risk? • Chapter 279 - Parks and Recreation Areas – adopted 11/15/1994 – provides regulations for the control of public parks, playgrounds, and pools in the Borough. • Chapter 383 – Trees – adopted by the Borough on 3/22/2005 – controls and regulates indiscriminate and excessive removal, cutting and destruction of trees and to control, regulate and prevent conditions which cause increased surface drainage, sedimentation and soil erosion, cause decreased soil fertility and impair the stability and value of real estate, all of which conditions are and will in the future be a deterrent to public safety, health and welfare.				
Flood Damage Prevention Ordinance	Yes	Chapter 189 – Flood Damage Prevention, 2007	Local	Construction Code Official
How has or will this be integrated with the HMP and how does this reduce risk? It is then intent of this chapter 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. To protect human life and health; B. To minimize the expenditure of public money for costly flood projects; C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; D. To minimize prolonged business interruptions; E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard; F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; G. To ensure that potential buyers are notified that property is in an area of special flood hazard; and H. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. The ordinance is not the model code coordinated ordinance and will require update.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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	Borough of Totowa Master Plan Reexamination, 2016	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The 2016 Master Plan Re-Examination and Amendment, adopted by the Planning Board on April 14, 2016, conforms to the requirements of the Municipal Land Use Law and addresses the requirements of N.J.S.A. 40:55D-89. The plan discussed areas of flooding; however, the plan does not reference the current HMP or other hazard areas of concern. During the next re-examination or update of the master plan, the Borough should consider incorporating the Passaic County HMP. By doing so, it promotes consistency within and between the plans and promotes mitigation as a policy priority across multiple elements.				
Capital Improvement Plan	Yes	Borough of Totowa Master Plan Reexamination, 2016	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? 2016 Master Plan Re-Examination and Amendment; adopted by the Planning Board on April 14, 2016. This reexamination of the Borough of Totowa Master Plan conforms to the requirements of the Municipal Land Use Law and addresses the requirements of N.J.S.A. 40:55D-89. The plan discussed areas of flooding; however, the plan does not reference the current HMP or other hazard areas of concern. During the next re-examination or update of the master plan, the Borough should consider incorporating the Passaic County HMP. By doing so, it promotes consistency within and between the plans and promotes mitigation as a policy priority across multiple elements.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	Yes	Stormwater Management Plan, 2006	Local	Engineering
How has or will this be integrated with the HMP and how does this reduce risk? 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. Several goals of the plan relate to reducing flood damage and protecting life and property, which coincide with the County HMP's goals. A chapter of the plan is dedicated to flood damage control and provides suggestions for incorporating flood damage reduction.				
Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan (SWPPP)	Local	Engineering
How has or will this be integrated with the HMP and how does this reduce risk? Outlines procedures for controlling stormwater and the pollution thereof for new and current development projects within the Borough.				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Borough of Totowa Emergency Operations Plan	Local	OEM
The EOP provides an outline of preparedness, response, and clean up before, during, and after an event among the various departments within the plan.				

	Jurisdiction has this?	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
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	Yes	Health Community Planning Report, 2022	County and Local	Health Department
How has or will this be integrated with the HMP and how does this reduce risk? Provides individual, municipal-level reports that offer a snapshot of a municipality's health and environmental data to help promote a healthy and safe environment.				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

14.3.2 Development and Permitting Capability

Table 14-3 summarizes the capabilities of Totowa to oversee and track development.

Table 14-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 N/A	- Building Department
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Floodplain is tracked
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	No N/A	- -
Describe the level of buildout in your jurisdiction.	N/A	Very little land available

14.3.3 Administrative and Technical Capability

Table 14-4 summarizes potential staff and personnel resources available to Totowa and their current responsibilities that contribute to hazard mitigation.

Table 14-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		

Planning Board	Yes	The Planning Board has the authority to:
		• Prepare, adopt and, from time to time, amend or revise a Master Plan.
		• Exercise control over the review of subdivisions and site plans in accordance with Part 3, Subdivision and Site Plan Review, of this chapter.
		• Exercise control over the granting of applications for conditional uses.
		• Whenever the proposed development requires approval of a subdivision, site plan or conditional use (but not a variance pursuant to N.J.S.A. 40:55D-70d), grant to the same extent and subject to the same restrictions as the Board of Adjustment:
		  ○ Variances pursuant to N.J.S.A. 40:55D-70c.
		  ○ Direction pursuant to N.J.S.A. 40:55D-34 for issuance of a permit for a building or structure in the bed of a mapped street or public drainageway, flood control basin or public area reserved on an Official Map.
		  ○ Direction pursuant to N.J.S.A. 40:55D-36 for issuance of a permit for a building or structure not related to a street.
		• Exercise such other duties as may be assigned to it by ordinance or resolution of the governing body and perform such other functions as may be authorized by N.J.S.A. 40:55D-1 et seq. and other state statutes and administrative regulations.

Zoning Board of Adjustment	No	-
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Shade Tree Commission
Open Space Board/Committee	Yes	Planning Board
Economic Development Commission/Committee	Yes	Planning Board
Public Works/Highway Department	Yes	The primary function of the Department of Public Works (DPW) is the maintenance of all township roadways, traffic signs and signals, and right of ways. DPW also handles the repair and maintenance of police cars, fire trucks, and administrative vehicles, including all Department of Public Works trucks and heavy equipment. Ground maintenance

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		of municipal property, recreation fields and firehouses, along with snow removal, is also included.
Construction/Building/Code Enforcement Department	Yes	Building Department
Emergency Management/Public Safety Department	Yes	Office of Emergency Management. OEM oversees the Community Emergency Response Team (CERT) Program, which educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Administrator, Municipal Clerk; Joint Insurance Fund Safety Officer
Mutual aid agreements	Yes	OEM Director: Mutual aid agreements include storm water management maintenance ordinance
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	Yes	The Borough has a Flood Board made up of the mayor, council, residents, and DPW.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Official
Planners or engineers with an understanding of natural hazards	Yes	Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Administrator, Municipal Clerk
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	Yes	Welfare Officer
Environmental scientists familiar with natural hazards	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Surveyors	Yes	Engineer
Emergency manager	Yes	OEM Director and Contractor
Grant writers	Yes	OEM Director/Millennial Strategies
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

14.3.4 Fiscal Capability

Table 14-5 summarizes financial resources available to Totowa.

Table 14-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes – CDBG-DR used to acquire five homes (approximately $1.3 billion)
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	Yes
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

14.3.5 Education and Outreach Capability

Table 14-6 summarizes the education and outreach resources available to Totowa.

Table 14-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Mayor
Personnel skilled or trained in website development	No	N/A
Hazard mitigation information available on your website	Yes	The Borough has a link to view the Passaic River flood levels. The Borough's website also has news and events posted

Outreach Resources	Available?	Comment
Social media for hazard mitigation education and outreach	No	-
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Flood Board (municipal and resident board) and CERT. • The CERT Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community. • P.V. Regional Flood Control Board - the Board is charged with the overall management of the surface water of the Passaic River and the Peckman River Basins. To do so, its members review potential acquisition, construction, financing, improvement, maintenance and operation of flood control facilities and make recommendations to the governing bodies of Little Falls Woodland Park and Totowa, along with other officials.
Warning systems for hazard events	Yes	CodeRED and Register Ready – CodeRED allows residents and businesses of the Borough to add/update their contact information to ensure they are included when a message is sent by the Borough in the event of emergency situations or critical community alerts. Register Ready is New Jersey's special needs registry and allows residents with disabilities or access and functional needs and their families to provide information to emergency response agencies so emergency responders can better plan to serve them in a disaster or other emergency.
Natural disaster/safety programs in place for schools	Yes	Superintendent
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	Welfare Officer
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Tax Bills and Water Bills

14.3.6 Community Classifications

Table 14-7 summarizes classifications for community programs available to Totowa.

Table 14-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	2013
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	4	2013
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	No classification	N/A
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

14.3.7 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 14-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough'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 14-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological Hazards	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

14.4 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 14-1 is responsible for maintaining this information.

14.4.1 NFIP Statistics

Table 14-9 summarizes the NFIP policy and claim statistics for Totowa.

Table 14-9. Totowa NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	**261**
Total Loss Payments	**$6,026,201**
# Repetitive Loss Properties (NFIP definition)	**40**
# Repetitive Loss Properties (FMA definition)	**1**
# Severe Repetitive Loss Properties (NFIP definition)	**9**
# Severe Repetitive Loss Properties (FMA definition)	**9**

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 2024

14.4.2 Flood Vulnerability Summary

Table 14-10 provides a summary of the NFIP program in Totowa.

Table 14-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Jackson Ave, West End Rd, Maltese Dr, Elizabeth Pl, Lincoln Ave, Boyle Ave, Willard Ave, Riverview Dr, Scrivens St, Lewis Pl, Charles St, William St, Vita Rd, Winifred Dr, and Vreeland Ave
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	None at this time
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	As per FEMA requirements
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown

NFIP Topic	Comments
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	Five removed with Borough Funds
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
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)	No
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	All of the above
What are the barriers to running an effective NFIP program in the community, if any?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	Public Resistance
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 189
What is the date that your flood damage prevention ordinance was last amended?	February 25, 2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Does not meet but will once Code Coordinated Ordinance is adopted
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?	PB, BOA, Engineering
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

14.5 GROWTH/DEVELOPMENT TRENDS

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction's overall risk to its hazards of concern. Recent and expected future development trends, including major residential/commercial development and major infrastructure development, are summarized in Table 14-11 through Table 14-13.

Table 14-11. 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
2020				
Total Permits	2	0	4	6
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	1	1	3
Permits within SFHA	0	0	0	0
2022				
Total Permits	5	2	4	11
Permits within SFHA	0	0	0	0
2023				
Total Permits	2	0	2	4
Permits within SFHA	0	0	0	0

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

Table 14-12. Recent Major Development and Infrastructure from 2017 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
100 Shepherds Lane	Multifamily Units	173	100 Shepherds Lane	None	Developed in 2020
329 Totowa Road	Multifamily Units	28	329 Totowa Road	NEHRP D and E Soils	Developed in 2021
95 Shepherds Lane	Multifamily Units	76	95 Shepherds Lane	None	Developed in 2022
515 Union Boulevard	Multifamily Units	28	515 Union Boulevard	None	Developed in 2023
701 Union Boulevard- Data Center	Commercial	1	701 Union Boulevard	None	Developed in 2020
1000 Cloud Drive- Data Center	Commercial	1	1000 Cloud Drive	None	Developed in 2020
205 Minnisink Road- Medical Office	Commercial	1	205 Minnisink Road	None	Developed in 2021
809 Riverview Drive- Starbucks/Quick Check	Commercial	1	809 Riverview Drive	None	Developed in 2022
504-506 Union Boulevard- Mix use	Commercial	3	504-506 Union Boulevard	None	Developed in 2022
471 Totowa Road- Mix Use	Commercial	1	471 Totowa Road	None	Developed in 2023

** Only location-specific hazard zones or vulnerabilities identified.*

Table 14-13. Known or Anticipated Major Development and Infrastructure in the Next Five Years

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

14.6 JURISDICTIONAL RISK ASSESSMENT

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

14.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 14-1 through Figure 14-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Totowa has significant exposure. The maps show the location of potential new development, where available.

Figure 14-1. Totowa NEHRP Hazard Area Extent and Location Map

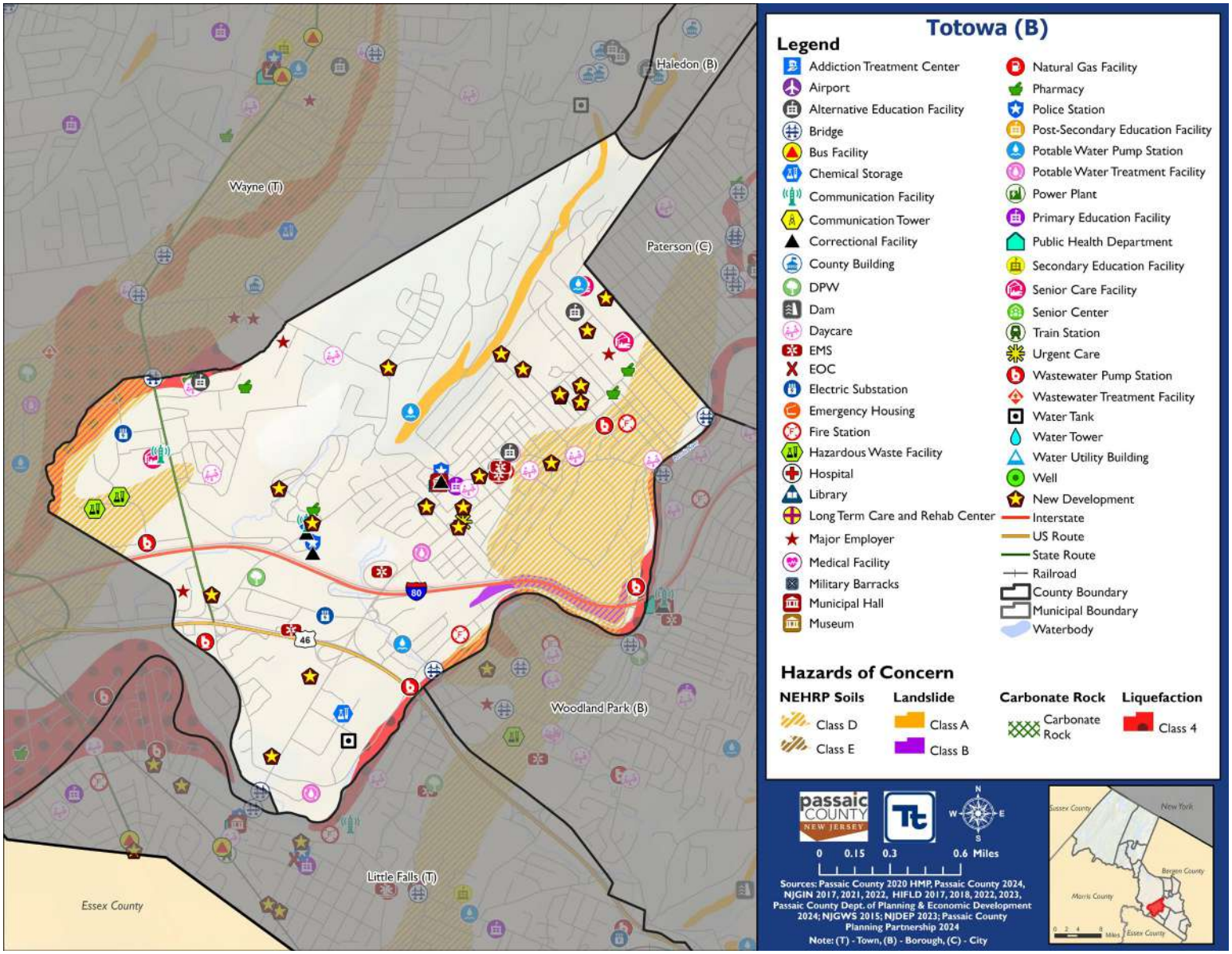
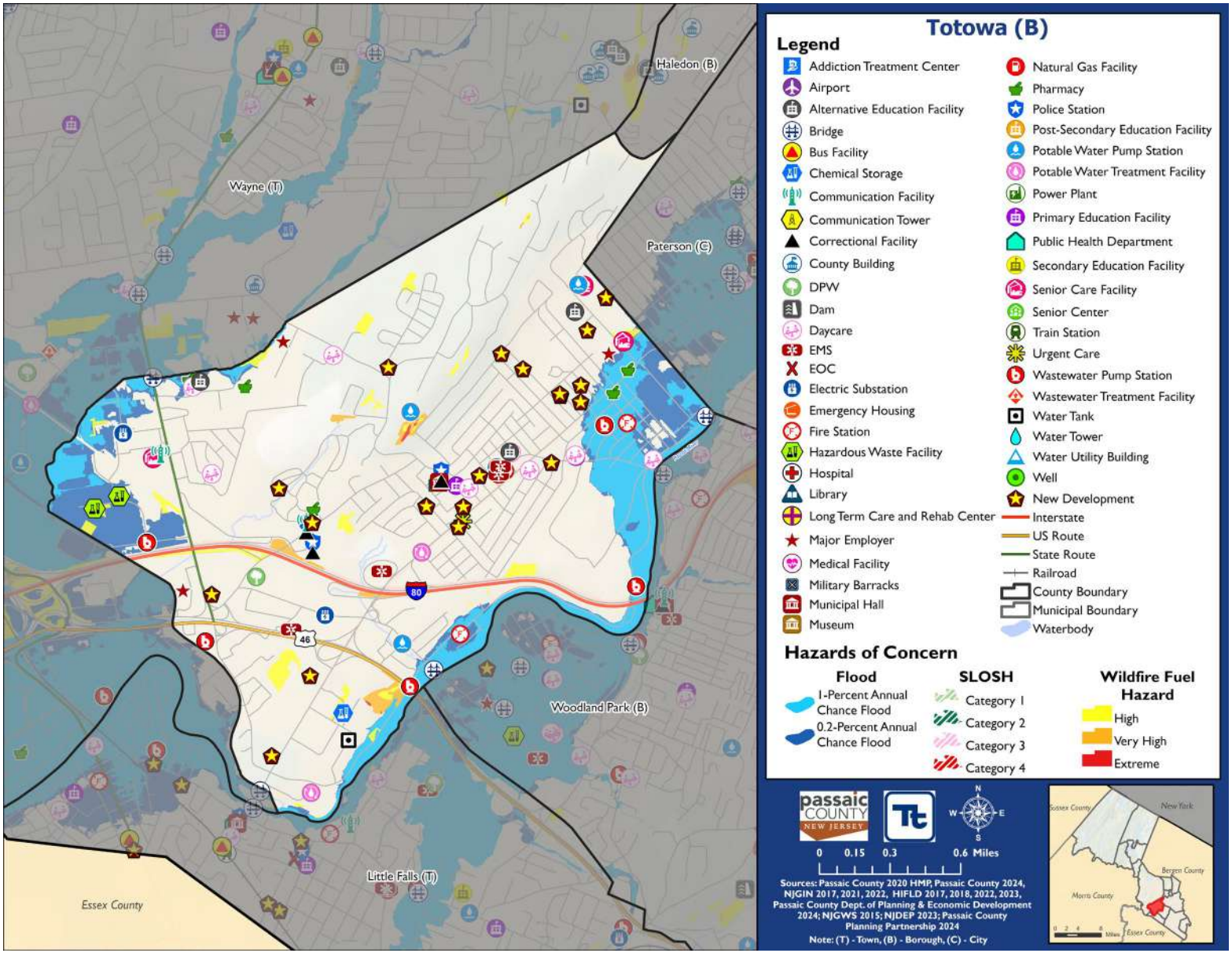


Figure 14-2. Totowa Flood and Wildfire Hazard Area Extent and Location Map



14.6.2 Hazard Event History

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

Table 14-14. Hazard Event History in Totowa

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Totowa
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Localized flooding on roads with no homes. No resident was affected by this event other than temporary road closures.
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Town followed Nationally mandated social distancing and closure of public areas. This impacted the community and economy of the Town. Impacts were also seen to the critical facilities, such as first responding agencies and hospitals due to the spread of the virus.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	Numerous homes were flooded out due to this event. Some homes in areas that have never been flooded before. Cost the town money on the cleanup and overtime to municipal employees.

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

14.6.3 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 the Borough of Totowa.

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. Totowa 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 Borough indicated the following:

- The Borough updated the ranking for Geological from Low to Medium based on the presence of high landslide susceptibility areas and carbonate rock in the jurisdiction.
- The Borough updated the ranking for Flood from Medium to High due to multiple past hazard events and significant damage in the jurisdiction.
- The Borough updated the ranking for Severe Weather from Medium to High based on prior hazard events and experienced impacts.

Table 14-15 shows Totowa's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 14-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Drought	Medium
Geological Hazards	Medium
Extreme Temperature	Medium
Flood	High
Severe Weather	High
Severe Winter Weather	Medium
Wildfire	Low

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 14-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

There are no high hazard potential damages located in the Borough of Totowa.

Table 14-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600020	Bridge	X	X
1600021	Bridge	X	X
1600321	Bridge	X	X
Borough of Totowa FD - River Park Com 3	Fire Station	-	X
Borough of Totowa FD -Lincoln Fire Com 2	Fire Station	X	X
Covanta Sustainable Solutions	Hazardous Waste Facility	-	X
DUANE READE	Pharmacy	-	X
FYC Recycling, LLC	Hazardous Waste Facility	-	X
LITTLE DREAMERS EARLY LEARNING CENTER	Daycare	X	X
PATTERSON ARMY HEALTH CLINIC-DOD	Pharmacy	X	X
PSE&G Substation	Electric Substation	-	X
SWEET PEAS LEARNING CENTER	Daycare	-	X
Totowa Wastewater Pump Station	Wastewater Pump Station	X	X
Totowa Wastewater Pump Station	Wastewater Pump Station	X	X
Totowa Wastewater Pump Station	Wastewater Pump Station	-	X
Totowa Wastewater Pump Station	Wastewater Pump Station	-	X
Totowa Wastewater Pump Station	Wastewater Pump Station	X	X
WALGREENS – 10751	Pharmacy	X	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

14.6.4 Identified Issues

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

- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 49 repetitive loss properties, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are municipally owned and located in the special flood hazard area:
  - Highway Bridge: 1600020
  - Highway Bridge: 1600021
  - Highway Bridge: 1600321
  - Borough of Totowa FD - River Park Com 3
  - Borough of Totowa FD -Lincoln Fire Com 2
  - Covanta Sustainable Solutions
  - DUANE READE
  - FYC Recycling, LLC

- LITTLE DREAMERS EARLY LEARNING CENTER
- PATTERSON ARMY HEALTH CLINIC-DOD
- PSE&G Substation
- SWEET PEAS LEARNING CENTER
- Totowa Wastewater Pump Station
- Totowa Wastewater Pump Station
- Totowa Wastewater Pump Station
- Totowa Wastewater Pump Station
- Totowa Wastewater Pump Station
- WALGREENS – 10751

- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- 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.
- The lower Borough area suffers from flood risks and damages. The Borough has begun the planning stages of conducting feasibility assessments and has corrected storm drains that have had check valves installed.
- The Fire Department experiences flooding issues and has started to undergo feasibility studies to determine the most feasible and cost-beneficial flood mitigation techniques in relation to the department.
- The Borough's flood damage prevention ordinance does not comply with NJDEP's Code Coordinated Ordinance. The jurisdiction will need to adopt the updated ordinance to remain in compliance with the NFIP.

14.7 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.

14.7.1 Past Mitigation Action Status

Table 14-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

14.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 14-17, the Borough of Totowa did not identify other mitigation efforts completed since the last HMP.

Table 14-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Totowa-001			Borough Engineer	Conduct a feasibility study of the entire Lower Borough area to determine how to reduce flood risk in the Lower Borough area. The study will include an investigation and evaluate solutions to help reduce or alleviate flood damage in this area.	1.In Progress 2. The project is in the planning stage. Previous black flow issues from storm drains that have been corrected by adding check valves.	1. Include 2. Keep as is 3. N/A
2020-Totowa-002			Borough Administration	Update the current flood damage prevention ordinance to require new construction and substantial improvements to be elevated at least one foot above the base flood elevation.	1.Complete 2.	1.Discontinue 2.N/A 3. This action is complete

Project Number	Project Name	Hazards 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.
2020-Totowa-003			Borough Engineer	Working with the Borough engineer, identify the best size generator for each building. Once identified, purchase and install the generator and proper equipment.	1.Complete 2.	1.Discontinue 2.N/A 3. This action is complete
2020-Totowa-004			Borough Engineer	Conduct a feasibility study to determine the most feasible and cost-beneficial flood mitigation for the fire department.	1.In Progress 2. The project is in the planning stages.	1. Include 2. Keep as is 3. N/A
2020-Totowa-005			Borough Administrator	The Borough will work with FEMA to submit a CRS application and provide the required paperwork that is needed.	1.In Progress 2. Budgeting has been an ongoing issue.	1. Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Totowa-006			Floodplain Administrator	Conduct outreach to inform the residents with options to reduce or eliminate flood damage. The outreach will include information on what the homeowner can do now (elevate utilities, remove items from the basement, etc.) and mitigation options (acquisition or elevation). If the homeowner chooses acquisition or elevation, the Borough will apply for FEMA funding on their behalf.	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete

14.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Totowa 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 Totowa 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 Borough priorities.

Table 14-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

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

Table 14-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	X				X					X
Drought	X				X					X
Geological Hazards	X				X					X
Extreme Temperature	X				X					X
Flood	X	X			X	X		X		X
Severe Weather	X	X			X	X		X		X
Severe Winter Weather	X	X			X	X		X		X
Wildfire	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 14-19. 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**	
Action 2025-TotowaB-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-TotowaB-002	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-TotowaB-003	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-TotowaB-004	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-TotowaB-005	Borough Feasibility Study	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
Action 2025-TotowaB-006	Fire Department Flood Mitigation	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
Action 2025-TotowaB-007	Join CRS	1	1	1	1	1	0	1	1	0	1	1	0	1	0	**10**	Medium

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-TotowaB-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Department of Building
Hazard(s) of Concern:	Severe Storm, Flood
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 Borough has 49 repetitive loss properties, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 80 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

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

Action 2025-TotowaB-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers
Supporting Agencies:	Department of Building
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge: 1600020 • Highway Bridge: 1600021 • Highway Bridge: 1600321 • Borough of Totowa FD - River Park Com 3 • Borough of Totowa FD -Lincoln Fire Com 2 • Covanta Sustainable Solutions • DUANE READE • FYC Recycling, LLC • LITTLE DREAMERS EARLY LEARNING CENTER • PATTERSON ARMY HEALTH CLINIC-DOD • PSE&G Substation • SWEET PEAS LEARNING CENTER • Totowa Wastewater Pump Station • Totowa Wastewater Pump Station • Totowa Wastewater Pump Station • Totowa Wastewater Pump Station • Totowa Wastewater Pump Station • WALGREENS - 10751
Description of the Solution:	The Borough will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Borough will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Town Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	2,5
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.

Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Emergency Services, Property Protection	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2025-TotowaB-003. Disaster Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-TotowaB -004. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam and Levee Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025-TotowaB -005. Borough Feasibility Study

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Building Department
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	The lower Borough area suffers from flood risks and damages. The Borough has begun the planning stages of conducting feasibility assessments and has corrected storm drains that have had check valves installed.
Description of the Solution:	The Borough will continue to prioritize flooding issues and will continue to investigate and evaluate solutions to help reduce or alleviate flood damage in the area. The Borough will also continue to acquire funding to support the results of the feasibility assessments.
Estimated Cost:	TBD based on solutions
Potential Funding Sources:	HMGP, FMA, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	4,5
Benefits:	This action benefits the Borough by reducing the flooding that occurs in the municipality.
Impact on Socially Vulnerable Populations:	This action benefits the Borough by reducing the flooding that occurs in the municipality.
Impact on Future Development:	Reduced flooding in areas may promote additional future development.
Impact on Critical Facilities/Lifelines:	Critical facilities will not be as impacted by flood events as they previously have been in the past.
Impact on Capabilities:	This action increases the Borough capabilities to handle flood events resulting from excessive precipitation events.
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	Structure and Infrastructure Project
CRS Category	Natural Resource Protection, Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Not cost effective
Redo Drainage system	Not cost effective

Action 2025-TotowaB-006. Fire Department Flood Mitigation

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Building Department
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	The Fire Department experiences flooding issues and has started to undergo feasibility studies to determine the most feasible and cost-beneficial flood mitigation techniques in relation to the department.
Description of the Solution:	The Borough will continue to prioritize flooding issues and will continue to investigate and evaluate solutions to help reduce or alleviate flood damage to the Fire Department. The Borough will also acquire funding to support the results of the feasibility assessments.
Estimated Cost:	TBD based on solutions
Potential Funding Sources:	HMGP, FMA, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	2,4,5,6
Benefits:	This action benefits the Borough by reducing the flooding that occurs to the Fire Department.
Impact on Socially Vulnerable Populations:	This action benefits the Borough by reducing the flooding that occurs to the Fire Department.
Impact on Future Development:	Reduced flooding in areas may promote additional future development.
Impact on Critical Facilities/Lifelines:	The Fire Department is a critical facility that will experienced reduced flooding issues.
Impact on Capabilities:	This action increases the Borough capabilities to handle flood events resulting from excessive precipitation events.
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Natural Resource Protection, Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Not cost effective
Redo Drainage system	Not cost effective

Action 2025-TotowaB-007. Join CRS

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Planning, OEM
Hazard(s) of Concern:	Flood
Description of the Problem:	Although the Borough has flood exposure, the Borough does not participate in the Community Rating System (CRS) program. Flood insurance premiums continue to rise.
Description of the Solution:	The Borough will evaluate the benefits and costs of participating in CRS program. If feasible, the Borough will join the program and begin implementing standards that exceed NFIP requirements.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	2 years
Goals Met:	1,2,4,5
Benefits:	The participation in the CRS benefits communities by offering discounted rates for flood insurance premiums, which addresses the three goals of the program: reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the National Flood Insurance Program, and foster comprehensive floodplain management.
Impact on Socially Vulnerable Populations:	The participation in the Community Rating System (CRS) benefits communities by offering discounted rates for flood insurance premiums, which may be more affordable for some socially vulnerable populations.
Impact on Future Development:	Future development would need to adhere to any increased standards established as part of joining the CRS program such as increased freeboard and elevation certificate requirements.
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	This action would enhance the Borough's floodplain management 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. As sea level rises due to climate change, the area of the flood hazard may expand. These changes are likely to increase flood risks.
Mitigation Category	Education and Awareness Programs
CRS Category	Public Information
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Adopt aspects of the CRS program into the floodplain management program	Increased floodplain management capabilities but no reduction in flood insurance premiums
Abandon any floodplain management practices not required by NFIP	Reduction in floodplain management capabilities and increase in risk.

Action 2025-TotowaB-008. Flood Barriers

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Planning, OEM
Hazard(s) of Concern:	Flood
Description of the Problem:	Riverview Drive between Lackawanna Avenue and Union Boulevard floods during high precipitation events. People drive down this road when it is flooded, which leads to increased calls to emergency services.
Description of the Solution:	The Borough will install gates that can be closed to prevent people from driving down this road when it is flooded. The Borough will have signs to re-direct people to a nearby road that does not flood.
Estimated Cost:	Medium
Potential Funding Sources:	HMGP, FMA
Implementation Timeline:	Within 5 years
Goals Met:	1,2,7
Benefits:	The Borough will have fewer flood related issues with that road.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	Alternate routes will be identified to access any critical facilities. No businesses and critical facilities are located along the portion of the road that would be blocked off.
Impact on Capabilities:	This action increases emergency services capabilities during flood events because it eliminated the calls the Borough would receive about Riverview Drive.
Climate Change Considerations:	Climate change is likely to increase the intensity and frequency of many climate related disaster events, including rain and flood events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Relocate all flood-prone road system	Not feasible
Raise all flood prone roads	Cost prohibitive

15. BOROUGH OF WANAQUE

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

15.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Wanaque identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The Office of Emergency Management Coordinator represented the community on the Passaic 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 15-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 15-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Thomas Carroll, Office of Emergency Management Coordinator Address: 579 Ringwood Ave, Wanaque, NJ 07465 Phone Number: (973) 865-4408 Email: oem@wanaqueborough.com	Name/Title: Daniel Mahler, Mayor Address: Address: 579 Ringwood Ave, Wanaque, NJ 07465 Phone Number: (973) 838-0904 Email: mayor@wanaqueborough.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Mike Cristaldi, Borough Engineer Address: Address: 579 Ringwood Ave, Wanaque, NJ 07465 Phone Number: (973) 523-6200 Email: mcristaldi@alaimogroup.com	
Additional Contributors	
Name/Title: Thomas Carroll, Office of Emergency Management Coordinator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Paul M. Carelli, Previous Administrator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Jennifer Fiorito, Construction Secretary Method of Participation: Provided key input in the planning process by completing worksheets	

15.2 COMMUNITY PROFILE

15.2.1 Brief History

The Borough of Wanaque was incorporated as an independent municipality when Pompton Township was divided into the Boroughs of Bloomingdale, Wanaque and Ringwood in 1918 (Borough of Wanaque n.d.). The name “Wanaque” is derived from a Lenni Lenape term for “land of sassafras” or “rest and repose” (Borough of Wanaque n.d.).

15.2.2 Location

The Borough has a total land area of 9. 3 square miles, of which 8 square miles is land and 1. 3 square miles is water. It is located in the Highlands Region with portions both in the Planning and Preservation Areas. Additionally, Wanaque is home to the Wanaque Reservoir which provides potable water to over 2 million residents in Northern New Jersey.

15.2.3 Governing Body Format

The Borough elects a Mayor and is represented by a six-person council. A Council president is established annually to facilitate Council meetings and activities, and the Council establishes multiple committees and liaison addressing a variety of topics, such as fire, first aid, finance and insurance, and public works.

15.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Wanaque was 11,317, a 2.2 percent increase 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 2022 American Community Survey indicates that 4.1 percent of the population is 5 years of age or younger, 22.3 percent is 65 years of age or older, 2.6 percent is non-English speaking, 6.2 percent is below the poverty threshold, and 13.2 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can’t afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household

income compared to the state average of $89,296, and is on par with the state average of 66 percent for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

15.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Wanaque 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 Wanaque to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

15.3.1 Planning and Regulatory Capability and Integration

Table 15-2 summarizes the planning and regulatory tools that are available to Wanaque.

Table 15-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14; International Building Code – New Jersey Edition, 2018; NJAC 5:24-3.14; Chapter 67A – Uniform Construction Codes	State and Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures. There is a State Uniform Construction Code enforcing agency to be known as "Building Department of the Borough of Wanaque." The said agency shall consist of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.				
Zoning/Land Use Code	Yes	Chapter 114 - Zoning	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. The intent of this chapter is to establish a plan for the use of lands and buildings in the Borough of Wanaque, in order to promote and protect the public health, safety, morals and the general welfare of the people. These regulations are deemed necessary to achieve the following hazard mitigation related purposes: (1) To promote orderly development, protect the character and maintain the stability of all areas within the Borough and to promote the orderly and beneficial development of such areas. (2) To regulate the intensity of use of lots and determine areas of open spaces surrounding buildings necessary to promote adequate light, air, privacy and access to property. (4) To prohibit uses, buildings or structures which are incompatible with the character of development or permitted uses within specified zoning districts. (5) To prevent additions, alterations or remodeling as would not comply with this chapter. (7) To provide protection against fire, explosion, noxious fumes and other hazards.				
Subdivision Code	Yes	Chapter 98 – Subdivision and Land Development	Local	Planning Board
Subdivision code shall provide for the review of all subdivisions of land within the Borough by local planning board and for the approval of those subdivisions affecting local road or drainage facilities as set forth and limited hereinafter in this section.				
Site Plan Code	Yes	Chapter 114 - Zoning	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county-by-county planning board and for the approval of those subdivisions affecting county road or drainage facilities. 40:27-6.10: Each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map.				

	Jurisdiction has this?	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
Stormwater Management Code	Yes	Chapter 95 – Stormwater Management, 1998	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? It is hereby determined that the lakes and waterways within the Borough of Wanaque are at times subjected to flooding, that such flooding is a danger to the lives and property of the public; that such flooding is a danger to the natural resources of the Borough of Wanaque, county and state; that development tends to accentuate such flooding by increasing stormwater runoff, due to alteration of the hydrologic response of the watershed in changing from the undeveloped to the developed condition; that such increased flooding produced by the development of real property contributes increased quantities of water-borne pollutants and tends to increase channel erosion; that such increased flooding, increased erosion and increased pollution constitutes deterioration of the water resources of the Borough of Wanaque, in the county and the state; and that such increased flooding, increased erosion and increased pollution can be controlled to some extent by the regulation of stormwater runoff from such development. It is therefore determined that it is in the public interest to regulate the development of real property and to establish standards to regulate the additional discharge of stormwater runoff from such developments as provided in this article.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 98 – Subdivision and Land Development, Environmental Protection Standards Chapter 114 – Zoning, Environmental Protection Standards	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? to protect the health and safety of the community insofar as it relates to the protection and the preservation of those natural features, including geology, hydrology, soils and vegetation considered as development constraints. It is of particular concern to maintaining ecological balance, a healthful environmental quality and protection of historic resources. This article shall control the number and size of building lots and maximum development permitted upon lots in all zones in the borough. The regulation is applicable to any subdivision, site plan and building permit, including additions, pools, decks, paving and grading in excess of 1,000 square feet.				
Flood Damage Prevention Ordinance	Yes	Chapter 74A – Flood Damage Prevention	Federal, State and Local	Borough Engineer
How has or will this be integrated with the HMP and how does this reduce risk? The Flood Damage Prevention Ordinance was recently updated with the new maps (March 9, 2020); Ordinance 3-0-2020. It is administered by the Floodplain Administrator (Borough Engineer). It is the purpose of the 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. Updated flood ordinance was adopted February 2020. a. To protect human life and health; b. To minimize expenditure of public money for costly flood control projects; c. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; d. To minimize prolonged business interruptions; e. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard; f. To 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. To ensure that potential buyers are notified that property is in an area of special flood hazard; and h. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. The ordinance is not the model code coordinated ordinance and requires update.				
Wellhead Protection	Yes	Chapter 112 – Wellhead Protection	Local	Board of Health
How has or will this be integrated with the HMP and how does this reduce risk? Underlying the Borough is a major source of existing and future water supplies; groundwater lies within the Buried Valley Aquifer Systems of the Central Passaic River Basin designated as a sole source aquifer under the Safe Drinking Water Act of 1974. Delineation of well head protection areas (WHPAs) is part of the NJ-approved 1991 well head protection plan (WHPP) for public community water supply wells. These are priority areas for efforts to prevent and clean up ground water contamination. Municipalities are empowered to regulate land use, physical facilities and other activities within WHPAs areas, the potential for groundwater contamination can be reduced under the provisions of the New Jersey Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., which authorizes each municipality to plan and regulate land use to secure a safe and adequate drinking water supply for its residents.				

	Jurisdiction has this?	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
Emergency Management Ordinance	Yes	Chapter 5 – Civil Defense Agency	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? Discusses hazard events, natural and non-natural including flood, fire and earthquakes. Per the NJ Civilian Defense and Disaster Control Act (App.A:9_43.2) Counties and municipalities must have written Emergency Operations Plans to be reviewed every 2 years. See Emergency Operations Plans below.				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
PLANNING DOCUMENTS				
General/Comprehensive Plan	Yes	Borough of Wanaque Master Plan Reexamination, 2010	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? In light of the changes in recent years within the Borough and in consideration of the new statutory and regulatory obligations and responsibilities thrust upon the Borough, the Planning Board adopts the following objectives for the Master Plan. • To preserve and protect existing residential neighborhoods from intrusions from incompatible land uses. • To continue to provide a variety of residential densities that allows housing for a varied income ranges. • To protect and preserve the Borough's environmental resources in accordance with the goals of the Highlands's Council for both the Preservation and Planning Areas. • To encourage the redevelopment of appropriate commercial and industrial properties to provide employment opportunities, strengthen its economic base and clean up polluted sites without adversely impacting residential neighborhoods. • To provide recreational facilities to serve the needs of all Borough residents. • To develop a strategic plan to improve traffic flow along Ringwood Avenue, Wanaque's primary roadway, including the possibility of alternative routing.				
Capital Improvement Plan	Yes	Borough of Wanaque Master Plan Reexamination, 2010	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? In light of the changes in recent years within the Borough and in consideration of the new statutory and regulatory obligations and responsibilities thrust upon the Borough, the Planning Board adopts the following objectives for the Master Plan. • To preserve and protect existing residential neighborhoods from intrusions from incompatible land uses. • To continue to provide a variety of residential densities that allows housing for a varied income ranges. • To protect and preserve the Borough's environmental resources in accordance with the goals of the Highlands's Council for both the Preservation and Planning Areas. • To encourage the redevelopment of appropriate commercial and industrial properties to provide employment opportunities, strengthen its economic base and clean up polluted sites without adversely impacting residential neighborhoods. • To provide recreational facilities to serve the needs of all Borough residents.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Floodplain Management or Watershed Plan	Yes	Development of a TMDL for the Wanaque Reservoir	State	NJDEP
How has or will this be integrated with the HMP and how does this reduce risk? While the Wanaque Reservoir maintains a generally high level of water quality, it can experience large fluctuations in phosphorus concentrations during drought and post-drought refill operations. A TMDL is required to address total phosphorous concentrations in the Reservoir and, by association, its river-intake sites.				
Stormwater Management Plan	Yes	Municipal Stormwater Management Plan, 2018	Local	DPW/Water and Sewer
How has or will this be integrated with the HMP and how does this reduce risk? Permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).				
Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan, 2014	Local	DPW/Water and Sewer
How has or will this be integrated with the HMP and how does this reduce risk? Permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Borough of Wanaque Emergency Operations Plan	County and Local	OEM Coordinator
How has or will this be integrated with the HMP and how does this reduce risk? The HMP will be integrated into existing EOP's. Shelter sites, evacuation routes are outside of the flood plain/way.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

15.3.2 Development and Permitting Capability

Table 15-3 summarizes the capabilities of Wanaque to oversee and track development.

Table 15-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 N/A	- Construction and Zoning
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes N/A	- Covered in housing element to Master Plan; Open Space Plan Inventory.
Describe the level of buildout in your jurisdiction. The Borough has an affordable housing need of 185 units.	N/	The Borough is located in the Highlands region and majority of land is low-density residential or undeveloped, but potentially protected by conservation and preservation regulations.

15.3.3 Administrative and Technical Capability

Table 15-4 summarizes potential staff and personnel resources available to Wanaque and their current responsibilities that contribute to hazard mitigation.

Table 15-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning Board is authorized to adopt bylaws governing its procedural operation. It shall also have the following powers and duties: • To make, adopt, examine and from time to time amend a Master Plan for the physical development of the borough, including any areas outside its boundaries, which in the Board's judgment bear essential relation to the planning of the borough in accordance with the provisions of N.J.S.A. 40:55D-89. • To administer the provisions of the land subdivision ordinance and site plan review ordinance of the Borough • To participate in the preparation and review of programs or plans required of the Planning Board by state or federal law or regulations. • To assemble data on a continuing basis as part of a continuous planning process.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		• When authorized by resolution of the governing body, prepare a program of municipal capital improvement projects projected over a term of six years, and amendments thereto, and recommend same to the governing body. • To approve conditional uses in accordance with the provisions of the zoning ordinance, pursuant to N.J.S.A. 40:55D-67. • When reviewing applications for approval of subdivision plats, site plans or conditional uses, to grant, to the same extent and subject to the same restrictions as the Zoning Board of Adjustment.
Zoning Board of Adjustment	Yes	Same as Planning Board
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	Yes	Open Space and Recreation Advisory Commission
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	DPW/Water and Sewer The Water & Sewer department is in charge of the physical maintenance of the water and sewer system, including maintain the wells within the Borough.
Construction/Building/Code Enforcement Department	Yes	The Building Department issues permits for building, electric, plumbing, fire, shed, and tree permits, along with appropriate inspections. This Department also issues Certificates of Occupancy (“CCO”) for the resale of single-family homes, two-family homes and change of tenancy in rental units. Building and Zoning also accepts applications for variances, subdivisions, and site plan applications for the Planning Board and Board of Adjustment.
Emergency Management/Public Safety Department	Yes	-
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Regular storm drain cleaning; tree trimming
Mutual aid agreements	Yes	Administration, Police, Fire, Court, Code Enforcement, First Aid, Passaic Health Department
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Administrator
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Borough Engineer
Staff that work with socially vulnerable populations or underserved communities	No	-
Environmental scientists familiar with natural hazards	Yes	Borough Engineer
Surveyors	Yes	Borough Engineer
Emergency manager	Yes	Emergency Management Coordinator
Grant writers	Yes	Contracted
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

15.3.4 Fiscal Capability

Table 15-5 summarizes financial resources available to Wanaque.

Table 15-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes – Passaic County CDBG
Capital improvement project funding	Yes – Borough
Authority to levy taxes for specific purposes	Yes – Borough
User fees for water, sewer, gas, or electric service	Yes – Water and Sewer
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes – Borough
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	No
Open Space Acquisition funding programs	Yes – Open Space and Recreation Tax
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Yes - NJDOT

15.3.5 Education and Outreach Capability

Table 15-6 summarizes the education and outreach resources available to Wanaque.

Table 15-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Borough Clerk or Mayor Council
Personnel skilled or trained in website development	Yes	Webmaster
Hazard mitigation information available on your website	Yes	Information on stormwater is included on the DPW page of the municipal website.
Social media for hazard mitigation education and outreach	Yes	Facebook, X (Formerly Twitter)
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	LED Sign on Borough Hall/Ringwood Avenue north of Union Avenue, Reverse 911, Facebook
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	Passaic County Health Department
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	Social Media, Municipal Website, Swift 911

15.3.6 Community Classifications

Table 15-7 summarizes classifications for community programs available to Wanaque.

Table 15-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	7	2010
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

15.3.7 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 15-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough'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 15-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

15.4 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 15-1 is responsible for maintaining this information.

15.4.1 NFIP Statistics

Table 15-9 summarizes the NFIP policy and claim statistics for Wanaque.

15.4.2 Flood Vulnerability Summary

Table 15-10 provides a summary of the NFIP program in Wanaque.

Table 15-9. Wanaque NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	25
Total Loss Payments	$363,762
# Repetitive Loss Properties (NFIP definition)	7
# Repetitive Loss Properties (FMA definition)	0
# Severe Repetitive Loss Properties (NFIP definition)	1
# Severe Repetitive Loss Properties (FMA definition)	1

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 2024

Table 15-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Meadowbrook, Fox Den, Rhonda, Addice Park; Park Street, Prospect Street, Mullen Avenue; Du Pont Avenue, Makemoney Avenue, Toquet streets; 6th, 5th, 4th, 2nd Avenues; Ringwood Avenue; Conklintown Rd; Gary Place; Grist Milk Road
Do you maintain a list of properties that have been damaged by flooding?	No
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
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Procedures need to be developed
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
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 Topic	Comments
NFIP Compliance	
What local department is responsible for floodplain management?	Borough Engineer
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?	No
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 Capabilities
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Plan review
What are the barriers to running an effective NFIP program in the community, if any?	Funding
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)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 74A of Borough Code
What is the date that your flood damage prevention ordinance was last amended?	February 2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets
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?	No
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

15.5 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 15-11 through Table 15-13.

Table 15-11. 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
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0

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

Table 15-12. Recent Major Development and Infrastructure from 2017 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
RSK Development	Residential	12	20 Mountain Avenue	None	Completed

** Only location-specific hazard zones or vulnerabilities identified.*

Table 15-13. 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
Wanaque Depo Renewal	Commercial	1	Union Ave (400/11)	None	Board Approval / No Construction

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

15.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 15-1 through Figure 15-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Wanaque has significant exposure. The maps show the location of potential new development, where available.

Figure 15-1. Wanaque NEHRP Hazard Area Extent and Location Map

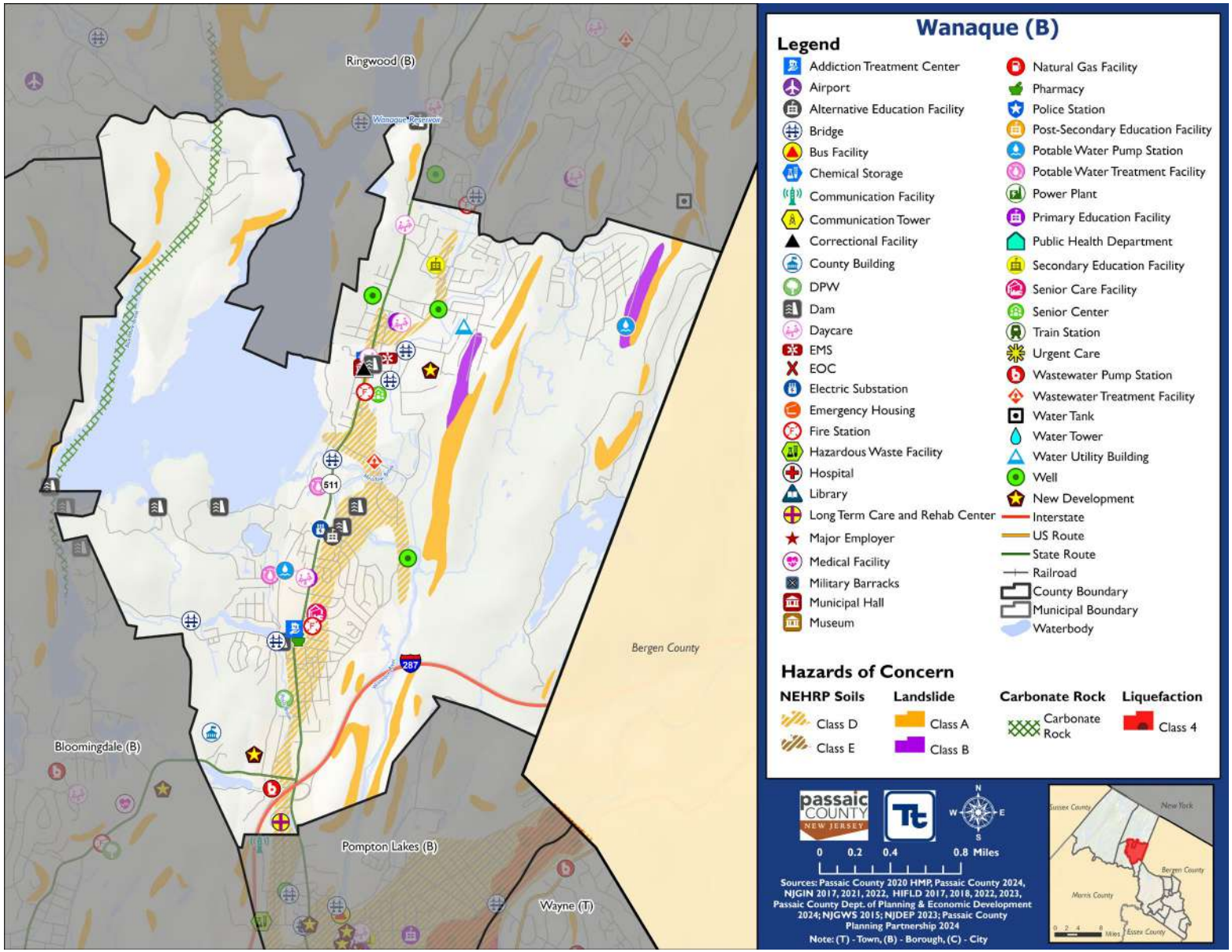
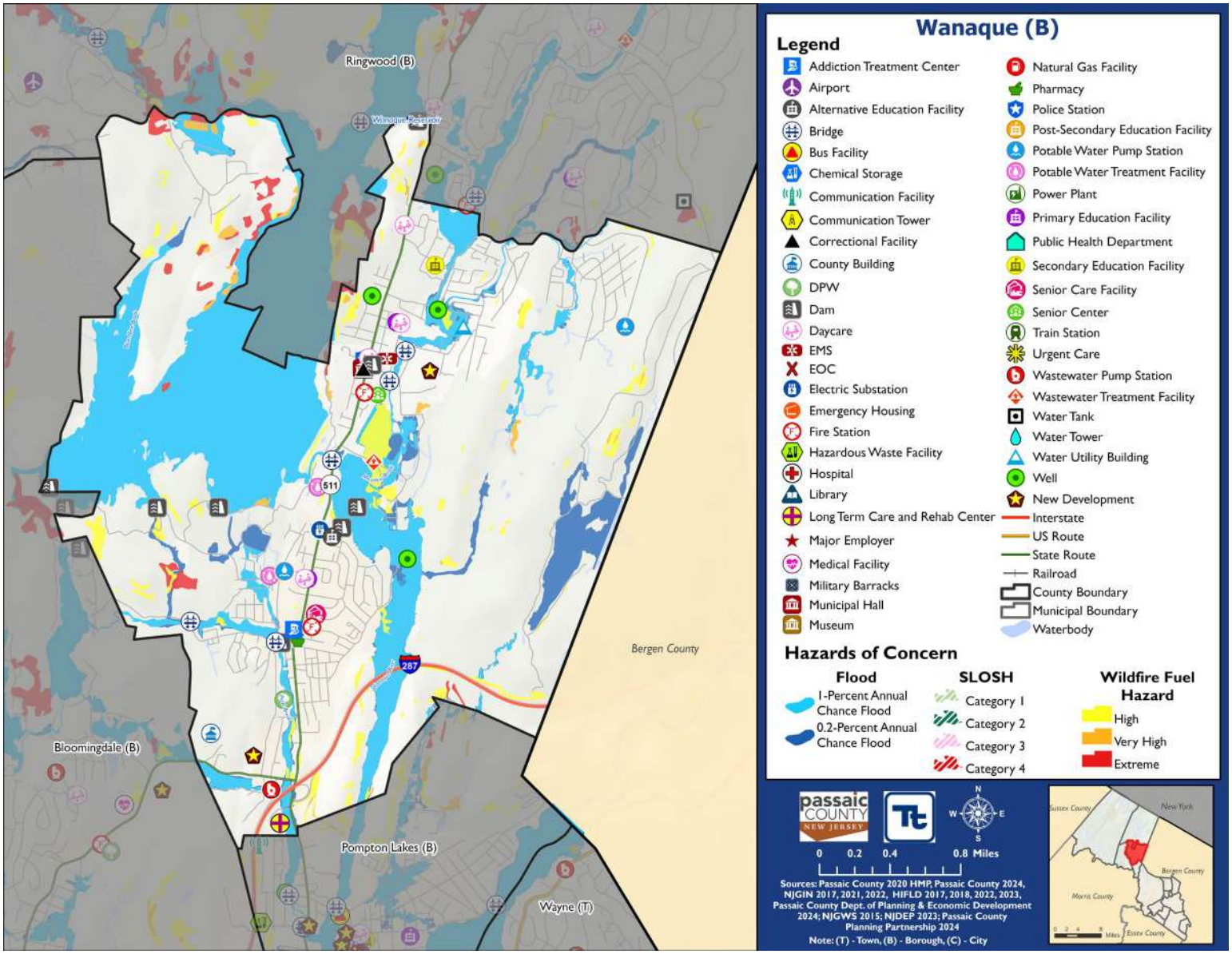


Figure 15-2. Wanaque Flood and Wildfire Hazard Area Extent and Location Map



15.6.2 Hazard Event History

The history of natural and non-natural hazard events in Wanaque is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 15-14 provides details on loss and damage in Wanaque during hazard events since the last hazard mitigation plan update.

Table 15-14. Hazard Event History in Wanaque

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Wanaque
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	The Borough did not have any notable damages or losses.
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Borough filed statistics with Passaic County and the State of New Jersey.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	The Borough did not experience any documented damages and losses.

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

15.6.3 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 the Borough of Wanaque.

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. Wanaque 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 Borough indicated it agreed with the preliminary results.

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

Table 15-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Geological	Low
Extreme Temperature	Medium
Flood	Medium
Severe Weather	Medium
Severe Winter Weather	Medium
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 15-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 15-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600046	Bridge	X	X
1600146	Bridge	X	X
1600147	Bridge	X	X
1600363	Bridge	X	X
Haskell Well 1	Well	X	X
Meadowbrook Well 1	Well	X	X
Regional Wastewater Treatment Facility	Wastewater Treatment Facility	X	X
Wanaque Wastewater Pump Station	Water Utility Building	X	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

In addition to critical facilities that are exposed to flooding, the Borough of Wanaque contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

15.6.4 Identified Issues

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

- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has eight repetitive loss properties and one severe repetitive loss property, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are located within the municipality and located in the special flood hazard area:
  - Highway Bridge:1600046
  - Highway Bridge:1600146
  - Highway Bridge:1600147
  - Highway Bridge:1600363
  - Haskell Well 1
  - Meadowbrook Well 1
  - Regional Wastewater Treatment Facility
  - Wanaque Wastewater Pump Station
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams located in the Borough, including Raymond Dam, Green Swamp #3 Dam, Midvale Dam, Green Swamp #2 Dam, Overflow Weir Dam, Wolf Den Dam, Rainbow Valley Lake Dam and Green Swamp #4 Dam. These structures have the potential to impact those living nearby.
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- 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.
- Lines Avenue is located near the Wanaque Reservoir and has walls installed to prevent flooding issues. There has been a feasibility study done on the current walls and mitigation initiatives need to be implemented.
- The current update of the County Hazard Mitigation Plan has not been integrated into the next Master Plan update yet.
- The Borough has not adopted NJDEP's model Code Coordinated Ordinance and will need to remain compliant with the NFIP.

15.7 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.

15.7.1 Past Mitigation Action Status

Table 15-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

15.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 15-17, the Borough of Wanaque identified the following additional mitigation efforts completed:

- The Borough Hall was built in 2015 with emergency capabilities in mind. The building is equipped with gas fired generators sufficient to power both heat and electricity. The Police Department and the Emergency Management Office are located in Borough Hall.

Table 15-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Wanaque-001			Borough Engineering	Replace existing and potentially widen the wall on Lines Avenue. Evaluate the feasibility study and implement mitigation	1.In Progress 2. The Borough is currently evaluating funding opportunities and determine scope of work for this feasibility study. Project is still in development.	1.Include 2. Keep as is 3. N/A
2020-Wanaque-002			Borough Engineering	A feasibility study is needed to determine mitigation alternatives to protect to a 25-year storm event	1.No Progress 2.	1.Discontinue 2. 3. No progress due to lack of funding.
2020-Wanaque-003			Borough Engineer	Install generators to provide backup power to critical facilities.	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete
2020-Wanaque-004			Borough Engineer	Enhance Fox Down location with fuel, bulk salt supply, and stand by generator to service community	1.No Progress 2.	1.Discontinue 2. N/A 3. Located in the floodplain
2020-Wanaque-005			Borough Engineer	Conduct a feasibility study for design of critical facility mitigation alternatives in the floodplain.	1.No Progress 2. Lack of funding	1.Include 2. Keep as is 3. N/A
2020-Wanaque-006			Planning Board	Integrate the HMP into the next Master Plan update.	1. Ongoing. 2. The Borough is awaiting HMP adoption for the 2025 Master Plan update.	1.Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Wanaque-007			Borough	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone area that experience frequent flooding (high risk areas).	1.No Progress 2. Borough will attempt to conduct outreach to flood-prone property owners; mitigation action has been impacted due to limited capacity and capability in the Borough	1.Include 2.Keep as is 3. N/A

15.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Wanaque 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 Wanaque 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 Borough priorities.

Table 15-18 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 15-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 15-18. 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
Drought	X				X					X
Geological	X				X					X
Extreme Temperature	X				X					X
Flood	X	X			X	X	X			X
Severe Weather	X	X			X	X	X			X
Severe Winter Weather	X				X					X
Wildfire	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 15-19. 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**	
Action 2025-WanaqueB-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WanaqueB-002	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-WanaqueB-003	Dam Owner Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	High
Action 2025-WanaqueB-004	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WanaqueB-005	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WanaqueB-006	Lines Avenue Mitigation	1	1	1	1	1	0	0	1	1	1	1	1	1	1	**12**	High
Action 2025-WanaqueB-007	HMP Integration	1	1	1	1	1	1	0	0	1	1	1	1	0	0	**10**	Medium

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-WanaqueB-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Severe Storm, Flood
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 Borough has eight repetitive loss properties and one severe repetitive loss property, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 20 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection, Public Information
Priority	High

Alternatives:

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

Action 2025-WanaqueB-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers
Supporting Agencies:	Planning Board
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are located within the Borough and located in the special flood hazard area: • Highway Bridge:1600046 • Highway Bridge:1600146 • Highway Bridge:1600147 • Highway Bridge:1600363 • Haskell Well 1 • Meadowbrook Well 1 • Regional Wastewater Treatment Facility • Wanaque Wastewater Pump Station
Description of the Solution:	The Borough will conduct a feasibility assessment with the critical facility owners to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Borough will work with the owner of the asset as some of these assets are either privately owned or County owned before proceeding with the mitigation action.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Town Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	2,5
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Emergency Services, Property Protection
Priority	High

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

Action 2025-WanaqueB-003. Dam Owner Partnership

Lead Agency:	Public Works
Supporting Agencies:	Dam Owner and Managers
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams located in the Borough, including: Raymond Dam, Green Swamp #3 Dam, Midvale Dam, Green Swamp #2 Dam, Overflow Weir Dam, Wolf Den Dam, and Green Swamp #4 Dam. These structures have the potential to impact those living nearby.
Description of the Solution:	The Borough will work with the owners and managers of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by the Borough OEM and shared with the County OEM.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,7
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:	N/A
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	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-WanaqueB-004. Disaster Debris Management

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-WanaqueB-005. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025-WanaqueB-006. Lines Avenue Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Flood, Severe Weather, Severe Winter Weather
Description of the Problem:	Lines Avenue is located near the Wanaque Reservoir and has walls installed to prevent flooding issues. There has been a feasibility study done on the current walls and mitigation initiatives need to be implemented.
Description of the Solution:	The Borough will harden existing walls to increase level of protection and will potentially widen the walls on Lines Avenue based on what the feasibility study reports.
Estimated Cost:	TBD after engineering
Potential Funding Sources:	HMGP, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	4,5
Benefits:	This action implements the results of the feasibility study and will ensure the protection of Lines Avenue.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be dependent on that road for any critical facilities that may be located along Lines Avenue.
Impact on Future Development:	This action reduces flooding which may allow for new development.
Impact on Critical Facilities/Lifelines:	Some critical facilities/lifelines may be located along Lines Avenue.
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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase Moveable flood barriers	Is not a permanent solution
Elevate Lines Avenue	Not cost effective

Action 2025-WanaqueB-007. HMP Integration

Lead Agency:	Planning Board
Supporting Agencies:	HMP Coordinator
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The current update of the County Hazard Mitigation Plan has not been integrated into the next Master Plan update yet.
Description of the Solution:	The Borough will integrate the current Hazard Mitigation Plan into the next Master Plan update, including addressing the current identified hazards of concern in the Master Plan.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 2 Years
Goals Met:	1,2,4,5
Benefits:	This integrates the concerns and problems identified in the HMP to the Master Plan.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations that may be more heavily impacted by certain hazards will be better protected from those hazards after integrating the concerns into the Master Plan.
Impact on Future Development:	The Borough can use the HMP to identify good areas to build out.
Impact on Critical Facilities/Lifelines:	The Master Plan can address critical facilities that may be impacted by hazard events.
Impact on Capabilities:	This action strengthens the Borough’s ability to handle the hazard events addressed in the HMP.
Climate Change Considerations:	Climate Change is leading to an increase in intensity and frequency of precipitation events that may exacerbate some of the hazards of concern.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Rely on State and Federal Sources	Not local specific

16. TOWNSHIP OF WAYNE

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

16.1 HAZARD MITIGATION PLANNING TEAM

The Township of Wayne 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 OEM Coordinator represented the community on the Passaic 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 16-1 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 16-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Captain Dan Daly, OEM Coordinator Address: 475 Valley Rd, Wayne, NJ 07470 Phone Number: (201) 414-0896 Email: dalyd@waynetownship.com	Name/Title: Chris Tietjen, Business Administrator Address: 475 Valley Rd, Wayne, NJ 07470 Phone Number: (973) 633-3202 Email: tietjenc@waynetownship.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Jacqueline M. Dirmann, PE, CME, CFM, NFIP Coordinator for Wayne Township Address: 400 Broadacres Drive, Suite 250, Bloomfield, NJ, 07003 Phone Number: 973-532-1188 Email: jdirmann@tandmassociaates.com	
Additional Contributors	
Name/Title: Captain Dan Daly, OEM Coordinator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Heather Vitz-Del Rio, Township Engineer and Director of Public Works Method of Participation: Provided key input in the planning process by completing worksheets	

16.2 COMMUNITY PROFILE

16.2.1 Brief History

According to the History of Wayne, the Township was first settled in the late 1600's after the area was purchased in 1695. The area underwent many jurisdictional changes until 1847 when the Township became an incorporated

municipality. Throughout its development, Wayne was a farming community with grist, saw and cider mills and blacksmith shops. Its location along the Morris Canal made it a suitable location for development and trade, as well as vacationers from New York City.

16.2.2 Location

According to the U.S. Census Bureau, the Township has a total land area of 25.174 square miles, of which 23.728 square miles is land and 1.446 square miles is water.

16.2.3 Governing Body Format

The Township is governed by the Mayor/Council form of government under the Faulkner Act. This format consists of two equal yet distinct centers of power, each elected by the people: the Mayor as chief executive officer, and the Council as the municipal legislature. The Council consists of nine members, one elected from each of the six wards and three elected at-large with a term of four years.

16.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Wayne was 54,838, a 0.2 percent increase 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 2020 U.S. Census indicates that 5.3 percent of the population is 5 years of age or younger, 20.1 percent is 65 years of age or older, 3.7 percent is non-English speaking, 2.6 percent is below the poverty threshold, and 8 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household income compared to the state average of $89,296, and is on par with the state average of 66 percent for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

16.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

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

16.3.1 Planning and Regulatory Capability and Integration

Table 16-2 summarizes the planning and regulatory tools that are available to Wayne.

Table 16-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14 International Building Code – New Jersey Edition, 2018 NJAC 5:24-3.14	State and Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures.				
Zoning/Land Use Code	Yes	Chapter 134, Article 3 – Zoning Regulations	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. Zoning Regulations Chapter 134 Article III is enforced by the Building Department. “It is the purpose of the Township in adopting this Land Development Chapter to implement the adopted Master Plan of the Township of Wayne and exercise to the fullest the powers granted to the Township by the State of New Jersey to manage land use and development through zoning, subdivision and site plan regulations, planned development, soil erosion and sediment control, flood plain regulations, soil removal and control of fill, environmental protection provisions, historical preservation and through the police power generally. It is the further purpose of the Township in adopting this chapter to organize and codify all such powers of land use management into one comprehensive and cohesive system which will facilitate administration and minimize procedural difficulties and technical conflicts inherent in separate ordinances, while providing maximum protection of the public health, safety, morals and general welfare in accordance with the provisions of N.J.S.A. 40:55D-2 et seq., through the full exercise of the land use management powers available to the Township.”			

	Jurisdiction has this?	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
Subdivision Code	Yes	Chapter 134 – Land Development	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Chapter 134 Land Development of the Township code is enforced by the Building Department.				
Site Plan Code	Yes	Chapter 134, Article 5 – Site Plan and Subdivision Standards	Local	Planning Department
How has or will this be integrated with the HMP and how does this reduce risk? Ensures safe and uniform construction and permitting of approved facilities.				
Stormwater Management Code	Yes	Chapter 177 – Stormwater Management Regulations;		Yes
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 433 of the municipal code; DPW enforces. The Stormwater Control Ordinance establishes minimum stormwater management requirements and controls for major development. Chapter 177 Stormwater Management Regulations is enforced by the DPW. “The Governing Body hereby finds and declares that regulations to prohibit the spilling, dumping, or disposal of materials other than stormwater to the municipal separate storm sewer system (MS4) operated by the Township of Wayne are necessary so as to protect public health, safety and welfare.”				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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.

This law went into effect in March 2024 during the planning process of this plan update.

Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 32 – Air Pollution Control Chapter 134 Article VI – Environmental Protection	State, County and Local	Passaic County Department of Health
How has or will this be integrated with the HMP and how does this reduce risk? Protect the health, safety and public welfare of the Township of Wayne through the protection and preservation of natural features including geology, hydrology, soils, and vegetation in order to prevent erosion and flood damage and maintain ecological balance and a healthful environmental quality.				

	Jurisdiction has this?	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
Flood Damage Prevention Ordinance	Yes	Chapter 134, Article 97 – Floodplain Regulations	Local	Floodplain
How has or will this be integrated with the HMP and how does this reduce risk? These regulations, in combination with the flood provisions of the Uniform Construction Code and FHACA shall apply to all proposed development in flood hazard areas established in these regulations. The purposes and objectives of these regulations are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, designed to: (a) Protect human life and health. (b) Prevent unnecessary disruption of commerce, access, and public service during times of flooding. (c) Manage the alteration of natural floodplains, stream channels and shorelines; (d) Manage filling, grading, dredging and other development which may increase flood damage or erosion potential. (e) Prevent or regulate the construction of flood barriers which will divert floodwater or increase flood hazards. (f) Contribute to improved construction techniques in the floodplain. (g) Minimize damage to public and private facilities and utilities. (h) Help maintain a stable tax base by providing for the sound use and development of flood hazard areas. (i) Minimize the need for rescue and relief efforts associated with flooding. (j) Ensure that property owners, occupants, and potential owners are aware of property located in flood hazard areas. (k) Minimize the need for future expenditure of public funds for flood control projects and response to and recovery from flood events. (l) Meet the requirements of the National Flood Insurance Program for community participation set forth in Title 44 Code of Federal Regulations, Section 59.22. The ordinance follows the latest model code coordinated ordinance from NJDEP.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	Yes	Article 19, Section 4 – Local Emergency Management Council; Coordinator and Deputy Coordinator	Local	Emergency Management Coordinator
How has or will this be integrated with the HMP and how does this reduce risk? Establishes at 15-member Local Emergency Management Council that shall assist the Township in establishing the various local volunteer agencies needed to meet the requirements of all local emergency management activities in accordance with rules and regulations established by the Governor pursuant to general law. The Local Emergency Management Council is authorized, within limits of appropriation, to establish an adequate organization to assist in supervising and coordinating the emergency management activities of the Township.				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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	Township of Wayne Master Plan Reexamination, 2020	Local	Planning
How has or will this be integrated with the HMP and how does this reduce risk? The focus of the 2020 Master Plan Reexamination report was on impacts to the economy from rapid and disruptive technological advances and whether the Master Plan is sufficient to address these changes over the course of the next decade. A key finding of this report is that the Township's land use policies should be updated based on public input in order to address modern challenges.				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? Capital Improvement Projects are included in the annual budget appropriation for the Township.				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	Yes	Flood Plain Management Plan, 2022	Local	DPW
How has or will this be integrated with the HMP and how does this reduce risk? Incorporates updated flood mapping, plans for acquisition of property, updated zoning regulations and a discussion of obstacles in funding the Housing Improvement Program.				
Stormwater Management Plan	Yes	Township of Wayne Stormwater Management Plan	State and Local	DPW
How has or will this be integrated with the HMP and how does this reduce risk? Outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	Yes	Township of Wayne Master Plan Reexamination, 2020	State and Local	Planning
How has or will this be integrated with the HMP and how does this reduce risk? The focus of the 2020 Master Plan Reexamination report was on impacts to the economy from rapid and disruptive technological advances and whether the Master Plan is sufficient to address these changes over the course of the next decade. As will be discussed later, a key finding of this report is that the Township's land use policies should be updated based on public input in order to address modern challenges.				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	Yes	Wayne Transit Zone Planning Area Master Plan Amendment, 2008	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Amends the Township's Land Use Element of the Master Plan in order to provide a blueprint to promote and foster development opportunities associated with the newly completed New Jersey Transit Route 23 Transit Center and surrounding area in a manner that implements Township planning policies related to economic development, housing, and environmental protection while also promoting principles of smart growth and community sustainability.				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	Yes	Housing Element and Fair Share Plan Master Plan Amendment	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? Outlines opportunities for affordable housing and details support of community growth and support of current residents and their housing needs.				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Township of Wayne Emergency Operations Plan	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? The plan will complement the HMP as it is the policy and intention of Wayne Township to continue to initiate, support and actively participate in any and all mitigation projects which will lead to flood relief for our residents and property owners.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan				
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	N			
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

16.3.2 Development and Permitting Capability

Table 16-3 summarizes the capabilities of Wayne to oversee and track development.

Table 16-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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	Planning and Engineering
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Building GIS Mapping
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes Yes	GIS has maps that display this
Describe the level of buildout in your jurisdiction.	Yes	Mostly built out, contains significant forested land to the northeast.

16.3.3 Administrative and Technical Capability

Table 16-4 summarizes potential staff and personnel resources available to Wayne and their current responsibilities that contribute to hazard mitigation.

Table 16-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	All revisions, amendments, and changes to the Zoning Ordinance are reviewed by the Planning Board, and recommendations are passed on to the Township Council. The Planning Board classifies and approves new subdivisions and gives final approval on all site plans.
Zoning Board of Adjustment	Yes	The Zoning Board of Adjustment is a Board that has the power to modify the zoning law but not change it. By statute a Zoning Board is a quasi-judicial body and is granted four separate powers: • To hear and decide appeals where it is alleged that there is an error in any order or decision of an administrative official based on enforcement of the zoning ordinance. • To hear and decide requests for special exceptions or for interpretation of the map or for decisions upon other special questions upon which the board is authorized to by this ordinance to pass. • To grant variances (without impairing the intent or purpose of the zone plan and zoning ordinance) where the withholding of such will inflict hardship. • To grant variances in particular cases and for special reasons to allow a structure or use in a district restricted against such use or structure.
Planning Department	Yes	The Planning and Zoning Department is the municipal office of the Planning Board and Zoning Board of Adjustment. As such it is responsible for the processing of applications for development, subdivision, site plan, and variance. The duties and responsibilities of the department and the boards are governed by the Municipal Land Use Law, Chapter 291, Laws of New Jersey, 1975, and the Township ordinances Chapter 134, Zoning, and Planning & Development Regulations (the Land Development Ordinance). The Department works closely with other Township Departments such as Building, Engineering, Public Works, Health, Tax Assessor, Parks and Recreation, and Legal, as well as the Economic Development Commission. The offices of the Township Affordable Housing Administrator, the Community Development Block Grant Administrator, and the Housing Rehabilitation/Housing Improvement Program Coordinator are also located in the Planning and Zoning Department.
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Some of the powers and duties of the Environmental Commission are to gather information; offer advice to other agencies; acquire land and endangered open space with the Township's approval; and, make recommendations to the planning board and/or Mayor and Council on the development and use of such areas.
Open Space Board/Committee	Yes	Open Space Committee

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Economic Development Commission/Committee	Yes	The duties of the Economic Development Commission shall be as follows: • Prepare a commercial use survey and inventory for the Township, monitor commercial uses and commercial tax ratables and assist businesses and attract businesses which will make a major contribution to the economy of the Township • Develop and maintain an inventory of available, vacant or under-utilized properties, commercial properties, including properties to be used for economic development, according to its adaptability to various types of business, professional and industrial enterprises. • Coordinate efforts with county and state economic development agencies, as well as any regional, federal, or private agencies, in an attempt to foster or effectuate a positive commercial economic environment for the Township. • Assist the Township administration and the Township Council, if requested, in the preparation of applications for any grants or funding which would help facilitate efforts to research the availability of such grants or funding. • Coordinate with the Small Business Administration and any other federal, state, or local agencies to assist or promote business or commerce in order to enable the Commission to give guidance and information to businesses that desire to start up or relocate to the Township. • To prepare, develop and distribute advertising material and data listing the advantages, opportunities, and availability of real estate in the Township to encourage and accomplish business, industrial and professional services within the Township • Confer with the Township Administration, Township Council, the Planning Board, and other municipal agencies, as necessary, concerning land use issues, ordinances, and resolutions that may have an impact upon commercial and retail.
Public Works/Highway Department	Yes	The Department of Public Works is responsible for the operation and maintenance of the Township's extensive municipal infrastructure including roadways, traffic signals, street signage, storm drainage, snow removal, sanitary sewers, sewer treatment and drinking water supply and distribution. There are over 960 local Township streets, comprising more than 200 miles of infrastructure. The Division of Engineering provides technical, engineering, and surveying services to the Department of Public Works and its Divisions. This Division prepares plans and specifications for a variety of public works and other improvement projects and supervises and inspects all work done. The Division also maintains and provides for public information maps, plans and specifications, surveys, and other records as may be required on public property, public works, and facilities owned or operated by the Township. The Engineering Division provides technical support to other Township Departments as needed in the form of surveys, design, reviews, and inspections of a variety of public works projects. The Division additionally reviews private development projects, provides review reports to the Board of Adjustment and the Planning Board, and inspects improvements constructed by developers intended to be turned over to the Township.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Construction/Building/Code Enforcement Department	Yes	The Building Division provides assistance to residents, reviews permit applications, issues permits when proper, and inspects construction. This construction and the inspections must conform to various National Codes and State Regulations. All Inspectors are licensed by the State and also pass various courses and tests to be licensed. If anyone plans on making any improvements or modifications to their land or structure, they should contact the Construction Inspection Offices to gain the advice and direction necessary to comply with local or State regulations. This Division is headed by the Construction Code Official.
Emergency Management/Public Safety Department	Yes	The Wayne Township Office of Emergency Management is a stand-alone component of the Municipal government. The office works closely with Federal, State, County and local agencies to assure the coordination of large-scale events. It plans for, coordinates, and directs operations at large scale civil emergencies that usually require the coordinated efforts of multiple components of municipal government, outside agencies and local volunteer groups. The Municipal Emergency Management Coordinator is responsible for the provision of leadership in the field of Emergency Management and is responsible for Emergency Management program administration and program development encompassing the four phases of Emergency Management–mitigation, preparedness, response, and recovery. The Emergency Management organization is comprised of several Deputy Coordinators, a Public Information Officer, support staff, the Local Emergency Planning Council, and volunteers including the Community Emergency Response Team and Volunteers Active in Disasters (VOAD).
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	DPW – stormwater maintenance, repair catch basins, maintain infrastructure
Mutual aid agreements	Yes	OEM/EOP
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	Yes	The Wayne Health Department works to prevent the premature onset of disease and disability and to help all residents achieve healthier, more productive lives. The Department is committed to maintaining, protecting, and promoting the health of its residents through organized health promotion and disease prevention efforts. These efforts are based on state-wide standards set forth by New Jersey's Department of Health and Senior Services.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Township Planner/Township Engineer/Director of DPW

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer/Building Official
Planners or engineers with an understanding of natural hazards	Yes	Township Planner/Township 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	Yes	Township Engineering Department
Staff that work with socially vulnerable populations or underserved communities	Yes	The Special Needs Commission seeks to create a more inclusive community for individuals in Wayne with special needs and their families by promoting acceptance and awareness through advocacy, creating social and educational programs, and providing access to local resources to enhance their quality of life.
Environmental scientists familiar with natural hazards	No	-
Surveyors	Yes	Township Engineering Department
Emergency manager	Yes	The Wayne Township Office of Emergency Management is a standalone component of the Municipal government. The office works closely with Federal, State, County and local agencies to assure the coordination of large-scale events. It plans for, coordinates and directs operations at large scale civil emergencies that usually require the coordinated efforts of multiple components of municipal government, outside agencies and local volunteer groups. The Municipal Emergency Management Coordinator is responsible for the provision of leadership in the field of Emergency Management and is responsible for Emergency Management program administration and program development encompassing the four phases of Emergency Management–mitigation, preparedness, response and recovery. The Emergency Management organization is comprised of several Deputy Coordinators, a Public Information Officer, support staff, the Local Emergency Planning Council, and volunteers including the Community Emergency Response Team and Volunteers Active in Disasters (VOAD).
Grant writers	No	
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

16.3.4 Fiscal Capability

Table 16-5 summarizes financial resources available to Wayne.

Table 16-5. Fiscal Capabilities

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

16.3.5 Education and Outreach Capability

Table 16-6 summarizes the education and outreach resources available to Wayne.

Table 16-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	OEM, Police, and Mayor all serve as Public Information Officers
Personnel skilled or trained in website development	Yes	
Hazard mitigation information available on your website	Yes	Flood Inundation Page
Social media for hazard mitigation education and outreach	Yes	X (Formerly Twitter), Facebook, Instagram
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Warning systems for hazard events	Yes	Reverse 911, Emergency Notification Network, social media, Emergency Radio station, website, traffic advisory page on website, road closure portal, Crisis Go: Notification system for the town emergency responders and staff.
Natural disaster/safety programs in place for schools	No	-
Organizations that conduct outreach to socially vulnerable populations and underserved populations	Yes	The Special Needs Commission seeks to create a more inclusive community for individuals in Wayne with special needs and their families by promoting acceptance and awareness through advocacy, creating social and educational programs, and providing access to local resources to enhance their quality of life.
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	TV Station

16.3.6 Community Classifications

Table 16-7 summarizes classifications for community programs available to Wayne.

Table 16-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	Yes	7	May 1, 2015
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	04/4Y	October 1, 2017
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	Not classified	March 13, 2012
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

16.3.7 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 16-8 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 16-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological Hazards	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

16.4 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 16-1 is responsible for maintaining this information.

16.4.1 NFIP Statistics

Table 16-9 summarizes the NFIP policy and claim statistics for Wayne.

Table 16-9. Wayne NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	4,536
Total Loss Payments	$113,266,831
# Repetitive Loss Properties (NFIP definition)	246
# Repetitive Loss Properties (FMA definition)	8
# Severe Repetitive Loss Properties (NFIP definition)	227
# Severe Repetitive Loss Properties (FMA definition)	446

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 2024

16.4.2 Flood Vulnerability Summary

Table 16-10 provides a summary of the NFIP program in Wayne.

Table 16-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Low lying areas along the Ramapo, Pompton and Passaic Rivers
Do you maintain a list of properties that have been damaged by flooding?	No, but we do have a repetitive loss area list
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?	Based on damage versus market value of the property
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	300+ Federal and State buyout programs
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?	Public Works/Engineering & Construction Code
Are any certified floodplain managers on staff in your jurisdiction?	Yes – 2
Do you have access to resources to determine possible future flooding conditions from climate change?	No
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?	Yes Training of new staff
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	We review all permits within the flood zone to determine if pre-approvals are required (NJDEP permits) Our GIS system shows the FIRM flood plain information We conduct outreach via an annual mailing to repetitive loss areas and provide information via our Recycling brochure semi-annual mailing. We provide inspections and advice to property owners regarding flood permitting and retrofitting
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	By comparing the value of the work proposed to the market value of the structure
What are the barriers to running an effective NFIP program in the community, if any?	Funding
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)?	February 22, 2024
What is the local law number or municipal code of your flood damage prevention ordinance?	134-97 adopted July 2023 includes the NJDEP Model Code.
What is the date that your flood damage prevention ordinance was last amended?	July 2023
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets

NFIP Topic	Comments
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	No
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes

16.5 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 16-11 through Table 16-13.

Table 16-11. 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
2020				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2021				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2022				
Total Permits	7	0	12	19
Permits within SFHA	1	0	0	1
2023				
Total Permits	5	1	8	13
Permits within SFHA	1	0	1	2

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

Table 16-12. Recent Major Development and Infrastructure from 2017 to Present

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

** Only location-specific hazard zones or vulnerabilities identified.*

Table 16-13. 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
None Identified					

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

16.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Township are shown in Figure 16-1 through Figure 16-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Wayne has significant exposure. The maps show the location of potential new development, where available.

Figure 16-1. Wayne NEHRP Hazard Area Extent and Location Map

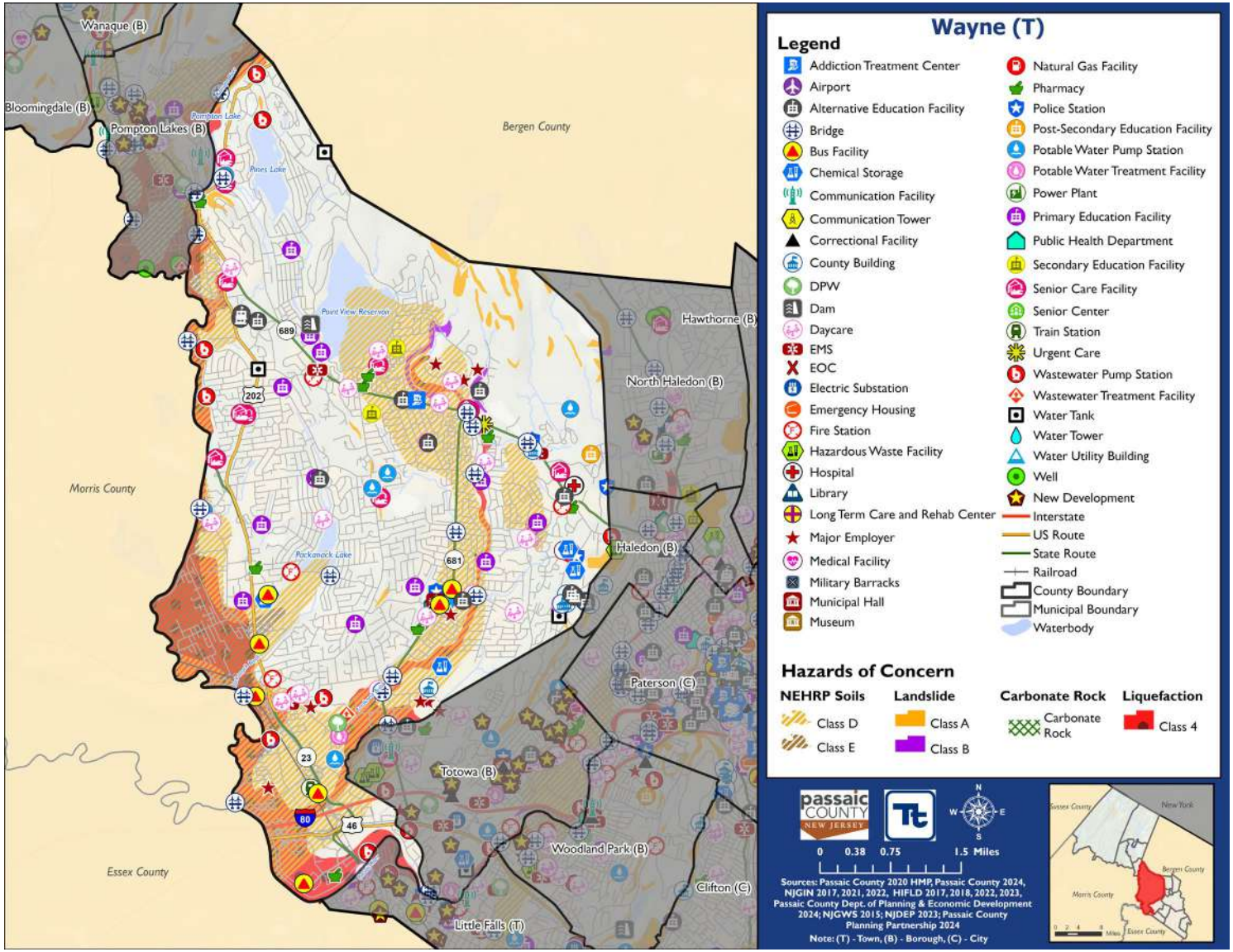
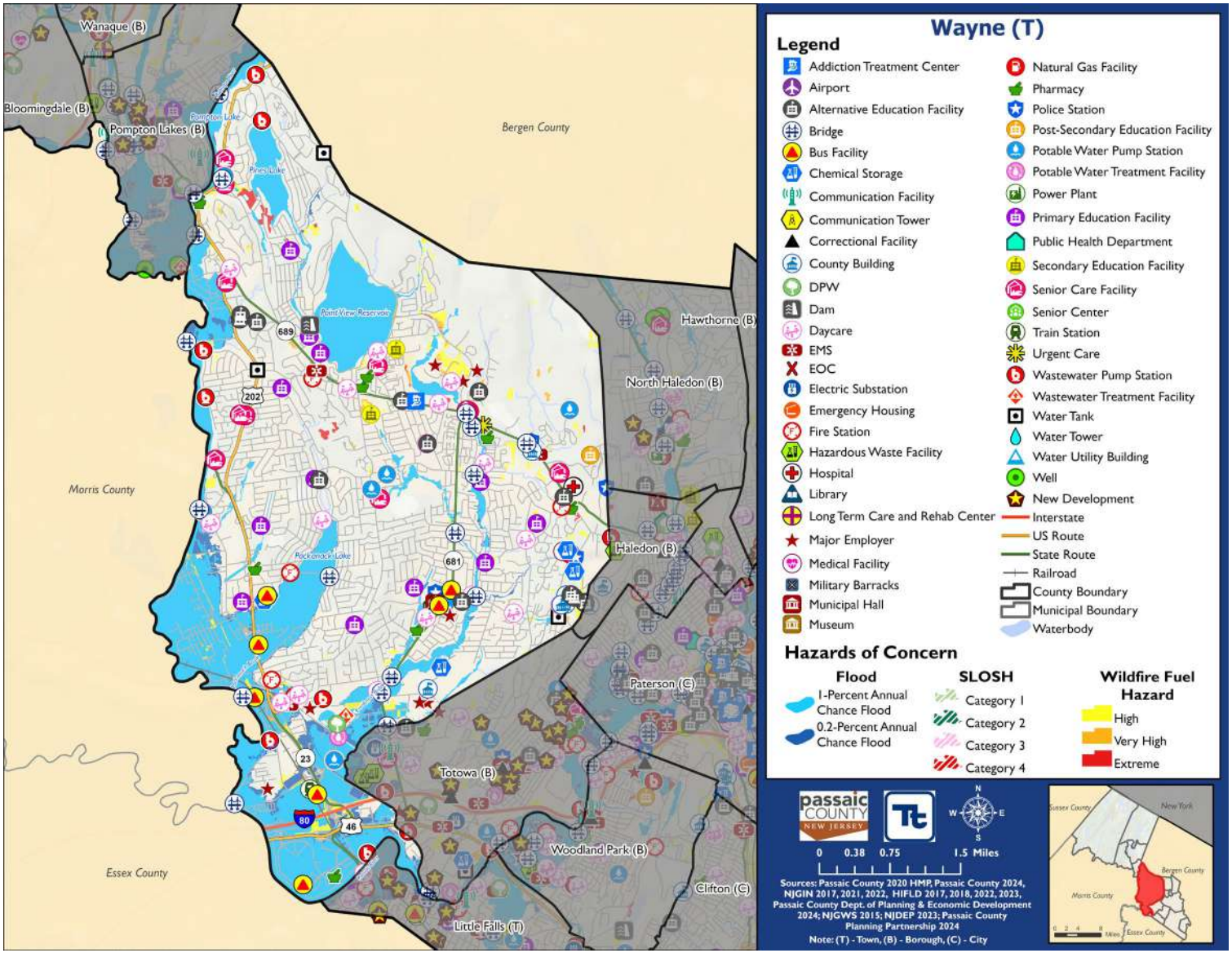


Figure 16-2. Wayne Flood and Wildfire Hazard Area Extent and Location Map



16.6.2 Hazard Event History

The history of natural and non-natural hazard events in Wayne is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 16-14 provides details on loss and damage in Wayne during hazard events since the last hazard mitigation plan update.

Table 16-14. Hazard Event History in Wayne

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Wayne
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Major flooding inundated homes throughout the flood zone. Wayne Police Marine Unit conducted nearly 100 evacuations from flooded homes and vehicles. Overtime costs needed for the response by Township personnel was $73, 747.
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	Wayne Twp experienced significant impact of COVID-19 due to our large number of Long-Term Care Facilities. Large quantities of personal protective equipment were purchased. A large vaccination clinic was set up requiring significant overtime and management.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	Serious flash flooding damaged multiple culverts and drainage basins in Wayne Twp requiring repairs. Numerous pieces of emergency response equipment was damaged and needed to be replaced at a cost over $300,000. Township overtime costs were $76,530.

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

16.6.3 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 Wayne.

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. Wayne 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 following:

- The Township updated the ranking for Geological Hazards from Low to Medium due to its location near the Ramapo Fault. This revision aligns with the Township's ranking for the relevant hazards during the last plan cycle.
- The Township updated the ranking for Flood from Medium to High based on historical occurrence of serious flooding and related damage.

Table 16-15 shows Wayne's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 16-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Geological Hazards	Medium
Extreme Temperature	Medium
Flood	High
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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

Table 16-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600024	Bridge	X	X
1600026	Bridge	X	X
1600040	Bridge	X	X
1600134	Bridge	X	X
1600135	Bridge	X	X
1600136	Bridge	X	X
1600138	Bridge	X	X
1600139	Bridge	X	X
1600140	Bridge	X	X

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600154	Bridge	X	X
1600344	Bridge	X	X
1600420	Bridge	X	X
1600023 (P) 1400273 (M)	Bridge	X	X
1600025 (P) 1400150 (M)	Bridge	X	X
CALVARY LEARNING CENTER	Daycare	X	X
Eagle Medical Services Incorporated	EMS	-	X
Emeritus At Wayne	Senior Care Facility	-	X
Farmingdale Sewer Pump Station	Wastewater Pump Station	X	X
LITTLE FOOTSTEPS CHILD DEVELOPMENT CENTER	Daycare	X	X
Minnisink Sewer Pump Station	Wastewater Pump Station	X	X
Mothers Park And Ride	Bus Facility	X	X
Mountain View Sewer Pump Station	Wastewater Pump Station	X	X
Mountain View-Wayne	Train Station	-	X
Mountainview Wastewater Treatment	Wastewater Treatment Facility	X	X
No Name Provided	Bus Facility	-	X
Rt. 23 Transit Center	Bus Facility	X	X
Sheffield Sewer Pump Station	Wastewater Pump Station	X	X
SHOPRITE	Pharmacy	X	X
Wayne Route 23 Transit Center	Train Station	-	X
Wayne Twp Memorial FA – Substation	EMS	X	X
West Belt Water Booster Station	Potable Water Pump Station	X	X
Willowbrook Mall	Bus Facility	X	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

In addition to critical facilities that are exposed to flooding, the Township of Wayne contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

16.6.4 Identified Issues

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

- 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 254 repetitive loss properties and 673 severe repetitive loss properties, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are municipally owned and located in the special flood hazard area:

- Highway Bridge: 1600024
- Highway Bridge 1600026
- Highway Bridge:1600040
- Highway Bridge 1600134
- Highway Bridge 1600135
- Highway Bridge 1600136
- Highway Bridge 1600138
- Highway Bridge 1600139
- Highway Bridge 1600140
- Highway Bridge 1600154
- Highway Bridge 1600344
- Highway Bridge 1600420
- Highway Bridge 1600023 (P) 1400273 (M)
- Highway Bridge 1600025 (P) 1400150 (M)
- CALVARY LEARNING CENTER
- Eagle Medical Services Incorporated
- Emeritus At Wayne
- Farmingdale Sewer Pump Station
- LITTLE FOOTSTEPS CHILD DEVELOPMENT CENTER
- Minnisink Sewer Pump Station
- Mothers Park And Ride
- Mountain View Sewer Pump Station
- Mountain View-Wayne
- Mountainview Wastewater Treatment
- No Name Provided
- Rt. 23 Transit Center
- Sheffield Sewer Pump Station
- SHOPRITE
- Wayne Route 23 Transit Center
- Wayne Twp Memorial FA - Substation
- West Belt Water Booster Station
- Willowbrook Mall

- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Township also has multiple high-hazard potential dams located in the Township, including Pines Lake Dam, Point View Dam, Packanack Lake Dam, Preakness Hilld C.C. Dam No.1, and Lionshead Lake Dam. These structures have the potential to impact those living nearby.
- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be

needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.

- 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.
- The Township is in need of overspill protection upgrades/protection and culvert lining upgrades at the Lionshead Lake Dam on Linden Road due to increasing high precipitation events.
- The Township is in need of overspill protection upgrades/protection and downstream protections at the Barbour Pond Dam due to increasing high precipitation events.
- The Township owns numerous high-water vehicles that do not have a protective covering so that they do not deteriorate in the elements.
- The West Belt Pump Station does not have a backup generator and cannot perform continuity of operations during a power outage.
- Fayette Avenue culvert over the Pompton tributary, Meadow Bridge and the culvert underneath are deteriorating which is leading to an increase in flooding along and around the bridge.
- The Township does not have a system to alert the Township of hazard events that are taking place in or around the Township that may impact life, property, and every day events.

16.7 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.

16.7.1 Past Mitigation Action Status

Table 16-17 indicates progress on the Township's mitigation strategy identified in the 2020 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.

16.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 16-17, Wayne did not identify additional mitigation efforts completed since the last HMP.

Table 16-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Township of Wayne-001			Township of Wayne Administration	The Township will complete installation of overspill protection, spillway upgrades and culvert lining at the Lionshead Lake Dam on Linden Road.	1.In Progress 2. Awaiting final NJDEP approval prior to bidding. Obtaining required easements from property owners.	1.Include 2. Keep as is 3. N/A
2020-Township of Wayne-002			NFIP Floodplain Administrator, supported by homeowners	After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes	1. In Progress 2. Buyouts are continuing	1.Include 2. Keep as is 3. N/A
2020-Township of Wayne-003			Township of Wayne Administration	The project will include the removal and replacement of the existing generator and associated electrical systems at the Township Wastewater Treatment Plant to provide emergency back-up power.	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete
2020-Township of Wayne-004			Township of Wayne Administration	The Township will complete installation of overspill protection and downstream protection at the Barbour Pond Dam.	1.In Progress 2. Going through procurement.	1.Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Township of Wayne-005			Engineering	Critical facilities that are not protected to the 500-year flood level will undergo feasibility assessments to determine appropriate flood protection actions and implement the most cost-effective options as funding becomes available.	1. In Progress 2. Project is in conceptual development to determine best path forward with available funding opportunities.	1.Include 2. Keep as is 3. N/A

16.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Wayne 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 Wayne 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 16-18 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 16-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 16-18. 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
Drought	X	X			X					X
Geological Hazards	X	X			X					X
Extreme Temperature	X	X			X					X
Flood	X	X	X		X	X			X	X
Severe Weather	X	X	X		X	X		X	X	X
Severe Winter Weather	X	X			X					X
Wildfire	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 16-19. 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**	
Action 2025-WayneT-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WayneT-002	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-WayneT-003	Dam Owner Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**13**	High
Action 2025-WayneT-004	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WayneT-005	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WayneT-006	Lionshead Lake Dam Protection	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-WayneT-007	Barbour Pond Dam Protection	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-WayneT-008	High Water Vehicle Shed	0	1	1	1	1	0	0	0	1	1	1	1	1	1	**10**	Medium
Action 2025-WayneT-009	West Belt Pump Station Generator	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
Action 2025-WayneT-010	Culvert and Bridge Replacement	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-WayneT-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Department of Building and Zoning
Hazard(s) of Concern:	Severe Storm, Flood
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 254 repetitive loss properties and 673 severe repetitive loss, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 900+ flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,4,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

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

Action 2025-WayneT-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers
Supporting Agencies:	Department of Building and Zoning
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge: 1600024 • Highway Bridge 1600026 • Highway Bridge:1600040 • Highway Bridge 1600134 • Highway Bridge 1600135 • Highway Bridge 1600136 • Highway Bridge 1600138 • Highway Bridge 1600139 • Highway Bridge 1600140 • Highway Bridge 1600154 • Highway Bridge 1600344 • Highway Bridge 1600420 • Highway Bridge 1600023 (P) 1400273 (M) • Highway Bridge 1600025 (P) 1400150 (M) • CALVARY LEARNING CENTER • Eagle Medical Services Incorporated • Emeritus At Wayne • Farmingdale Sewer Pump Station • LITTLE FOOTSTEPS CHILD DEVELOPMENT CENTER • Minnisink Sewer Pump Station • Mothers Park And Ride • Mountain View Sewer Pump Station • Mountain View-Wayne • Mountainview Wastewater Treatment • No Name Provided • Rt. 23 Transit Center • Sheffield Sewer Pump Station • SHOPRITE • Wayne Route 23 Transit Center • Wayne Twp Memorial FA - Substation • West Belt Water Booster Station • Willowbrook Mall
Description of the Solution:	The Township will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Township will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Township Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	1,2,5,8

Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.
Mitigation Category	Structure and Infrastructure Projects
CRS Category	Emergency Services, Property Protection
Priority	High

Alternatives:

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

Action 2025-WayneT-003. Dam Owner Partnership

Lead Agency:	Public Works
Supporting Agencies:	Dam Owner and Managers
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Township also has multiple high-hazard potential dams located in the Township, including Pines Lake Dam, Point View Dam, Packanack Lake Dam, Preakness Hilld C.C. Dam No.1, and Lionshead Lake Dam. These structures have the potential to impact those living nearby.
Description of the Solution:	The Township will work with the owners and managers of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by the Borough OEM and shared with the County OEM.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,3,4,8
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:	N/A
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	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-WayneT-004. Disaster Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	3,4,5,6
Benefits:	The action will result in increased quicker and more efficient cleanup after disaster events.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-WayneT-005. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	5,8
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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025-WayneT-006. Lionshead Lake Dam Protection

Lead Agency:	Dam Owner/Manager
Supporting Agencies:	Public Works, Building Division
Hazard(s) of Concern:	Dam Failure, Flood
Description of the Problem:	The Township is in need of overspill protection hardening upgrades/ increase of level of protection and culvert lining upgrades at the Lionshead Lake Dam on Linden Road due to increasing high precipitation events.
Description of the Solution:	The Township will complete installation of overspill protection, spillway upgrades and culvert lining at the Lionshead Lake Dam on Linden Road. The Township is currently awaiting final NJDEP approval prior to bidding and is obtaining required easements from property owners.
Estimated Cost:	TBD after approval
Potential Funding Sources:	FMA, HMGP, Township Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,7,8
Benefits:	This strengthens the protection of the community from the Lionshead Lake Dam.
Impact on Socially Vulnerable Populations:	These protections will protect the population in the inundation area from the Lionshead Lake Dam.
Impact on Future Development:	This protects and promotes additional development in the area.
Impact on Critical Facilities/Lifelines:	This protects critical facilities that are located within the dam inundation area.
Impact on Capabilities:	This action strengthens the capability of the County to be able to handle dam overspills.
Climate Change Considerations:	Climate Change is leading to an increase in frequency and intensity of precipitation events.
Mitigation Category	Structure and Infrastructure Project, Natural Systems Protection
CRS Category	Natural Resource Protection, Property Protection, Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not fix the actual problem
Redo the culvert along Linden Road	Does not fix the entirety of the problem

Action 2025-WayneT-007. Barbour Pond Dam Protection

Lead Agency:	Dam Owner/Manager
Supporting Agencies:	Public Works, Building Division
Hazard(s) of Concern:	Dam Failure, Flood
Description of the Problem:	The Township is in need of overspill protection upgrades/protection and downstream protections at the Barbour Pond Dam due to increasing high precipitation events.
Description of the Solution:	The Township will complete installation of overspill protection, spillway upgrades and culvert lining at the Barbour Pond Dam on Linden Road. The Township is currently awaiting final NJDEP approval prior to bidding and is obtaining required easements from property owners.
Estimated Cost:	TBD after approval
Potential Funding Sources:	FMA, HMGP, Township Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,7,8
Benefits:	This strengthens the protection of the community from the Barbour Pond Dam.
Impact on Socially Vulnerable Populations:	These protections will protect the population in the inundation area from the Barbour Pond Dam.
Impact on Future Development:	This protects and promotes additional development in the area.
Impact on Critical Facilities/Lifelines:	This protects critical facilities that are located within the dam inundation area.
Impact on Capabilities:	This action strengthens the capability of the County to be able to handle dam overspills.
Climate Change Considerations:	Climate Change is leading to an increase in frequency and intensity of precipitation events.
Mitigation Category	Structure and Infrastructure Project, Natural Systems Protection
CRS Category	Natural Resource Protection, Property Protection, Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Purchase moveable flood barriers	Does not fix the actual problem
	Redo the culvert along Linden Road	Does not fix the entirety of the problem

Action 2025-WayneT-008. High Water Vehicle Shed

Lead Agency:	Public Works
Supporting Agencies:	Building Division
Hazard(s) of Concern:	Dam Failure, Flood
Description of the Problem:	The Township owns numerous high-water vehicles that do not have a protective covering so that they do not deteriorate in the elements.
Description of the Solution:	The Township will build a shed to house the highwater vehicles and a command post where they will be housed and taken care of.
Estimated Cost:	TBD
Potential Funding Sources:	Township Budget
Implementation Timeline:	Within 5 Years
Goals Met:	5,6,7
Benefits:	The Township will be able to extend the life of their flood response assets.
Impact on Socially Vulnerable Populations:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The Township will be able to prolong the life of their highwater vehicles.
Climate Change Considerations:	Climate Change is leading to an increase in frequency and intensity of precipitation events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Preventative Measures
Priority	Medium

Alternatives:

Action	Evaluation
No Action	-
Buy new vehicles	Not cost effective

Action 2025-WayneT-009. West Belt Pump Station Generator

Lead Agency:	Public Works
Supporting Agencies:	Building Division
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The West Belt Pump Station does not have a backup generator and cannot perform continuity of operations during a power outage.
Description of the Solution:	The Township Public Works will oversee installation of a 1 megawatt fixed mounted diesel-powered generator and necessary electrical components to supply backup power to the West Belt Pump Station, located at 70 West Belt Parkway, Wayne, NJ 07470. Public Works will be responsible for maintenance and testing of the generator following installation.
Estimated Cost:	1 Million
Potential Funding Sources:	HMGP, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Township Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,6
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	Structure and Infrastructure Projects
CRS Category	Emergency Services
Priority	High

Alternatives:

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

Action 2025-WayneT-010. Culvert and Bridge Replacement

Lead Agency:	Public Works
Supporting Agencies:	Building Division
Hazard(s) of Concern:	Flood, Severe Storm
Description of the Problem:	Fayette Avenue culvert over the Pompton tributary, Meadow Bridge and the culvert underneath are deteriorating which is leading to an increase in flooding along and around the bridge.
Description of the Solution:	The Township will have an Engineer complete an engineering survey of culverts on Fayette Avenue and under Meadow Bridge that are undersized and contribute to flooding to determine the proper size necessary to provide stormwater capacity. The Township DPW will complete the necessary upsizing for those culverts noted to be undersized and will conduct a study to determine the correct sized bridge needed to replace Meadow Bridge after the culverts are upgraded. Once determined, the Township will replace the Bridge.
Estimated Cost:	TBD after study
Potential Funding Sources:	HMGP, CHIPS, operating budget
Implementation Timeline:	Within 5 Years
Goals Met:	4,5,8
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	• Transportation routes are more likely to remain open • Evacuation routes will remain intact. • Access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.
Impact on Capabilities:	Identifying the culverts and bridges that are at greatest risk of damage or failure can allow for resource staging to take place where the need is greatest ahead of a flood event.
Climate Change Considerations:	Climate change is likely to result in more frequent and severe rainfall events. This action upsizes culvert sizes to meet changing stormwater needs as the result of climate change.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Structural Project
Priority	High

Alternatives:

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

17. TOWN OF WEST MILFORD

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

17.1 HAZARD MITIGATION PLANNING TEAM

The Town of West Milford identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Town departments. The OEM Coordinator represented the community on the Passaic 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 17-1 summarizes Town officials who participated in the development of the annex and in what capacity. Additional documentation of the Town's planning activities through Planning Partnership meetings is included in Volume I.

Table 17-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Michael Moscatello, OEM Coordinator Address: 1480 Union Valley Road, West Milford, NJ 07480 Phone Number: (973) 349-7139 Email: Fireoffice2@westmilford.org	Name/Title: Michael Weber, OEM Deputy Coordinator Address: 1480 Union Valley Road, West Milford, NJ 07480 Phone Number: (973) 513-2639 Email: m.weber@wmtpd.org
National Flood Insurance Program Floodplain Administrator	
Name/Title: Michael Gerst, Zoning Address: 1480 Union Valley Road, West Milford, NJ 07480 Phone Number: (973) 728-2759 Email: zoning@westmilford.org	
Additional Contributors	
Name/Title: Michael Moscatello, OEM Coordinator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Timothy Ligus, Construction Official Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Michael Gerst, Zoning / Flood Plain Administrator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Robert Reider, Engineer Method of Participation: Provided key input in the planning process by completing worksheets	

17.2 COMMUNITY PROFILE

17.2.1 Brief History

The Township of West Milford became an incorporated municipality in 1834 from Pompton Township, which was part of Bergen County at the time. In 1937, the Township was incorporated into Passaic County.

17.2.2 Location

According to the U.S. Census Bureau, the Township has a total land area of 80.316 square miles, of which 75.09 square miles is land and 5.226 square miles is water.

17.2.3 Governing Body Format

West Milford is governed by the Mayor/Council/Administrator form of government under the Faulkner Act. In this format, an elected Mayor and Council shall govern a municipality with an appointed Municipal Administrator. The Council consists of the Mayor and six Council people. The Mayor serves a four-year term, and each Council member serves staggered three-year terms with two council seats up for election each year.

17.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for West Milford was 24,862, a 3.8 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 2020 U.S. Census indicates that 6.6 percent of the population is 5 years of age or younger, 18.8 percent is 65 years of age or older, 1.1 percent is non-English speaking, 3 percent is below the poverty threshold, and 8 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is $75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household income compared to the state average of $89,296, and is on par with the state average of 66 percent for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

17.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

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

17.3.1 Planning and Regulatory Capability and Integration

Table 17-2 summarizes the planning and regulatory tools that are available to West Milford.

Table 17-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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 94 – Unfit Buildings; Chapter 110 – Construction Codes, Uniform	Local	Building Department
How has or will this be integrated with the HMP and how does this reduce risk? Chapter 94: Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures. Chapter 110: There is hereby established in the Township a State Uniform Construction Code enforcing agency to be known as the "West Milford Township Uniform Construction Code Enforcing Agency," consisting of a Construction Official, building subcode official, plumbing subcode official, electrical subcode official, fire protection subcode official, and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the chief administrator of the enforcing agency.				

	Jurisdiction has this?	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
Zoning/Land Use Code	Yes	Chapter 500 - Zoning	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.				
Subdivision Code	Yes	Chapter 470 – Subdivision of Land and Site Plan Review	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? Provides for the regulation of land subdivision in the Township and to establish rules, regulations and standards governing such land subdivision in order to promote the public health, safety, convenience, and general welfare of the Township.				
Site Plan Code	Yes	Chapter 470 – Subdivision of Land and Site Plan Review	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county-by-county planning board and for the approval of those subdivisions affecting county road or drainage facilities. 40:27-6.10: Each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map.				
Stormwater Management Code	Yes	Chapter 325 – Stormwater Management, 2006	Local	DPW
How has or will this be integrated with the HMP and how does this reduce risk? The Stormwater Management Chapter contains restrictions to limit waste disposal in storm sewers, prohibit illicit connections, etc.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Flood Damage Prevention Ordinance	Yes	Chapter 158 – Flood Damage Prevention, 2020	Local	Planning and Zoning
How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this chapter 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 sound 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. The ordinance does not follow the latest model code coordinated ordinance from NJDEP and will require update.				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	Yes	Article 9, Section 15 – Office of Emergency Management	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? An Emergency Management Council, with powers and duties prescribed by general law, is hereby created in the Township and, within the limits of appropriation, shall establish an adequate organization to assist in supervising and coordinating the civilian defense and disaster control activities of the Township. The Council shall consist of no more than 15 persons, who shall be appointed by and who shall serve at the pleasure of the Council. They shall receive no compensation.				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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	Highlands Preservation Area Master Plan, 2012	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? This Plan Element further establishes the open space and environmental preservation goals and objects set forth in the Master Plan and Open Space Plan. In addition to the similar goals between the plans, this Plan Element also promotes the remediation and redevelopment of Brownfield sites where applicable, in place of new developments. The Element also addresses the preservation of the natural environment for stormwater and flood water retention and the difficulties with development on steep slopes and carbonate formations. The West Milford Planning Board adopted an Amendment to the Master Plan Land Use Element on October 28, 2010 with a limited focus to rezone a higher density residential district to a low-density density zone. The Township's Master Plan Land Use Plan Element was updated in December 2017 as a basis for a thorough review and revision of the Township's zone plan and zoning ordinance. Objectives include: • Provide methods for reducing storm water runoff and its impact through best storm water management practices • Appropriately zone vacant land adjacent to open bodies of water for minimal development impact • Protect areas of high groundwater recharge value				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Pollution Prevention Plan	Yes	West Milford Stormwater Pollution Prevention Plan	Local	DPW/Engineering
How has or will this be integrated with the HMP and how does this reduce risk? The plan describes long-term operation and maintenance measures for existing and future stormwater facilities. It also identifies specific stormwater management measures to decrease the impact of existing development. The goals of the plan include reducing flood damage, including life and property (same goal as the HMP); minimize any increase in stormwater runoff from new development; assure the adequacy of existing and proposed culverts and bridges and other in-stream structures. The plan indicates the Township inspects high-risk areas after every major rainstorm.				
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Town of West Milford Emergency Operations Plan	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? This plan establishes procedures to follow during hazard events to optimize response capabilities and minimize potential damage or harm.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

17.3.2 Development and Permitting Capability

Table 17-3 summarizes the capabilities of West Milford to oversee and track development.

Table 17-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 N/A	- Building Department/ Planning Board/ZBA/ Environmental Commission/ Highlands Commission Approval
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	-
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes N/A	- Buildable land inventory (2009). Opportunity for future development is limited by environmental factors/Highlands.
Describe the level of buildout in your jurisdiction.	N/A	Intersects with the Highlands Preservation Area, when limits the ability to develop land.

17.3.3 Administrative and Technical Capability

Table 17-4 summarizes potential staff and personnel resources available to West Milford and their current responsibilities that contribute to hazard mitigation.

Table 17-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	The Planning Board shall have the powers listed below in addition to other powers established by law: (a) Make, adopt and from time to time amend the Township Master Plan for the physical development of the Township, including any areas outside its boundaries which, in the Planning Board's judgment, bear essential relation to the planning of the Township. (b) Subdivision control and site plan review and approval pursuant to this Land Development Ordinance. (c) Review and comment on the Official Map of the Township prior to its adoption by the Township Council, pursuant to N.J.S.A. 40:55D-25a. (d) Participate in the preparation and review of programs or plans required by state or federal law or regulation. (e) Assemble data on a continuing basis as part of a continuous planning process. (f) Annually prepare a program of municipal capital improvements projects projected over a term of six years and amendments thereto and recommend same to the Township Council. (g) Consider and report to the Township Council within 35 days after referral regarding any proposed development regulation submitted to it and also pass upon other matters specifically referred to the Planning Board by the Township Council.
Zoning Board of Adjustment	Yes	The Board of Adjustment shall have the power to: (a) Hear and decide appeals where it is alleged by the appellant that there is error in any order, requirement, decision or refusal made by the administrative officer based or made in the enforcement of any provision of the Land Development Ordinance. (b) Hear and decide, in accordance with the provisions of the Land Development Ordinance, requests for interpretation of the Official Map or Chapter 500, Zoning, or for decisions upon other special questions upon which the Board is authorized to pass by any ordinance or Official Map. (c) Variance of area or yard requirements.
Planning Department	Yes	One of the Comprehensive Planning Division's main functions is to accept development applications for either the Planning Board or Zoning Board of Adjustment. The applications are reviewed for compliance with Township ordinances and the Planning staff makes recommendations as to the plan's feasibility to the respective Boards.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	The Environmental Commission oversees the Wetlands Environmental Center on Maple Road, which is maintained by the Township. We also have collected downloadable information on the impact of our day-to-day activities on stormwater quality and other water issues. The Commission applies for and receives grants from various agencies, among which are the Association of New Jersey Environmental Commissions (ANJEC), the New Jersey Department of Environmental Protection Division of Watershed Management, as well as the Division of Forestry.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	The Economic Development Commission serves as an advisory body to the Township Council and strive to promote economic development activities within the Township.
Public Works/Highway Department	Yes	The Division of Public Property is responsible for maintenance of all public owned buildings. The Division of Streets and Roads maintains and repairs approximately 160 miles of Township streets and roads, including street sweeping, installation of street signs, pavement markings, road repairs, and roadside brush cutting for sight distance. This division is also responsible for installation and maintenance of drainage systems including storm sewers (catch basins). The Division of Snow Removal is responsible for winter storm operations including snow plowing and deicing of roadways. The Division of Fleet Maintenance is responsible for maintenance of all Township vehicles and equipment including Police, DPW and Fire apparatus.
Construction/Building/Code Enforcement Department	Yes	The Building Department is responsible for the enforcement of the Uniform Construction Code as required by the State of New Jersey, as well as for the enforcement of municipal zoning regulations.
Emergency Management/Public Safety Department	Yes	Police Department and Fire Prevention The Fire Marshal and Fire Inspectors are responsible for the enforcement of the New Jersey State Uniform Fire Code, National Fire Protection Association Standards, and Local Ordinances. As well as providing routine patrol, the Police Department has specialized units. The units are a Specialized Operations Unit, Firearms Instructors, Alcohol Beverage Control Unit and an Accident Investigation Unit.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	No	-
Mutual aid agreements	Yes	Police, Fire, EMS, OEM
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	Yes	The Historic Preservation Commission promotes the protection of certain architecturally, historically and archaeologically significant structures, sites or districts for the general welfare of its citizenry.
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	No	-
Engineers or professionals trained in building or infrastructure construction practices	No	-
Planners or engineers with an understanding of natural hazards	No	-
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	Yes	Building Dept, Fire Prevention, OEM
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Engineer and IT using GIS for fire inspections
Staff that work with socially vulnerable populations or underserved communities	No	-
Environmental scientists familiar with natural hazards	No	-
Surveyors	No	-
Emergency manager	Yes	Municipal Emergency Management Coordinator
Grant writers	Yes	Township has contracted with a grant writer to seek and write grants for all agencies.
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

17.3.4 Fiscal Capability

Table 17-5 summarizes financial resources available to West Milford.

Table 17-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	No
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	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No

17.3.5 Education and Outreach Capability

Table 17-6 summarizes the education and outreach resources available to West Milford.

Table 17-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	Director of Public Safety or Designee
Personnel skilled or trained in website development	Yes	IT Administrator
Hazard mitigation information available on your website	Yes	Links to FEMA flood maps/NJOEM
Social media for hazard mitigation education and outreach	Yes	Facebook
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Environmental Commission, Lakes Committee
Warning systems for hazard events	Yes	Nixle, Reverse911, Municipal Website, social media, local TV station
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’s Cable TV Commission coordinates the dissemination of municipal information and events through the Township of West Milford's public, educational and governmental access cable channel, West Milford TV 77.

17.3.6 Community Classifications

Table 17-7 summarizes classifications for community programs available to West Milford.

Table 17-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	March 2014
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	6	-
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	Yes	-	February 2009
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

17.3.7 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 17-8 summarizes the adaptive capacity for each identified hazard of concern and the Town’s capability to address related actions using the following classifications:

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

Table 17-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological Hazards	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

17.4 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 17-1 is responsible for maintaining this information.

17.4.1 NFIP Statistics

Table 17-9 summarizes the NFIP policy and claim statistics for West Milford.

Table 17-9. West Milford NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	62
Total Loss Payments	$1,297,068
# Repetitive Loss Properties (NFIP definition)	10
# Repetitive Loss Properties (FMA definition)	3
# Severe Repetitive Loss Properties (NFIP definition)	3
# Severe Repetitive Loss Properties (FMA definition)	3

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

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

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

Source: NJOEM 2024

17.4.2 Flood Vulnerability Summary

Table 17-10 provides a summary of the NFIP program in West Milford.

Table 17-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Belchers Creek
Do you maintain a list of properties that have been damaged by flooding?	No
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
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Building Department Review & Inspections
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Unknown

NFIP Topic	Comments
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	Unknown
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?	Zoning 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?	No
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?	Yes Floodplain Management Training
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Permit reviews, inspections, engineering
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Building Department review & inspections
What are the barriers to running an effective NFIP program in the community, if any?	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)?	Unknown
What is the local law number or municipal code of your flood damage prevention ordinance?	Ch. 158 Section 158-1-20
What is the date that your flood damage prevention ordinance was last amended?	2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Does not meet, but will once the Town adopts the Code Coordinated Ordinance
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Planning & Zoning consider storm water & FHH zones
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	No

17.5 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 17-11 through Table 17-13.

Table 17-11. 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
2020				
Total Permits	10	0	0	10
Permits within SFHA	0	0	0	0
2021				
Total Permits	12	0	0	12
Permits within SFHA	0	0	0	0
2022				
Total Permits	15	0	0	15
Permits within SFHA	0	0	0	0
2023				
Total Permits	12	0	1	13
Permits within SFHA	0	0	0	0

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

Table 17-12. Recent Major Development and Infrastructure from 2017 to Present

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

** Only location-specific hazard zones or vulnerabilities identified.*

Table 17-13. 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
None Identified					

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

17.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Town are shown in Figure 17-1 through Figure 17-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which West Milford has significant exposure. The maps show the location of potential new development, where available.

Figure 17-1. West Milford NEHRP Hazard Area Extent and Location Map

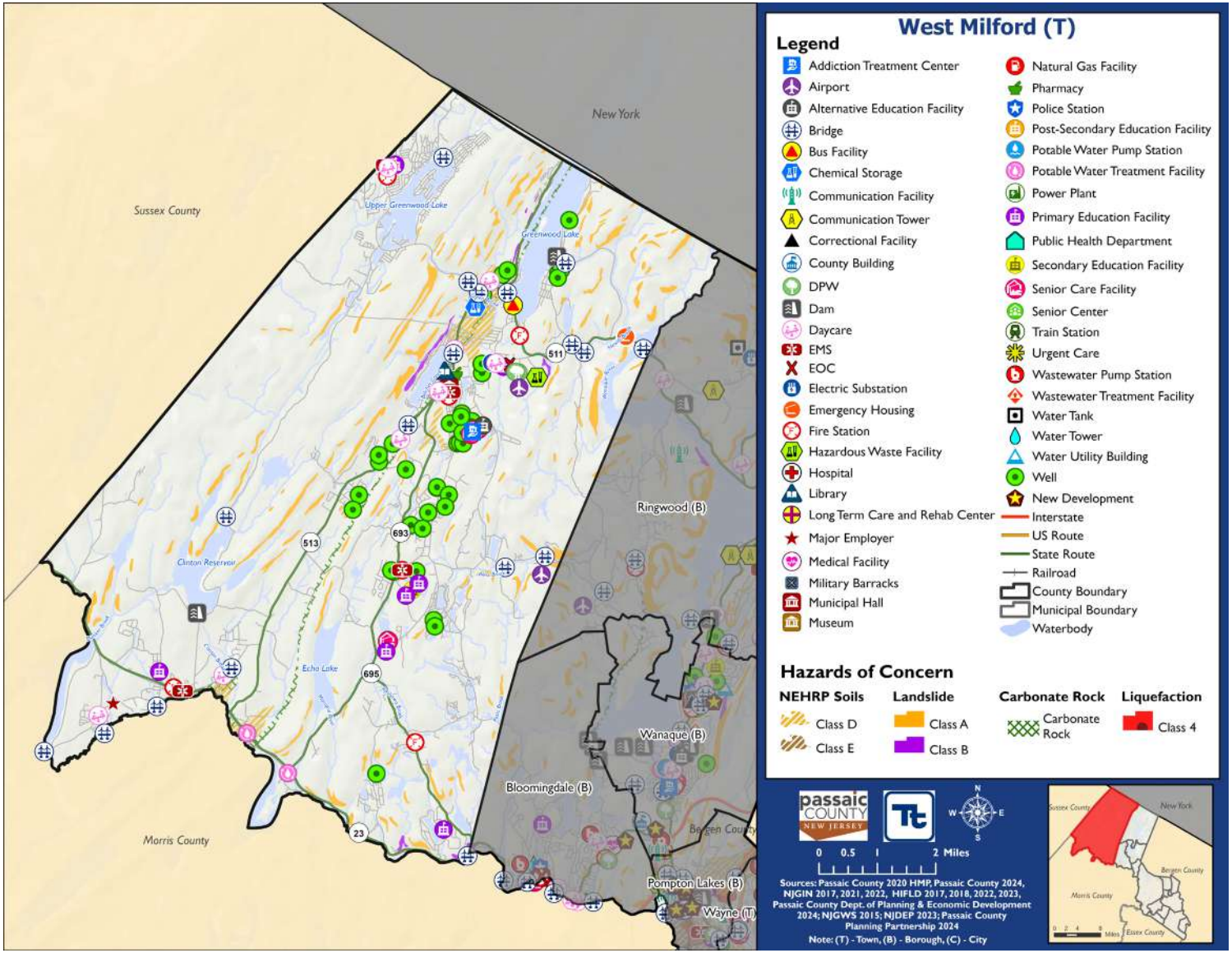
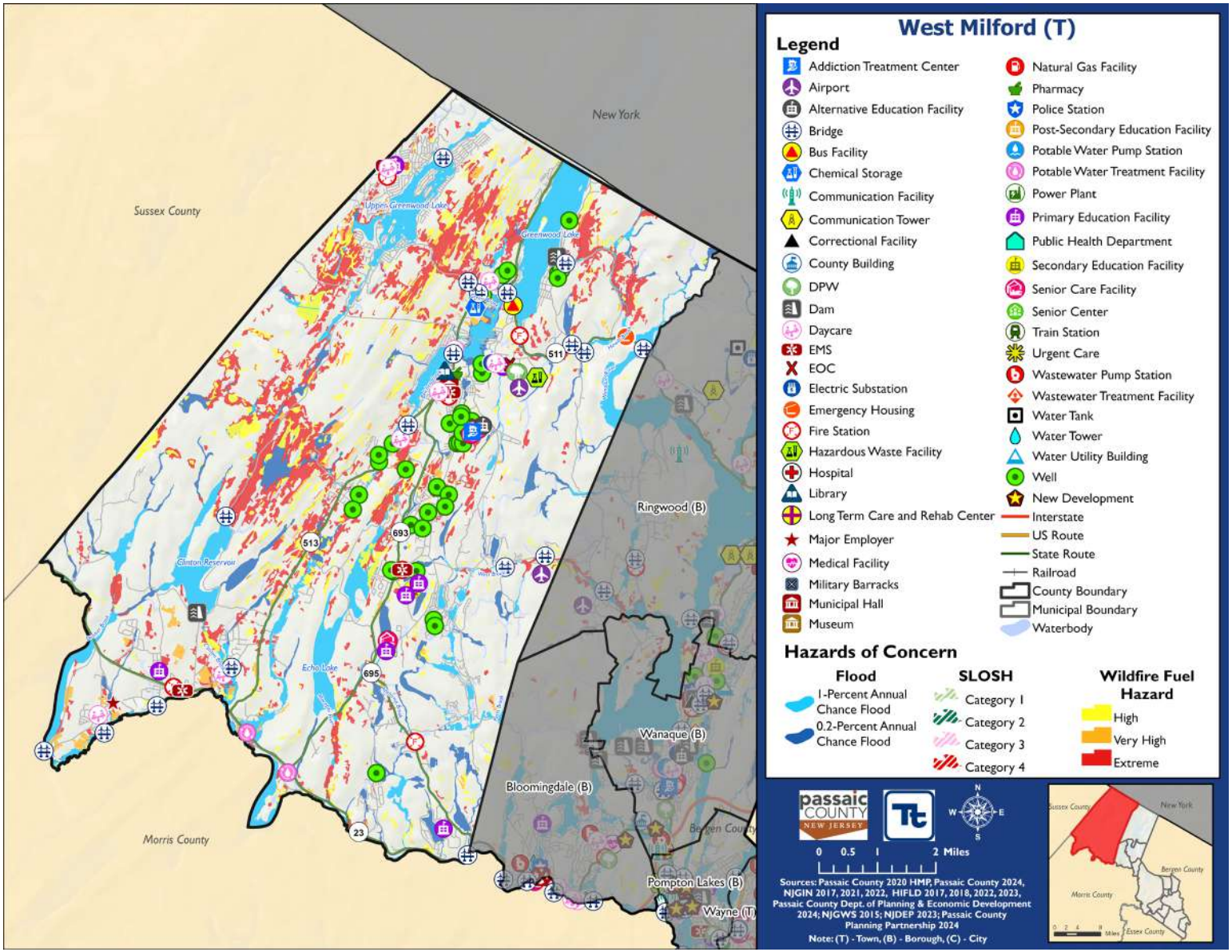


Figure 17-2. West Milford Flood and Wildfire Hazard Area Extent and Location Map



17.6.2 Hazard Event History

The history of natural and non-natural hazard events in West Milford is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 17-14 provides details on loss and damage in West Milford during hazard events since the last hazard mitigation plan update.

Table 17-14. Hazard Event History in West Milford

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in West Milford
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	No major closures. Some roadway closures due to minor flooding.
April 12-15, 2023	Fire	N/A	Kanouse Mountain wildfires. 972 + acres of forest land burned. Fire resulted in some residential evacuations and over 100 livestock animals.	Roadway closures, 972+ acres of wildland destroyed, large amount of Local, County, and state resources utilized.
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	Temporary closure of non-essential municipal offices. Township sustained some revenue losses. Some essential personnel out due to being infected. Local state of emergency declared. Costs incurred for PPE and decontamination supplies for all municipal services.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	The Township had numerous roadway closures.

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

17.6.3 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 West Milford.

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. West Milford 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 Town indicated the following:

- The Town updated the Wildfire ranking from Low to Medium due to the significant amount of wildfire fuel present in the jurisdiction. Additionally, in November 2024, during the planning process, the Town of West Milford was affected by the Jennings Creek Wildfire, which spread rapidly due to extremely dry conditions at the time.

Table 17-15 shows West Milford's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 17-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Geological Hazards	Low
Extreme Temperature	Medium
Flood	Medium
Severe Weather	Medium
Severe Winter Weather	Medium
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 17-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

In addition to critical facilities that are exposed to flooding, the Town of West Milford contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

Table 17-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600049	Bridge	X	X
1600175	Bridge	X	X
1600247	Bridge	X	X
1600255	Bridge	X	X
1600368	Bridge	X	X
1600430	Bridge	X	X
1600432	Bridge	X	X
1600446	Bridge	-	X
1600460	Bridge	X	X
1600467	Bridge	X	X
1600033 (P)1400140 (M)	Bridge	X	X
1600036 (P)1400323 (M)	Bridge	X	X
1600037 (P)1400957 (M)	Bridge	X	X
1600038 (P)1400956 (M)	Bridge	X	X
Well P2	Well	-	X
Well T3	Well	-	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

17.6.4 Identified Issues

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

- 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 13 repetitive loss properties and six severe repetitive loss properties, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are municipally owned and located in the special flood hazard area:
  - Highway Bridge:1600049
  - Highway Bridge:1600175
  - Highway Bridge:1600247
  - Highway Bridge:1600255
  - Highway Bridge:1600368
  - Highway Bridge:1600430
  - Highway Bridge:1600432
  - Highway Bridge:1600446
  - Highway Bridge:1600460

- Highway Bridge:1600467
- Highway Bridge:1600033 (P)1400140 (M)
- Highway Bridge:1600036 (P)1400323 (M)
- Highway Bridge:1600037 (P)1400957 (M)
- Highway Bridge:1600038 (P)1400956 (M)
- Well P2
- Well T3

- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- 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.
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Town also has multiple high-hazard potential dams located in the Town, including: the Echo Lake Spillway Dam, Greenwood Lake Dam, River Wall Dam, Upper Mount Glen Lake Dam, Macopin Reservoir Dam, Green Turtle Pond Dam, Upper Greenwood Lake Dam, Lookover Lake Dam, West Milford Lake Dam, Charlotteburg Dam, Gordon Lakes Dam, Echo Lake Intake Dam, Clinton Reservoir Dam, Lake Arcadia Dam #1, Pinecliff Lake Dam, and Lindy's Dam. These structures have the potential to impact those living nearby.
- The Town has many high hazard potential dams as well as other dams that may lead to flooding, property damage, and loss of life in a potential dam failure situation.
- The bridge condition rating is poor, and the streambank is eroding and may need to be reconstructed. Project has been delayed due to legal issues.
- The Town has some critical facilities that do not have permanent backup power and the Town needs to compile a list of facilities that need backup power. The Town also needs to install a generator at the Rec Center so it can continue to operate as a hazard shelter for the Town.
- The Town has not updated NJDEP's model Code Coordinated Ordinance and will need to adopt it to comply with the NFIP.

17.7 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.

17.7.1 Past Mitigation Action Status

Table 17-17 indicates progress on the Town's mitigation strategy identified in the 2020 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.

17.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 17-17, West Milford did not identify additional mitigation efforts completed since the last plan.

Table 17-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-West Milford-001		Flood	Township Emergency Manager	Perform a feasibility study to determine the vulnerability of properties in the dam inundation area as well as potential mitigation actions and implement the most cost-effective solution.	1.No Progress 2. This has not been completed; no available funding through capital budget. This is still needed.	1.Include 2. Flooding, property damage, and loss of life potential in the event of a dam failure 3. N/A
2020-West Milford-002		Flood	Township Engineer	Harden the bridge and implement streambank stabilization to reduce or eliminate the potential increased flooding.	1.In Progress 2. Presently addressing issues with DEP permits and approvals.	1.Include 2. Bridge condition rating is poor. Streambank is eroding and may need to be reconstructed. Bridge is under capital improvement. Project is delayed due to legal issues. This is increasing potential for flooding of nearby structures 3. N/A

Project Number	Project Name	Hazards 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.
2020-West Milford-003			NFIP Floodplain Administrator	Conduct outreach to flood-prone property owners, including RL/SRL property owners and in the vicinity of Belcher's Creek, and provide information on mitigation acquisitions. After interest is identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition in the flood prone area that experience frequent flooding (high risk areas).	1.No Progress 2. This has not been completed; no available funding through capital budget. This is still needed.	1.Include 2. Township has flood prone properties of which some are repetitive loss properties including homes near Belchers Creek that experience intermittent flooding 3. N/A

Project Number	Project Name	Hazards 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.
2020-West Milford-004		Flood	Township Engineer	Evaluate the current condition of the dam and determine what mitigation is needed to increase life/health/safety and property protection should there be a failure. Identify mitigation alternatives and apply for funding, if needed, to implement and harden the dam.	1.In Progress 2. This has not been completed; no available funding through capital budget. This is still needed.	1.Include 2. Dam failure would lead to life safety and flood issues. 3. N/A
2020-West Milford-005		Flood	Township Engineer	Increase the capacity of the drainage system on Cherry Ridge Road to alleviate roadway flooding during heavy rain events	1.No Progress 2. This has not been completed; no available funding through capital budget. This is still needed.	1.Discontinue 2.N/A 3. This is no longer an issue for the Township.
2020-West Milford-006		All Hazards	Township Engineer; Emergency Coordinator	Install permanent generators at critical facilities and lifelines including the Rec Center (all-hazard shelter)	1.In Progress 2. Still waiting for additional parts and equipment.	1.Include 2. Critical facilities and lifelines need permanent generators to ensure continuity of operations at the time of disaster. This includes the Rec Center which is the all-hazard shelter for the Township 3. N/A

17.7.3 Proposed Hazard Mitigation Actions for the HMP Update

West Milford 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 West Milford would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in Town priorities.

Table 17-18 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 17-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.

Table 17-18. 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
Drought	X	X			X					X
Geological Hazards	X	X			X					X
Extreme Temperature	X	X			X					X
Flood	X	X			X	X			X	X
Severe Weather	X	X			X	X				X
Severe Winter Weather	X	X			X					X
Wildfire	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 17-19. 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**	
Action 2025-WestMilfordT-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WestMilfordT-002	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-WestMilfordT-003	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WestMilfordT-004	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WestMilfordT-005	Dam Owner Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**13**	High
Action 2025-WestMilfordT-006	Dam Inundation Feasibility Study	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
Action 2025-WestMilfordT-007	Bridge Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	12	High
Action 2025-WestMilfordT-008	Generators at Critical Facilities	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-WestMilfordT-001. Repetitive Loss Property Mitigation

Lead Agency:	Planning
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Severe Storm, Flood
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 13 repetitive loss properties and six severe repetitive loss properties, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:

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

Action 2025- WestMilfordT -002. Critical Facilities in the Floodplain

Lead Agency:	Planning
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge:1600049 • Highway Bridge:1600175 • Highway Bridge:1600247 • Highway Bridge:1600255 • Highway Bridge:1600368 • Highway Bridge:1600430 • Highway Bridge:1600432 • Highway Bridge:1600446 • Highway Bridge:1600460 • Highway Bridge:1600467 • Highway Bridge:1600033 (P)1400140 (M) • Highway Bridge:1600036 (P)1400323 (M) • Highway Bridge:1600037 (P)1400957 (M) • Highway Bridge:1600038 (P)1400956 (M) • Well P2 • Well T3
Description of the Solution:	The Township will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Township will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Township Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	2,5,6
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.
Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.

Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Emergency Services, Property Protection	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2025-WestMilfordT-003. Disaster Debris Management Plan

Lead Agency:	Planning
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-WestMilfordT-004. Substantial Damage Management Plan

Lead Agency:	Planning
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025-WestMilfordT-005. Dam Owner Partnership

Lead Agency:	Public Works
Supporting Agencies:	Dam Owner and Managers
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Township also has multiple high-hazard potential dams located in the Township, including: the Echo Lake Spillway Dam, Greenwood Lake Dam, River Wall Dam, Upper Mount Glen Lake Dam, Macopin Reservoir Dam, Green Turtle Pond Dam, Upper Greenwood Lake Dam, Lookover Lake Dam, West Milford Lake Dam, Charlotteburg Dam, Gordon Lakes Dam, Echo Lake Intake Dam, Clinton Reservoir Dam, Lake Arcadia Dam #1, Pinecliff Lake Dam, and Lindy's Dam. These structures have the potential to impact those living nearby.
Description of the Solution:	The Township will work with the owners and managers of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by the Township OEM and shared with the County OEM.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	5,9
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:	N/A
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	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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-WestMilfordT-006. Dam Inundation Feasibility Study

Lead Agency:	Planning
Supporting Agencies:	Dam Owners and Managers
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	The Township has many high hazard potential dams as well as other dams that may lead to flooding, property damage, and loss of life in a potential dam failure situation.
Description of the Solution:	The Township will perform a feasibility study to determine the vulnerability of properties in the dam inundation area as well as potential mitigation actions and implement the most cost-effective solution.
Estimated Cost:	TBD
Potential Funding Sources:	HMGP, FMA, Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,7,9
Benefits:	This action prepares the Township for how to be better prepared in the event of a dam failure.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be greater impacted by a dam failure.
Impact on Future Development:	Any incoming development would be notified of what dam inundation zones they may be impacted by.
Impact on Critical Facilities/Lifelines:	Any incoming development would be able to be better prepared in the event of a specific dam failure incident.
Impact on Capabilities:	This action would strengthen the Township's ability to handle dam failure.
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	Education and Awareness Programs
CRS Category	Public Information, Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not prepare people for what to do when a specific dam breaks
Rely on FEMA/State	Delay in response

Action 2025-WestMilfordT-007. Bridge Mitigation

Lead Agency:	Planning
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Flood
Description of the Problem:	The bridge condition rating is poor, and the streambank is eroding and may need to be reconstructed. Project has been delayed due to legal issues.
Description of the Solution:	The Township will harden the bridge to increase level of protection and implement streambank stabilization to reduce or eliminate the potential increased flooding.
Estimated Cost:	TBD after Study
Potential Funding Sources:	HMGP, Township budget
Implementation Timeline:	Within 5 Years
Goals Met:	5,8
Benefits:	The Township will no longer have to be concerned with a failing bridge.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be disproportionately impacted by the out bridge.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	The bridge may be a key access point to critical facilities and for emergency vehicles.
Impact on Capabilities:	This action strengthens the Township's capability to handle flooding events.
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	Structure and Infrastructure Projects
CRS Category	Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Rebuild and elevate bridge	May not be needed
Purchase moveable flood barriers	Does not solve position

Action 2025-WestMilfordT-008. Generators at Critical Facilities

Lead Agency:	Planning
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The Township has some critical facilities that do not have permanent backup power and the Town needs to compile a list of facilities that need backup power. The Township also needs to install a generator at the Rec Center so it can continue to operate as a hazard shelter for the Township.
Description of the Solution:	The Township will conduct a generator feasibility study to determine the right sized generator needed at Rec Center. The Township will install permanent generators at critical facilities, including the Rec Center, so that they may maintain a continuity of operations.
Estimated Cost:	TBD after generator study
Potential Funding Sources:	HMGP
Implementation Timeline:	Within 5 Years
Goals Met:	1,5,6,7
Benefits:	This action ensures the continuity of operations during power outages.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations may be reliant on the Rec Center as a hazard shelter.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	This action is dealing with critical facilities.
Impact on Capabilities:	This action improves the capabilities of the critical facilities during the power outages.
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	Structure and Infrastructure Projects
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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.

18. BOROUGH OF WOODLAND PARK

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

18.1 HAZARD MITIGATION PLANNING TEAM

The Borough of Woodland Park identified primary and alternate HMP points of contact and developed this plan over the course of several months, with input from many Borough departments. The OEM Coordinator represented the community on the Passaic 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 18-1 summarizes Borough officials who participated in the development of the annex and in what capacity. Additional documentation of the Borough's planning activities through Planning Partnership meetings is included in Volume I.

Table 18-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Captain Joseph Domicolo, OEM Coordinator Address: 5 Brophy Lane, Woodland Park, NJ 07424 Phone Number: (973) 345-8116 Email: jdomicolo@wpnj.us	Name/Title: Steven DiPaola, OEM Deputy Coordinator Address: 5 Brophy Lane, Woodland Park, NJ 07424 Phone Number: (201) 314-1625 Email: sd2310@att.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Allan Burghardt, Floodplain Administrator Address: 5 Brophy Lane, Woodland Park, NJ 07424 Phone Number: (973) 354-8208 Email: aburghardt@wpnj.us	
Additional Contributors	
Name/Title: Captain Joseph Domicolo, OEM Coordinator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: Allan Burkhardt, Floodplain Administrator Method of Participation: Provided key input in the planning process by completing worksheets	
Name/Title: John Pietrowski, DPW Superintendent Method of Participation: Provided key input in the planning process by completing worksheets	

18.2 COMMUNITY PROFILE

18.2.1 Brief History

The area of Woodland Park was once the West Park section of the Township of Little Falls. In the early 1900s, residents in this section felt they were treated unfairly as compared residents in Little Falls. In 1914, the residents of West Park successfully became an independent municipality, West Paterson. In 2009, the Borough's name was changed from West Paterson to Woodland Park after nearly 20 years of residents pushing for the change (Borough of Woodland Park n.d.).

18.2.2 Location

According to the U.S. Census Bureau, the Borough has a total land area of 3.115 square miles, of which 2.964 square miles is land and 0.151 square miles is water. Highway access is provided by Interstate 80 in the northern edge of town and U.S. 46 along the southern border. Natural features form the Borough's other two borders: Garret Mountain on the east and the Passaic River on the west.

18.2.3 Governing Body Format

The Borough is governed under the Small Municipality Plan form of government under the Faulkner Act. This form of government involves a staggered term system for the Mayor and six Council members. The Mayor serves a three-year term and has executive power, allowing them to appoint department heads with Council approval. The Councilmembers have three-year terms and work with the Mayor to adopt a municipal budget.

18.2.4 Population and Social Vulnerability

According to the U.S. Census, the 2020 population for Woodland Park was 13,484, a 14.1 percent increase 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 2022 American Community Survey indicates that 7 percent of the population is 5 years of age or younger, 21 percent is 65 years of age or older, 7.9 percent is non-English speaking, 10.3 percent is below the poverty threshold, and 8.1 percent is considered disabled.

ALICE in Passaic County

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 32 percent of the 177,063 households in Passaic County are ALICE households (compared to the state average of 26 percent). The median household income in Passaic is

$75,430, and the County sees a labor force participation rate of 66 percent. Passaic County faces low household income compared to the state average of $89,296, and is on par with the state average of 66 percent for labor force participation rates. 15 percent of Passaic households live in poverty, which exceeds the state average of 10 percent.

18.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Woodland Park 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 Woodland Park to identify opportunities for integrating mitigation concepts into ongoing Borough procedures.

18.3.1 Planning and Regulatory Capability and Integration

Table 18-2 summarizes the planning and regulatory tools that are available to Woodland Park.

Table 18-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this?	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	NJAC 5:23-3.14; International Building Code – New Jersey Edition, 2021; NJAC 5:24-3.14; Chapter 17 – Building and Housing	State and Local	Construction Official, Department of Inspections
How has or will this be integrated with the HMP and how does this reduce risk? Permits to the fullest extent feasible the use of modern technical methods, devices and improvements, including premanufactured systems, consistent with reasonable requirements for the health, safety and welfare of occupants or users of buildings and structures. Chapter 17: It is hereby established in the Borough of Woodland Park a State Uniform Construction Code Enforcing Agency to be known as the Department of Inspections, consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official, two (2) Assistant Fire Protection Subcode Officials, and such other Subcode Officials for such additional Subcode Officials as the Commissioner of the Department of Community Affairs, State of New Jersey, shall hereafter adopt as part of the State Uniform Construction Code. The Construction Official shall be the Chief Administrator of the Enforcing Agency.			
Zoning/Land Use Code	Yes	Chapter 22 – Zoning	Local	Zoning Officer
How has or will this be integrated with the HMP and how does this reduce risk? For the purpose of limiting and restricting to specified districts, and regulating therein buildings and lands and structures according to their construction and the nature and extent of their use, and to regulate and restrict the height, number of stories, and size of buildings and other structures, the percentage of lot that may be occupied, the size of yards, courts and other open spaces, the density of population and the location and use and extent of use of lands, buildings and structures for trade, industry, residence of other purposes, the municipality is hereby divided into districts as hereafter set forth. The land use pattern as set forth is based upon the Land Use Element of the Master Plan and is intended to effectuate the Master Plan enacted in order to encourage municipal action to guide the appropriate development of land in a manner which will promote the public health, safety, morals, and general welfare of the public.				
Subdivision Code	Yes	Chapter 33 – Subdivision and Site Plan, 2017	Local	M&C, Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of the ordinance is to provide rules, regulations, and standards to guide land subdivision in the municipality in order to promote the public health, safety, convenience and general welfare of the municipality. It is administered to insure the orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities, and services.				
Site Plan Code	Yes	Chapter 33 – Subdivision and Site Plan, 2017	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? No building or structure shall be erected, altered or expanded on any lot in any district requiring site plan approval, or any land put to a nonresidential use, and no building permit or sanitary permit shall be issued in connection with any use of such lot, except in accordance with all the regulations of this article and in accordance with the site plan for such lot reviewed by the Planning Board in light of the standards set forth in this chapter.				

	Jurisdiction has this?	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
Stormwater Management Code	Yes	Chapter 29 – Stormwater Compliance	Local	Police Department, Code Enforcement, Public Works
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this section is to prohibit the spilling, dumping, or disposal of materials other than stormwater into the municipal separate storm sewer system (MS4) operated by the Borough of Woodland Park, so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
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

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?
- 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?

This law went into effect in March 2024 during the planning process of this plan update.

	Jurisdiction has this?	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Environmental Protection Ordinance(s)	Yes	Chapter 30 – Environmental Regulations	Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? To regulate the outdoor application of fertilizer so as to reduce the overall amount of excess nutrients entering waterways, thereby helping to protect and improve surface water quality. This section does not apply to fertilizer application on commercial farms.				
Flood Damage Prevention Ordinance	Yes	Chapter 28 – Flood Damage Prevention (2020)	Local	Floodplain Administrator
How has or will this be integrated with the HMP and how does this reduce risk? These regulations, in combination with the flood provisions of the Uniform Construction Code and FHACA shall apply to all proposed development in flood hazard areas established in Section 27-102 of these regulations. The purposes and objectives of these regulations are to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific flood hazard areas through the establishment of comprehensive regulations for management of flood hazard areas, 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 sound 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. This ordinance does not follow NJDEP's model Code Coordinated Ordinance and will require update,				
Wellhead Protection	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Emergency Management Ordinance	Yes	Chapter 2 – Boards, Committees and Commissions	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? The Borough establishes an Office of Emergency Management and Public Safety Council Committee.				
Climate Change Ordinance	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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	Borough of Woodland Park Master Plan	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? Incorporate green building and site design techniques into the zoning ordinance to promote a sustainable environment; Promote a more compact mixed-use type of land use pattern in areas with existing infrastructure and density and preserve open space also to promote a sustainable environment; and incorporate a green buildings and environmental sustainability element into the Master Plan. The Sustainability Element works to promote water conservation and efficiency throughout all sectors of the community; Use sustainable stormwater management techniques in site design to reduce stormwater runoff and control erosion; Provide all segments of the community with information on sustainability, climate change, and strategies for development.				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Disaster Debris Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Floodplain Management or Watershed Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Stormwater Management Plan	Yes	Stormwater Management Plan	Local	DPW
How has or will this be integrated with the HMP and how does this reduce risk? The goals of the plan are: • Reduce flood damage, including damage to life and property; • Minimize, to the extent practical, any increase in storm water runoff from any new development; • Reduce soil erosion from any development or construction project; • Assure the adequacy of existing and proposed culverts and bridges, and other instream structures; • Maintain groundwater recharge; • Prevent, to the greatest extent feasible, an increase in nonpoint pollution; • Maintain the integrity of stream channels for their biological functions, as well as for drainage; • Minimize pollutants in storm water runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; • Protect public safety through the proper design and operation of storm water basins; • Meet with adjoining municipalities to cooperatively establish storm water control measures; and • Meet with the county to ascertain regional storm water planning goals and determine their impact on Woodland Park				
Stormwater Pollution Prevention Plan	Yes	Stormwater Pollution Prevention Plan (SWPPP)	Local	DPW
How has or will this be integrated with the HMP and how does this reduce risk? Outlines a comprehensive strategy for stormwater management based on widespread application of low impact development and green stormwater infrastructure.				

	Jurisdiction has this?	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
Open Space Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Urban Water Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Habitat Conservation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Economic Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Wildfire Protection Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Community Forest Management Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Transportation Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Agriculture Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Climate Action/ Resilience/Sustainability Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Tourism Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Business/ Downtown Development Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

	Jurisdiction has this?	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
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan	Yes	Borough of Woodland Park Emergency Operations Plan	Local	OEM
How has or will this be integrated with the HMP and how does this reduce risk? The Emergency Operating Plan (EOP) contains annexes for each borough department delineating what their responsibilities are in the event of an emergency or disaster. Where Borough departments cannot provide specific support services, outside agencies, such as the American Red Cross and Salvation Army, are contracted through verbal and written agreements to provide the service needed. The Emergency Operating Plan is reviewed and approved every 4 years by the New Jersey State Office of Emergency Management. Annexes in the plan must be tested through functional, tabletop, and full-scale exercises.				
Continuity of Operations Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Substantial Damage Response Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Threat and Hazard Identification and Risk Assessment	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Post-Disaster Recovery Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Public Health Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				
Other	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk? N/A				

18.3.2 Development and Permitting Capability

Table 18-3 summarizes the capabilities of Woodland Park to oversee and track development.

18.3.3 Administrative and Technical Capability

Table 18-4 summarizes potential staff and personnel resources available to Woodland Park and their current responsibilities that contribute to hazard mitigation.

Table 18-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? • 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 N/A	 Building Department/Code Enforcement
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Permit paperwork indicates hazard
Do you have a buildable land inventory? • If you have a buildable land inventory, please describe	Yes N/A	- There is an inventory of open space.
Describe the level of buildout in your jurisdiction.	N/A	There are very few buildable lands in the Borough because a third of the Borough is Park and reservoirs

Table 18-4. Administrative and Technical Capabilities

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Planning Board responsibilities include: • Make and adopt and, from time to time, amend the master plan for the physical development of the Borough; • Administer the provisions of the Land Subdivision and Site Plan Review ordinances of the Borough in accordance with their provisions and the Municipal Land Use Law; • Consider and report to the Municipal Council within 35 days after referral as to any proposed development regulation submitted to it, and pass upon other matters specifically referred to the Board by the Council; • When reviewing an application, grant approval of a subdivision site plan or conditional use to the same extent and subject to the same restrictions as the Board of Adjustment; • Give site plan review and approval in accord with standards set forth by state statute.
Zoning Board of Adjustment	Yes	Zoning Board responsibilities include: • Hear and decide appeals where errors are alleged in the enforcement of the zoning ordinance by a Borough official; • Hear and decide requests for interpretation of the zoning map or ordinance; • Grant a variance to allow a structure or use in a zoning district restricted against such structure or use, but only with the approval of at least two-thirds of the Board; • Refer a zoning application to the Planning Board for a report.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	-
Open Space Board/Committee	Yes	Open Space Committee oversees: • Acquisition of land for recreation and conservation purposes; • Development of land acquired for recreation and conservation purposes; • Maintenance of land acquired for recreation and conservation purposes; • Preservation of historic properties, structures, facilities, sites, areas or objects and • The acquisition of such properties, structures, facilities, sites, areas or objects; • Payment of debt service on indebtedness issued or incurred by the Borough for any of the purposes set forth above.
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	The DPW is responsible for the maintenance of all municipal roads, including snow removal, traffic signs and traffic signals. In addition, the DPW maintains all municipal facilities, parks and vehicles, the storm water drainage system, sewage system, and the firebox alarm system. Since Woodland Park operates its own Water Company, the DPW is charged with maintaining the water system in the sections of the Borough served by the municipally owned water company. The borough owns and maintains a 1-million-gallon water tank located on Washington Drive. A second tank was added on Garret Mountain at the site of the Four Seasons At Great Notch community to serves as a back-up and to maintain water pressure during emergencies. The Department of Water Pollution Control, headed by the Superintendent of the DPW, is responsible for the sanitary sewer system. So, it also falls upon the DPW to maintain the Borough's sanitary sewers. Sewage treatment is no longer done at a DPW facility. Instead, Woodland Park's sewage is carried to the Passaic Valley Sewage Commission's treatment plant in Newark by the same main that serves Little Falls and Totowa.
Construction/Building/Code Enforcement Department	Yes	The Construction Official enforces the provisions of the New Jersey Uniform Construction Code and has the power to: • Investigate the dwelling conditions in the borough in order to determine which dwellings are unfit for human habitation. • Administer oaths, affirmations, examine witnesses and receive evidence.

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
		• Enter premises for examination provided that entries cause the least inconvenience. • Delegate functions and powers to designated officers and agents. A Code Enforcement Officer, or the Construction Code Official, is authorized to enter and make inspections of all buildings, structures, common walkways, halls, garages, landscaped areas and lawns to check for compliance with all state statutes or approvals received from any board or authority of the Borough. Additionally, the Code Enforcement Officer checks for any defects that are dangerous, harmful or detrimental to life, safety or the health of a dwelling's occupants or to the public. Other officials include the Building Subcode Official, Electrical Subcode Official, Plumbing Subcode Official, and Fire Subcode Official.
Emergency Management/Public Safety Department	Yes	Police Department, Fire Department, First Aid Squad, Office of Emergency Management, Community Emergency Response Team (CERT)
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Stormwater maintenance
Mutual aid agreements	Yes	OFM, M&C
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?		
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Municipal Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Municipal Engineer
Planners or engineers with an understanding of natural hazards	Yes	Municipal Engineer
Staff with expertise or training in benefit/cost analysis	Yes	Building Department/OEM
Professionals trained in conducting damage assessments		
Personnel skilled or trained in GIS and/or Hazus applications	Yes	County
Staff that work with socially vulnerable populations or underserved communities	No	-

Resources	Available?	Comment (available staff, responsibilities, support of hazard mitigation)
Environmental scientists familiar with natural hazards	No	-
Surveyors	Yes	Municipal Engineer
Emergency manager	Yes	OEM
Grant writers		
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

18.3.4 Fiscal Capability

Table 18-5 summarizes financial resources available to Woodland Park.

Table 18-5. Fiscal Capabilities

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

18.3.5 Education and Outreach Capability

Table 18-6 summarizes the education and outreach resources available to Woodland Park.

18.3.6 Community Classifications

Table 18-7 summarizes classifications for community programs available to Woodland Park.

Table 18-6. Education and Outreach Capabilities

Outreach Resources	Available?	Comment
Public information officer or communications office	Yes	IT and Police
Personnel skilled or trained in website development	Yes	IT
Hazard mitigation information available on your website	Yes	Flood
Social media for hazard mitigation education and outreach	Yes	Facebook
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Flood Board
Warning systems for hazard events	Yes	Borough watches the flood elevations, and the OEM coordinator notifies Police regarding evacuation, use reverse 911 and activate sirens
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	Borough sends out mailings to residents quarterly regarding mitigation operations, information is available in the library and civic organizations regarding flooding

Table 18-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System (CRS)	Yes	8	2015
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	2008
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	3	2010
National Weather Service StormReady Certification	No	-	-
Firewise Communities classification	No	-	-
New Jersey Sustainable Jersey Community	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	No	-	-

N/A = Not applicable
— = Unavailable

18.3.7 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 18-8 summarizes the adaptive capacity for each identified hazard of concern and the Borough’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 18-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Geological Hazards	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Moderate
Wildfire	Moderate

18.4 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 18-1 is responsible for maintaining this information.

18.4.1 NFIP Statistics

Table 18-9 summarizes the NFIP policy and claim statistics for Woodland Park.

Table 18-9. Woodland Park NFIP Summary of Policy and Claim Statistics

# Claims (Losses)	385
Total Loss Payments	$8,568,897
# Repetitive Loss Properties (NFIP definition)	94
# Repetitive Loss Properties (FMA definition)	1
# Severe Repetitive Loss Properties (NFIP definition)	16
# Severe Repetitive Loss Properties (FMA definition)	16

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: NJOEM 2024

18.4.2 Flood Vulnerability Summary

Table 18-10 provides a summary of the NFIP program in Woodland Park.

Table 18-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Bergen Boulevard Area Memorial Drive which includes the Middle School and Senior Center/Recreation Center Dowling Parkway, Wallace Lane, Hromiak Terrace, Lozrovich Lane Willow Way McBride Avenue in between the Browertown Road fork and Dowling Parkway. Garret Drive and South Drive. Lackawwanna Ave and McBride Ave
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Zero
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No
How do you make Substantial Damage determinations?	Per FEMA Guidelines
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	Zero
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	Six, DEP Grant
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?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	No
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)	All of the Above
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Per FEMA Guidelines

NFIP Topic	Comments
What are the barriers to running an effective NFIP program in the community, if any?	Resident Cooperation
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)?	March 11, 2024
What is the local law number or municipal code of your flood damage prevention ordinance?	Chapter 28
What is the date that your flood damage prevention ordinance was last amended?	February 2, 2020
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Meets
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?	Meets Requirements
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Woodland Park is in the program.

18.5 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 18-11 through Table 18-13.

Table 18-11. 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
2020				
Total Permits	2	0	0	2
Permits within SFHA	0	0	0	0
2021				
Total Permits	2	0	1	3
Permits within SFHA	0	0	0	0
2022				
Total Permits	0	0	0	0
Permits within SFHA	0	0	0	0
2023				
Total Permits	1	0	0	1
Permits within SFHA	0	0	0	0

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

Table 18-12. Recent Major Development and Infrastructure from 2017 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
Amazon Warehouse	Commercial	1	1150 McBride Ave. Blk 91 Lot 1.01	AE Zone	Completed

** Only location-specific hazard zones or vulnerabilities identified.*

Table 18-13. 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
None Identified					

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

18.6.1 Hazard Area

Hazard area maps provided below illustrate the probable hazard areas impacted within the Borough are shown in Figure 18-1 through Figure 18-2. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Woodland Park has significant exposure. The maps show the location of potential new development, where available

Figure 18-1. Woodland Park NEHRP Hazard Area Extent and Location Map

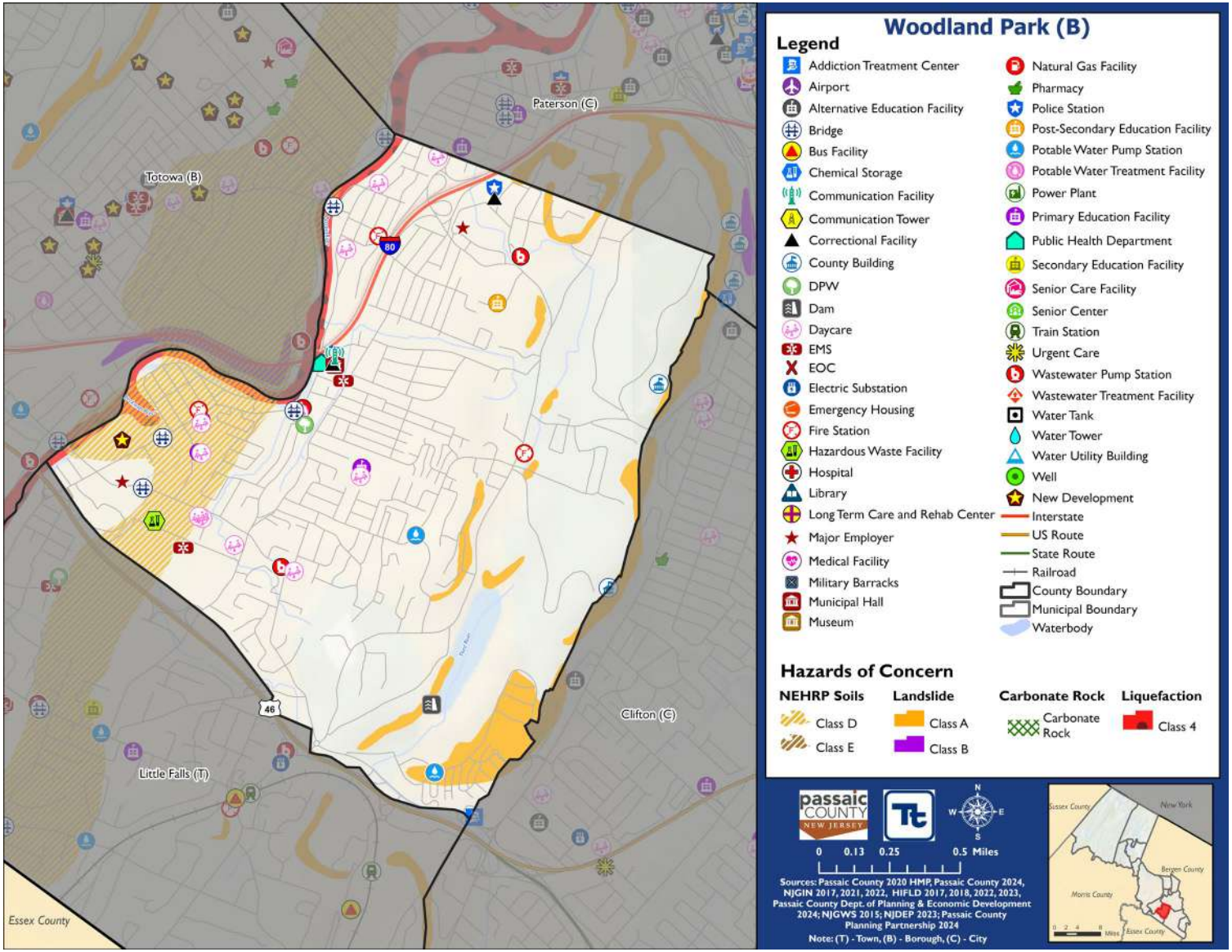
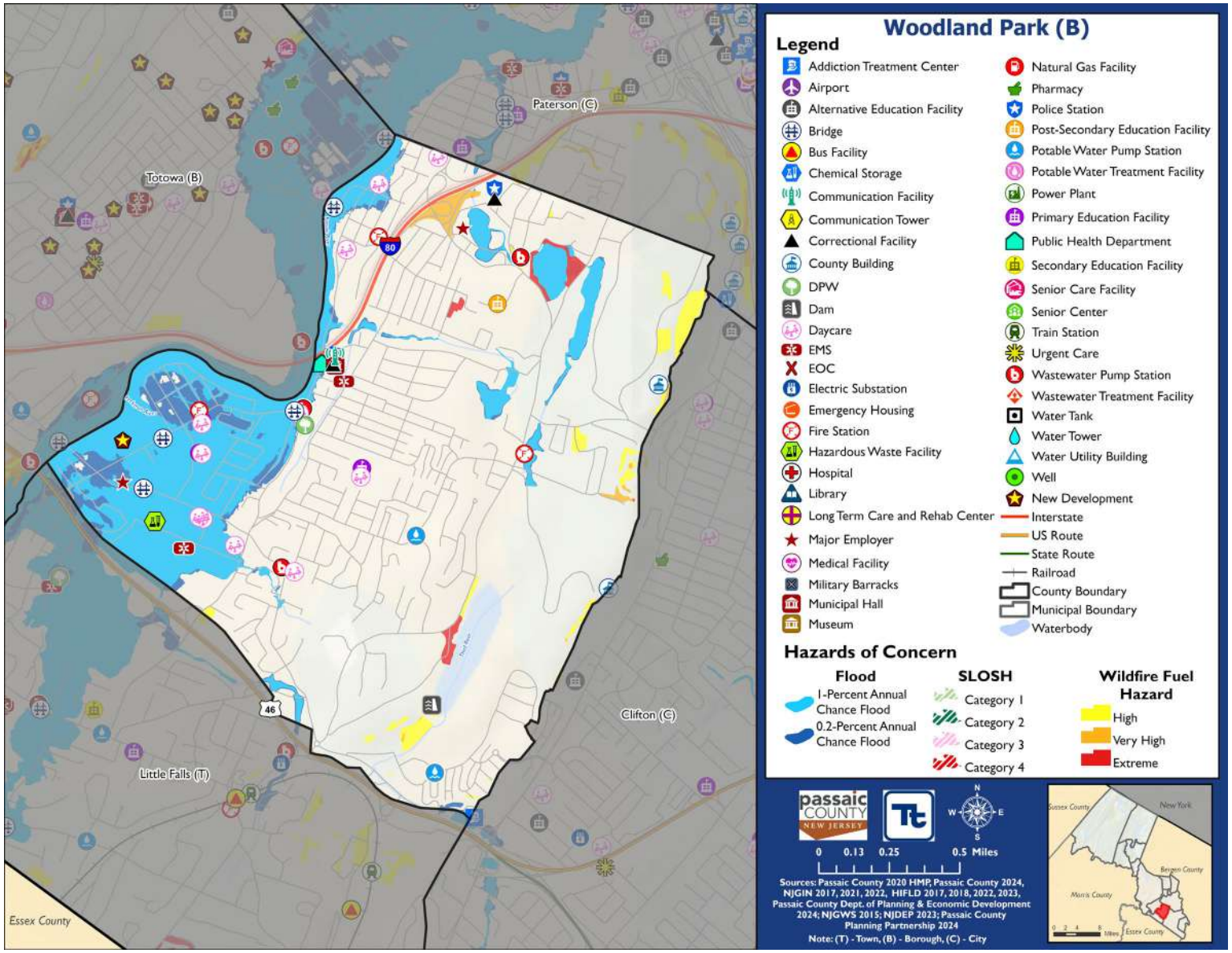


Figure 18-2. Woodland Park Flood and Wildfire Hazard Area Extent and Location Map



18.6.2 Hazard Event History

The history of natural and non-natural hazard events in Woodland Park is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 18-14 provides details on loss and damage in Woodland Park during hazard events since the last hazard mitigation plan update.

Table 18-14. Hazard Event History in Woodland Park

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Woodland Park
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	The Borough abided by social distancing and work from home regulations.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	Category A Debris Removal costs $402,416 Category B – Emergency Protective Measures Cost $53,228 Category G – Parks/Recs Cost 5,362 Category Z – Admin $19,211 Total Cost - $480,217
December 17-23, 2023	Flood	N/A	Over 5 inches of rainfall resulted in major flooding and power outages in the region. State of emergency and evacuations were declared during the initial storm and subsequent riverine flooding.	Category B- Emergency Protective Measures Cost $35,000 Category E- Equipment Cost $10,000 Category G- Parks/Rec $1,200 Total Cost $46,200 School Closure for 4 days

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

18.6.3 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 Woodland Park.

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. Woodland Park 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 Borough agreed with the preliminary results.

Table 18-15 shows Woodland Park's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 18-15. Hazard Ranking

Hazard	Rank
Dam Failure	Low
Drought	Medium
Geological Hazards	Low
Extreme Temperature	Medium
Flood	Medium
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

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 18-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 18-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
1600039	Bridge	X	X
1600130	Bridge	X	X
1600131	Bridge	X	X
1600258	Bridge	X	X
Beatrice Gilmore E.S.	Primary Education Facility	-	X
BIRTH AND BEYOND DAY CARE LLC	Daycare	X	X
BOYS AND GIRLS CLUB OF CLIFTON - BEFORE AND AFTER SCHOOL PROGRAM - BEATRICE GILMORE SCHOOL	Daycare	-	X
BOYS AND GIRLS CLUB OF CLIFTON - BEFORE AND AFTER SCHOOL PROGRAM - MEMORIAL MIDDLE SCHOOL	Daycare	X	X
BRIGHT FUTURE LEARNING ACADEMY LLC	Daycare	X	X
GOLDEN STEPS LEARNING CENTER, INC.	Daycare	X	X

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
KIDDIE UNIVERSITY LEARNING CENTER LLC	Daycare	X	X
Mcbride Ave Pump Station	Wastewater Pump Station	X	X
Memorial M.S.	Primary Education Facility	X	X
Orkin	Major Employer	X	X
Pulse Medical Transportation	EMS	X	X
STEP BY STEP DAY CARE	Daycare	X	X
W.P.A.R., Inc.	Hazardous Waste Facility	X	X
Woodland Park Borough Health Department	Public Health Department	X	X
Woodland Park FD - Pv Hose Company 2	Fire Station	-	X

Source: Passaic County 2020 HMP, Passaic County 2024, NJGIN 2017, 2021, 2022, HIFLD 2017, 2018, 2022, 2023, Passaic County Dept. of Planning & Economic Development 2024

In addition to critical facilities that are exposed to flooding, the Borough of Woodland Park contains at least one high hazard dam; however, this information is considered sensitive by the County and site-specific information is not provided.

18.6.4 Identified Issues

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

- Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 95 repetitive loss properties and 32 severe repetitive loss properties, but other nearby properties may be impacted by flooding as well.
- The following critical facilities are municipally owned and located in the special flood hazard area:
  - Highway Bridge: 1600039
  - Highway Bridge: 1600130
  - Highway Bridge: 1600131
  - Highway Bridge: 1600258
  - Beatrice Gilmore E.S.
  - BIRTH AND BEYOND DAY CARE LLC
  - BOYS AND GIRLS CLUB OF CLIFTON - BEFORE AND AFTER SCHOOL PROGRAM - BEATRICE GILMORE SCHOOL
  - BOYS AND GIRLS CLUB OF CLIFTON - BEFORE AND AFTER SCHOOL PROGRAM - MEMORIAL MIDDLE SCHOOL
  - BRIGHT FUTURE LEARNING ACADEMY LLC

- GOLDEN STEPS LEARNING CENTER, INC.
- KIDDIE UNIVERSITY LEARNING CENTER LLC
- Mcbride Ave Pump Station
- Memorial M.S.
- Orkin
- Pulse Medical Transportation
- STEP BY STEP DAY CARE
- W.P.A.R., Inc.
- Woodland Park Borough Health Department
- Woodland Park FD - Pv Hose Company 2

- Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
- 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.
- There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams located in the Borough, including Highland Lake Dam, New Street Reservoir Dam, and Great Notch Reservoir Dam. These structures have the potential to impact those living nearby.
- The Peckman River floods which impacts nearby properties and roadways which also blocks access for emergency vehicles.
- Small culvert piping leads to bottle necking of water that is trying to escape the Dowling Brook and causes a dam-like effect which leads to flooding along McBride Avenue. This culvert is a County owned culvert.
- The Borough does not have the ability to view the rising flood waters and therefore sends a police officer out to capture a visual, which potentially places the officer in harms way.
- The Borough residents do not have a comprehensive understanding of natural hazards and are in need of more hazard awareness relating to Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, and Wildfire.
- Woodland Park Borough has streambank stabilization issues which leads to flooding issues along streams and creeks.
- The current update of the County Hazard Mitigation Plan has not been integrated into the next Master Plan update yet.

18.7 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.

18.7.1 Past Mitigation Action Status

Table 18-17 indicates progress on the Borough's mitigation strategy identified in the 2020 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.

18.7.2 Additional Mitigation Efforts

In addition to the mitigation actions completed in Table 18-17, Woodland Park did not identify other mitigation efforts completed since the last HMP.

Table 18-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazards 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.
2020-Woodland Park-001			DPW	Install door dams, caulking of all conduits, sealing transformers, elevate and waterproof adjacent transition collection structure.	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete
2020-Woodland Park-002			Engineer	Raise mechanicals	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete
2020-Woodland Park-003			Floodplain Administrator/CRS Coordinator	The Borough will distribute quarterly mailings to flood-prone residents and shows them on a map– add mitigation options so they can evaluate a mitigation option and contact the Borough for implementation	1.Complete 2.	1.Discontinue 2. N/A 3. This action is complete
2020-Woodland Park-004			Mayor and Council/OEM	Build a flood wall around the building	1.No Progress 2. Due to lack of progress and funding, the Borough will not be moving forward with this mitigation action	1.Discontinue 2. N/A 3.

Project Number	Project Name	Hazards 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.
2020-Woodland Park-005			USACE	The USACE will construct a double box diversion culvert, or tunnel structure to be built under roadways to divert floodwater from the Peckman River into the Passaic River.	1. In Progress 2. The Design is currently in progress.	1.Include 2.Keep as is 3. N/A
2020-Woodland Park-006				Increase capacity of culverts on McBride Ave	1.No Progress 2. Coordinating with County Administrator as it is a County Culvert	1.Include 2. Small culvert piping bottle necks the water trying to escape the Dowling Brook causing a dam-like effect. 3. N/A
2020-Woodland Park-007				Peckman River at McBride Ave bridge – remove gravity sewer main and replace with a pump station to increase conveyance capacity of Peckman River – in progress.	1.Complete 2. January 2023. $2,124,412, utilizing FEMA funding	1.Discontinue 2.N/A 3. Project is complete

Project Number	Project Name	Hazards 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.
2020-Woodland Park-008			Administration	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. Assist property owners in grant applications.	1.Complete 2.	1.Discontinue 2.N/A 3. The Project is completed.
2020-Woodland Park-009			Police Department	The Borough will provide cameras on the Franciso Bridge, E. Main Street, Lackawanna Avenue, and Route 46 East and West Bridge and connect the live footage to the Police headquarters and the Borough website. This will be a collaborative effort with the Township of Little Falls.	1.No Progress 2. The Borough is still working identifying scope and funding for this mitigation action.	1.Include 2. The ability to view rising flood waters without the need to send a police officer in possible harm's way to obtain a visual. 3. N/A

Project Number	Project Name	Hazards 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.
2020-Woodland Park-010			NFIP Floodplain Administrator/CRS Coordinator	Develop an all hazards public education and outreach program for hazard mitigation and preparedness on natural hazard risk including information regarding flood insurance and flood issues.	1.Complete 2.	1.Discontinue 2.N/A 3. The Project is completed.
2020-Woodland Park-011			OEM	Expand the early warning communication system in the Borough so that it is automated and does not require manpower to activate.	1.Complete 2. New wiring ran for OEM Alarm. Still need to manually activate however Dispatch is staffed 24-7 and will have the ability to activate at any time.	1.Discontinue 2.N/A 3. The Project is completed.
2020-Woodland Park-012			CRS Coordinator	Improve understanding of natural hazards and compile and archive flood loss information, record high water marks to promote flood hazard awareness.	1.No Progress 2. Due to limited capacity and capability, this mitigation action has been impacted but Borough is committed in increasing outreach.	1.Include 2. Keep as is 3. N/A

Project Number	Project Name	Hazards 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.
2020-Woodland Park-013			Mayor and Council	Develop a funding source to fund mitigation program on a yearly basis for municipal mitigation projects.	1.No Progress 2. Budgetary Constraints	1.Discontinue 2.N/A 3. Not feasible
2020-Woodland Park-014			DPW	Implement a streambank stabilization project using native plant species.	1.In Progress 2. Department of Public Works is still developing scope/design and identifying funding stream.	1.Include 2.Keep as is 3.N/A
2020-Woodland Park-015			Administration	Utilize the HMP to update the Master Plan	1.In Progress 2. Committee has been formed and is actively working to include within plan.	1.Include 2.Keep as is 3. N/A

18.7.3 Proposed Hazard Mitigation Actions for the HMP Update

Woodland Park 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 Woodland Park 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 Borough priorities.

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

Table 18-18. 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
Drought	X			X	X		X			X
Geological Hazards	X			X	X		X			X
Extreme Temperature	X			X	X		X			X
Flood	X	X	X	X	X	X	X	X	X	X
Severe Weather	X	X		X	X	X	X		X	X
Severe Winter Weather	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 18-19. 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**	
Action 2025-WoodlandParkB-001	Repetitive Loss Property Mitigation	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WoodlandParkB-002	Critical Facilities in the Floodplain	1	1	1	1	1	0	1	1	1	1	1	1	1	0	**12**	High
Action 2025-WoodlandParkB-003	Disaster Debris Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WoodlandParkB-004	Substantial Damage Management Plan	0	1	1	1	1	0	1	1	1	1	1	1	0	1	**11**	High
Action 2025-WoodlandParkB-005	Dam Owner Partnership	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**13**	High
Action 2025-WoodlandParkB-006	Peckman River Flooding	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WoodlandParkB-007	McBride Avenue Culvert Upsizing	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WoodlandParkB-008	Floodwater Cameras	1	1	1	1	1	0	1	1	1	1	1	1	1	1	**13**	High
Action 2025-WoodlandParkB-009	Natural Hazard Awareness	1	1	1	1	1	0	1	1	1	1	1	1	0	1	**12**	High
Action 2025-WoodlandParkB-010	Streambank Stabilization Project	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
Action 2025-WoodlandParkB-011	HMP Integration	1	1	1	1	1	1	0	0	1	1	1	1	0	0	**10**	Medium

Note: Volume I, Chapter 16 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-6), Medium (7-10), High (11-14).

Action 2025-WoodlandParkB-001. Repetitive Loss Property Mitigation

Lead Agency:	Public Works
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Severe Storm, Flood
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 Borough has 95 repetitive loss properties and 32 severe repetitive loss properties, but other nearby properties may be impacted by flooding as well.
Description of the Solution:	Conduct outreach to 150 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information, and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).
Estimated Cost:	Staff Time
Potential Funding Sources:	FMA, HMGP, match from property owners
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,7
Benefits:	Eliminates flood damage to homes and residences, which creating an open space for the municipality and increasing flood storage.
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses elevated or acquired when it would otherwise be unaffordable.
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be acquired, which will remove those structures from the floodplain and prevent future development on those sites.
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events. Elevating structures will reduce the recovery costs as a result of these events.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Property Protection
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Levee around floodplain	Costly, not enough room
	Deployable flood barriers	Requires deployment. Residents may not have adequate time to deploy, especially those who are elderly or disabled.

Action 2025- WoodlandParkB-002. Critical Facilities in the Floodplain

Lead Agency:	Public Works; Facility Managers
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Flood
Description of the Problem:	The following critical facilities are municipally owned and located in the special flood hazard area: • Highway Bridge: 1600039 • Highway Bridge: 1600130 • Highway Bridge: 1600131 • Highway Bridge: 1600258 • Beatrice Gilmore E.S. • BIRTH AND BEYOND DAY CARE LLC • BOYS AND GIRLS CLUB OF CLIFTON - BEFORE AND AFTER SCHOOL PROGRAM - BEATRICE GILMORE SCHOOL • BOYS AND GIRLS CLUB OF CLIFTON - BEFORE AND AFTER SCHOOL PROGRAM - MEMORIAL MIDDLE SCHOOL • BRIGHT FUTURE LEARNING ACADEMY LLC • GOLDEN STEPS LEARNING CENTER, INC. • KIDDIE UNIVERSITY LEARNING CENTER LLC • Mcbride Ave Pump Station • Memorial M.S. • Orkin • Pulse Medical Transportation • STEP BY STEP DAY CARE • W.P.A.R., Inc. • Woodland Park Borough Health Department • Woodland Park FD - Pv Hose Company 2
Description of the Solution:	The Borough will conduct a feasibility assessment to determine what additional floodproofing measures are needed at the facilities listed above to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood barriers Once the most cost-effective option is identified, the Borough will carry out the option.
Estimated Cost:	TBD based on facility and floodproofing measure decided upon
Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget
Implementation Timeline:	Within 5 Years and then ongoing
Goals Met:	2,5,6
Benefits:	Ensures continuity of operations of the critical facilities listed above.
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders and emergency managers to maintain critical services that socially vulnerable populations rely on.
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow critical operations to be maintained or only briefly interrupted in severe events. This provides continued support to both current and future development in the service area.
Impact on Critical Facilities/Lifelines:	This action will protect the critical facilities listed above which maintains the critical services that each provides.

Impact on Capabilities:	This action improves continuity of operations during a flood event, allows for a more rapid return to pre-disaster capabilities after a flood event, and faster deployment of post disaster capabilities.	
Climate Change Considerations:	This action addresses anticipated increases in flooding frequency and severity through protection to the 500-year (0.2-percent annual chance) flood level.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Emergency Services, Property Protection	
Priority	High	
Alternatives:	Action	Evaluation
	No Action	-
	Relocate facility	Relocation is expensive and results in loss or delay of critical services in the immediate area
	Establish plans to enter into MOU with neighboring critical facilities to provide service during flood events	Reduction in response times and delay of critical services in the immediate area.

Action 2025- WoodlandParkB-003. Disaster Debris Management Plan

Lead Agency:	Public Works
Supporting Agencies:	Passaic County Emergency Management
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	Major disaster events can result in large amounts of debris that overwhelm normal trash collection operations. Depending on the amount generated, temporary staging areas for debris collection may be needed. The municipality does not have a disaster debris management plan in place. During a disaster that results in debris, a plan with outlined responsibilities is needed to adequately address post-disaster cleanup operations.
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:	N/A
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	N/A
Impact on Capabilities:	The action will result in increased post disaster capabilities.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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- WoodlandParkB-004. Substantial Damage Management Plan

Lead Agency:	Floodplain Administrator
Supporting Agencies:	Public Works, Code Enforcement
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	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: • 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. 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.
Description of the Solution:	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_damge_mgmt_plan.pdf). This plan will outline responsibilities for Substantial Damage determinations, determining market value, and permit approval processes following a disaster event.
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:	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	Local Plans and Regulations
CRS Category	Emergency Services, Preventative
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	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 responsibility is still necessary to prevent missing important requirements

Action 2025- WoodlandParkB-005. Dam Owner Partnership

Lead Agency:	Public Works
Supporting Agencies:	Dam Owner and Managers
Hazard(s) of Concern:	Dam Failure
Description of the Problem:	There are multiple dams, which are critical infrastructures, located in the 1- and 0.2-percent flood hazard areas. The Borough also has multiple high-hazard potential dams located in the Borough, including Highland Lake Dam, New Street Reservoir Dam, and Great Notch Reservoir Dam. These structures have the potential to impact those living nearby.
Description of the Solution:	The Borough will work with the owners and managers of the dams to ensure inspections and safety procedures are up to date. EAPs will be collected by the Borough OEM and shared with the County OEM.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,7,8,9
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:	N/A
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	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:

Action	Evaluation
No Action	-
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- WoodlandParkB-006. Peckman River Flooding

Lead Agency:	Public Works
Supporting Agencies:	Building Department
Hazard(s) of Concern:	Flood
Description of the Problem:	The Peckman River floods which impacts nearby properties and roadways which also blocks access for emergency vehicles.
Description of the Solution:	The USACE will construct a double box diversion culvert, or tunnel structure to be built under roadways to divert floodwaters from the Peckman River into the Passaic River. The design for reallocating floodwaters from the Peckman River to the Passaic River is currently in progress.
Estimated Cost:	High
Potential Funding Sources:	USACE, borough Budget
Implementation Timeline:	Within 5 Years
Goals Met:	2,5,8
Benefits:	The Borough will not experience as much flooding in relation to the Peckman River.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be disproportionally impacted by the flooding along the Peckman River.
Impact on Future Development:	Development will not be encouraged in flood prone areas.
Impact on Critical Facilities/Lifelines:	Critical facilities that are located near or along the Peckman River may be impacted by flooding which may impact their ability to perform continuity of operations.
Impact on Capabilities:	This action strengthens the Borough's capability to handle flood events and reduces the amount of flooding along the Peckman River.
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	Structure and Infrastructure Projects, Natural Systems Protection
CRS Category	Structural Flood Control Projects, Natural Resource Protection
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not sole overall problem
Elevate all nearby structures	Not cost effective

Action 2025- WoodlandParkB-007. McBride Avenue Culvert Upsizing

Lead Agency:	Public Works
Supporting Agencies:	County Administrator
Hazard(s) of Concern:	Flood, Severe Storm
Description of the Problem:	Small culvert piping leads to bottle necking of water that is trying to escape the Dowling Brook and causes a dam-like effect which leads to flooding along McBride Avenue. This culvert is a County owned culvert.
Description of the Solution:	The Borough will work with the County to determine to right sized culverts needed along McBride Avenue. Once the right sized culverts are determined, the Borough and County will acquire funding to purchase and install the right sized culverts and will ensure routine maintenance is being conducted.
Estimated Cost:	TBD after Study
Potential Funding Sources:	HMGP, CHIPS, operating budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,6,7
Benefits:	Overall flooding will be reduced, which will result in less frequency of road closures and reduced damage occurring to culverts and roadways during severe events. Businesses are likely to remain in place if they are able to remain open, or re-open sooner following a flood.
Impact on Socially Vulnerable Populations:	Areas that were previously vulnerable to frequency or severe flooding events will be less likely to be impacted by flooding events.
Impact on Future Development:	Future development in the impacted area will be less likely to be flooded.
Impact on Critical Facilities/Lifelines:	Transportation routes are more likely to remain open
Impact on Capabilities:	Evacuation routes will remain intact.
Climate Change Considerations:	Access to health and medical facilities will be maintained, both for healthcare workers and the population who requires treatment for injuries and illness.
Mitigation Category	Structure and Infrastructure Project
CRS Category	Structural Projects
Priority	High

Alternatives:

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

Action 2025- WoodlandParkB-008. Floodwater Cameras

Lead Agency:	Police Department
Supporting Agencies:	Public Works
Hazard(s) of Concern:	Flood
Description of the Problem:	The Borough does not have the ability to view the rising flood waters and therefore sends a police officer out to capture a visual, which potentially places the officer in harms way.
Description of the Solution:	The Borough will acquire funding for flood sensors on the Francisco Bridge, E. Main Street, Lackawanna Avenue, and Route 46 East and West Bridge and connect the live footage to the Police headquarters and the Borough website so that flood water heights can be monitored. This will be a collaborative effort with the Township of Little Falls.
Estimated Cost:	TBD
Potential Funding Sources:	HMGP 5% Initiative, Borough Budget
Implementation Timeline:	Within 5 Years
Goals Met:	1,2,5,8
Benefits:	This action gives the Borough more knowledge on the level of surrounding waters in the Borough.
Impact on Socially Vulnerable Populations:	Some socially vulnerable populations may be disproportionately impacted by flooding and this action would more clearly show potential flooding issues.
Impact on Future Development:	N/A
Impact on Critical Facilities/Lifelines:	Critical facilities that are located near waterbodies that may flood can be notified quicker and more efficiently.
Impact on Capabilities:	This action strengthens the Borough's capabilities to handle flood events.
Climate Change Considerations:	Climate change may result in an increase in the frequency and severity of weather-related disaster events, which may contribute to the likelihood of a dam failure event. This action will increase the capabilities to respond to these events.
Mitigation Category	Local Plans and Regulations
CRS Category	Public Information, Emergency Services
Priority	High

Alternatives:

Action	Evaluation
No Action	-
Purchase moveable flood barriers	Does not solve problem
Elevate roadways	Does not solve problem

Action 2025- WoodlandParkB-009. Natural Hazard Awareness

Lead Agency:	CRS Coordinator
Supporting Agencies:	Public Works
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The Borough residents do not have a comprehensive understanding of natural hazards and are in need of more hazard awareness relating to Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, and Wildfire.
Description of the Solution:	The Borough will improve understanding of natural hazards and compile and archive flood loss information, record high water marks to promote flood hazard awareness and document all hazard events.
Estimated Cost:	Staff Time
Potential Funding Sources:	Borough Budget
Implementation Timeline:	Within 5 Years; ongoing once established
Goals Met:	1,2,3,4,5,7
Benefits:	This action will ensure there is an individual working to identify and work with the socially vulnerable populations and any other members of the Borough in the Borough. Furthermore, this action will create opportunities to educate and inform populations on hazard risks.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations in the Borough will become educated on hazards and risks. The Borough 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:	N/A
Impact on Critical Facilities/Lifelines:	Educating populations on hazard risk and how to mitigate the risks can decrease the demand for utilities and emergency services including health and medical, law enforcement, and search and rescue.
Impact on Capabilities:	This action would build upon the Borough'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	Education and Awareness Programs
CRS Category	Public Information
Priority	High

Alternatives:

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

Action 2025- WoodlandParkB-010. Streambank Stabilization Project

Lead Agency:	Public Works
Supporting Agencies:	Department of Building, Engineer
Hazard(s) of Concern:	Flood
Description of the Problem:	Woodland Park Borough has streambank stabilization issues which leads to flooding issues along streams and creeks.
Description of the Solution:	The Borough will implement a streambank stabilization project using native plant species to prevent and reduce flooding.
Estimated Cost:	TBD after Engineering Study
Potential Funding Sources:	HMGP, Borough Budget
Implementation Timeline:	Within 5 Years
Goals Met:	2,8
Benefits:	This action will prevent erosion along streambanks, protecting property and infrastructure from further impact.
Impact on Socially Vulnerable Populations:	This action will assist socially vulnerable populations whose properties are impacted by flooding. 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 which permits first responders to traverse the roadways safely.
Impact on Capabilities:	This action strengthens the Borough's ability to handle flooding.
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. These periods of intense rain may lead to more instances of flooding and increased erosion.
Mitigation Category	Natural Systems Protection
CRS Category	Natural Resource Protection, Structural Flood Control Projects
Priority	High

Alternatives:

Action	Evaluation
No action	Current problem continues
Remove properties impacted by stream overflow	Costly
Construct floodwall to prevent flooding	Cost prohibitive and could ruin natural floodplain function

Action 2025- WoodlandParkB-011. HMP Integration

Lead Agency:	Planning Board
Supporting Agencies:	HMP Coordinator
Hazard(s) of Concern:	Dam Failure, Drought, Geological Hazards, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire
Description of the Problem:	The current update of the County Hazard Mitigation Plan has not been integrated into the next Master Plan update yet.
Description of the Solution:	The Borough will integrate the current Hazard Mitigation Plan into the next Master Plan update, including addressing the current identified hazards of concern in the Master Plan.
Estimated Cost:	Low
Potential Funding Sources:	Municipal Budget
Implementation Timeline:	Within 2 Years
Goals Met:	1,2,4,5,7,8,9
Benefits:	This integrates the concerns and problems identified in the HMP to the Master Plan.
Impact on Socially Vulnerable Populations:	Socially vulnerable populations that may be more heavily impacted by certain hazards will be better protected from those hazards after integrating the concerns into the Master Plan.
Impact on Future Development:	The Borough can use the HMP to identify good areas to build out.
Impact on Critical Facilities/Lifelines:	The Master Plan can address critical facilities that may be impacted by hazard events.
Impact on Capabilities:	This action strengthens the Borough’s ability to handle the hazard events addressed in the HMP.
Climate Change Considerations:	Climate Change is leading to an increase in intensity and frequency of precipitation events that may exacerbate some of the hazards of concern.
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Measures
Priority	High

Alternatives:	Action	Evaluation
	No Action	-
	Rely on State and Federal Sources	Not local specific



Passaic County Hazard Mitigation Plan

2025 Update

Volume III—Appendices



TETRA TECH

APPENDIX A: RESOLUTIONS

The Passaic County and municipal adoption resolutions will be included in this appendix upon receipt of the Federal Emergency Management Agency (FEMA) Approval Pending Adoption (APA) status. Please refer to Chapter 2 (Planning Process) for additional information on plan adoption procedures.

This appendix also includes an example resolution to be submitted by Passaic County and participating jurisdictions authorizing adoption of the 2025 Passaic County Hazard Mitigation Plan Update.

Sample Resolution

(LOCAL GOVERNMENT, INCLUDING SPECIAL DISTRICTS), New Jersey

RESOLUTION NO. _____

A RESOLUTION OF THE (LOCAL GOVERNMENT) ADOPTING THE 2025 Passaic County Hazard Mitigation Plan

WHEREAS the (local governing body) recognizes the threat that natural hazards pose to people and property within (local government); and

WHEREAS the (local government) has prepared a multi-hazard mitigation plan, hereby known as (title and date of mitigation plan) in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS (title and date of mitigation plan) identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in (local community) from the impacts of future hazards and disasters; and

WHEREAS adoption by the (local governing body) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL COMMUNITY), New Jersey, THAT:

Section 1. In accordance with (local rule for adopting resolutions), the (local governing body) adopts the (title and date of mitigation plan). This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

ADOPTED by a vote of ____ in favor and ____ against, and ____ abstaining, this _____ day of _____, _____.

By: _____

(print name)

ATTEST: By: _____

(print name)

APPROVED AS TO FORM: By: _____

(print name)

Municipal Adoption Resolution

RESOLUTION NO. 2025-8.3

BOROUGH OF BLOOMINGDALE, NEW JERSEY

A RESOLUTION OF THE BOROUGH OF BLOOMINGDALE ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the Borough Council & the Office of Emergency Management recognizes the threat that natural hazards pose to people and property within the Borough of Bloomingdale; and

WHEREAS, the Borough of Bloomingdale has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Bloomingdale from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Borough Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE BOROUGH OF BLOOMINGDALE, STATE OF NEW JERSEY THAT:

Section 1. In accordance with the borough code, the Borough Council of the Borough of Bloomingdale adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

Record of Council Vote on Passage

COUNCIL PERSON	AYE	NAY	Abstain	Absent	COUNCIL PERSON	AYE	NAY	Abstain	Absent
Bronkhurst				X	Hudson	X			
Catalano	X				Schubert	X			
Graziano	X				Yazdi	X			

I hereby certify that the foregoing is a true copy of a Resolution adopted by the Governing Body of the Borough of Bloomingdale at an Official Meeting held on August 19, 2025.

Breeanna Smith, Municipal Clerk
Borough of Bloomingdale

PASSAIC COUNTY, NEW JERSEY
GOVERNING BODY
RESOLUTION

Motion by: Morris Seconded by: Iza

RESOLUTION #2025-145

TITLE: ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the Governing Body of the Borough of Haledon recognizes the threat that natural hazards pose to people and property within the Borough of Haledon; and

WHEREAS, in cooperation with the County of Passaic Office of Emergency Management, the Borough of Haledon Office of Emergency Management has submitted to the Governing Body of the Borough of Haledon the 2025 Multi-Hazard Mitigation Plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Haledon from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Governing Body of the Borough of Haledon demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED, the Mayor and Municipal Council of the Borough of Haledon, in the County of Passaic, State of New Jersey, **HEREBY** adopts the 2025 Passaic County Hazard Mitigation Plan.

Name	Motion	Second	Roll Call Vote		Abstain	Absent
			Yes	No		
Michael Johnson						
Nereyda Curiel			X			
Carlos Moczo			X			
Carlos Aymat						X
Alexsandra Tasic						X
Jimmy Iza		X	X			
Junior Morris	X		X			

This resolution was duly adopted by the Council of the Borough of Haledon at a meeting held on September 11, 2025

Joanne Van Hook
Municipal Deputy Clerk

RESO. NO. 164-25

BOROUGH OF HAWTHORNE
County of Passaic
State of New Jersey

RESOLUTION NO. R 164-25

Resolution, Introduced by Council Person Mele ***Date:*** ***October 15, 2025***

A RESOLUTION OF THE BOROUGH OF HAWTHORNE ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS the Borough of Hawthorne recognizes the threat that natural hazards pose to people and property within the Borough of Hawthorne; and

WHEREAS the County of Passaic has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Hawthorne from the impacts of future hazards and disasters; and

WHEREAS adoption by the Municipal Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED by the Municipal Council of the Borough of Hawthorne, that it adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the Borough, may be edited or amended after submission for review, but will not require the Borough to re-adopt any further iterations. This only applies to this specific plan and does not absolve the Borough from adopting a similar resolution updating the plan in 5 years.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 15th day of October, 2025.

By: Frank E Matthews
Frank E. Matthews, Council President

ATTEST: By: Lori Fernandez
Lori Fernandez, Borough Clerk

CERTIFICATION
I, Lori Fernandez, Borough Clerk of the Borough of Hawthorne, County of Passaic State of New Jersey, do hereby certify this copy of R 164-25 to be a true copy as adopted by the Municipal Council on Oct. 15, 2025

Lori Fernandez, RMC, CMC, Borough Clerk

Name	Motion	Second	Yes	No	Abstain	Absent
Bennett			X			
Laiosa			X			
Mele	X		X			
Matthews			X			
Sasso			X			
Sciarra		X	X			
Wojtecki			X			

Frank E Matthews
Frank E. Matthews, Council President

Lori Fernandez
Lori Fernandez, RMC, CMC, Borough Clerk

Factual Content Certified by — Name / Title / Date

Approved as to form and legality on basis of facts set forth — Borough Attorney — Date 10/15/25

BOROUGH OF NORTH HALEDON

RESOLUTION

TITLE: ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS the Borough of North Haledon recognizes the threat that natural hazards pose to people and property within Borough of North Haledon; and

WHEREAS the Borough of North Haledon has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of North Haledon from the impacts of future hazards and disasters; and

WHEREAS adoption by the Borough of North Haledon demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE BOROUGH OF NORTH HALEDON, New Jersey, THAT:

Section 1. In accordance with the Mayor and Council, the Borough of North Haledon adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community of updating the plan in 5 years.

Randy George

Randy George, Mayor

Duly adopted
this 20th day of August 2025

Dena Cedar

Dena Cedar, Deputy Clerk

BOROUGH OF POMPTON LAKES
PASSAIC COUNTY, NEW JERSEY

Resolution No: 25-304

TITLE:

A RESOLUTION OF THE BOROUGH OF POMPTON LAKES ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the Borough of Pompton Lakes recognizes the threat that natural hazards pose to people and property within the Borough; and

WHEREAS, the Borough of Pompton Lakes has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough from impacts of future hazards and disasters; and

WHEREAS, adoption by the Borough of Pompton Lakes demonstrates their commitment to hazard mitigation and achieving goals outlined in the 2025 Passaic County Hazard Mitigation Plan;

NOW, THEREFORE, BE IT RESOLVED, that the Mayor and Borough Council of the Borough of Pompton Lakes, in the County of Passaic, and State of New Jersey, hereby adopts the 2025 Passaic County Hazard Mitigation Plan; and

BE IT FURTHER RESOLVED, that this plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations, and that this only applies to this specific plan and does not absolve the Borough from updating the plan in five (5) years.

RECORD OF COUNCIL VOTE:

I, Elizabeth Brandsness, R.M.C., Municipal Clerk, hereby certify that the above resolution is a true copy of the resolution adopted by the Mayor and Council at their Regular Meeting held on September 10, 2025 at 7:30 p.m. in the Pompton Lakes Municipal Building, 25 Lenox Avenue, Pompton Lakes, N.J.

Motion – by: Venin Second – by: Polidori

COUNCIL	Yes	No	Absent	Abstain	COUNCIL	Yes	No	Absent	Abstain
Cruz	✓				Polidori	✓			
Hinton	✓				Quinn	✓			
Kent	✓				Venin	✓			
MAYOR (Tie-Break Vote): ***Yes*** ☐ ***No*** ☐									

Date of Adoption: September 10, 2025

Elizabeth Brandsness

Elizabeth Brandsness, R.M.C., Municipal Clerk

Michael Serra, Mayor

CC: Borough Administrator, Office of Emergency Management

COUNCIL OF THE BOROUGH OF PROSPECT PARK

PASSAIC COUNTY, NEW JERSEY

RESOLUTION NO. 2025-176

TITLE: **RESOLUTION OF THE BOROUGH OF PROSPECT PARK ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN**

WHEREAS the Borough Council recognizes the threat that natural hazards pose to people and property within Prospect Park; and

WHEREAS the Borough of Prospect Park has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Prospect Park from the impacts of future hazards and disasters; and

WHEREAS adoption by the Borough Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE BOROUGH OF PROSPECT PARK, NEW JERSEY, THAT:

Section 1. In accordance with Mayor and Council adopt Resolution No. 2025- 176 the Borough of Prospect Park adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

I hereby certify that this resolution, consisting of 1 page(s), was adopted at the Regular Meeting of the Borough Council of the Borough of Prospect Park, held this 17th day of November 2025

COUNCIL MEMBER	MOTION	SECOND	AYE	NAY	ABSTAIN	ABSENT
Council President Shah	✓		✓			
Councilman Artis			✓			
Councilman Nadim						✓
Councilman Hussain		✓	✓			
Councilwoman Rodriguez						✓
Councilwoman Ortiz						✓

Mohamed T. Khairullah
Mayor

Denise D. Cafone, RMC, CMC, CMR

Resolution Number
2025-166

A RESOLUTION OF THE BOROUGH OF RINGWOOD ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the Municipal Council of the Borough of Ringwood recognizes the threat that natural hazards pose to people and property within the Borough of Ringwood; and

WHEREAS, the Borough of Ringwood has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Ringwood from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Municipal Council of the Borough of Ringwood demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED by the Municipal Council of the Borough of Ringwood, State of New Jersey, that:

Section 1. In accordance with the Municipal Council, the Borough of Ringwood, adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

JAIME MATTEO-LANDIS, MAYOR

I hereby certify that the above Resolution was adopted by the Municipal Council of the Borough of Ringwood at its Business Meeting of September 16, 2025.

NICOLE LANGENMAYR, RMC
MUNICIPAL CLERK

Council Member	Motion	Second	Ayes	Nays	Abstain	Absent
Matteo-Landis						X
Kerr			X			
Baumgartner						X
Echols		X	X			
Kiraly			X			
Noonan	X		X			
Rubacky			X			

BOROUGH OF TOTOWA
COUNTY OF PASSAIC
STATE OF NEW JERSEY

RESOLUTION NO. 140-2025

RESOLUTION OF THE MAYOR AND COUNCIL OF THE BOROUGH OF TOTOWA ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS the Mayor and Council of the Borough of Totowa recognize the threat that natural hazards pose to people and property within the Borough of Totowa; and

WHEREAS the Mayor and Council of the Borough of Totowa has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Totowa from the impacts of future hazards and disasters; and

WHEREAS adoption by the Mayor and Council of the Borough of Totowa demonstrate their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED, that the Mayor and Council of the Borough of Totowa does hereby do the following:

Section 1. In accordance with New Jersey's rules and regulations, the Mayor and Council of the Borough of Totowa adopt the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

ATTEST:

JOSEPH WASSEL, RMC
MUNICIPAL CLERK

BOROUGH OF TOTOWA

By: John Coiro
JOHN COIRO
MAYOR

I, Joseph Wassel, Municipal Clerk of the Borough of Totowa do hereby certify that the above is a true copy of a Resolution passed by the Municipal Council of the Borough of Totowa at a Regular Meeting held on November 11, 2025.

JOSEPH WASSEL, RMC
MUNICIPAL CLERK

DATED: November 11, 2025

BOROUGH OF WANAQUE
COUNTY OF PASSAIC
STATE OF NEW JERSEY

RESOLUTION # 2025-208

A RESOLUTION OF THE BOROUGH OF WANAQUE ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS the Borough Council recognizes the threat that natural hazards pose to people and property within the Borough of Wanaque; and

WHEREAS the Borough of Wanaque has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Wanaque from the impacts of future hazards and disasters; and

WHEREAS adoption by the Borough Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE BOROUGH COUNCIL OF THE BOROUGH OF WANAQUE THAT:

Section 1. Accordingly, the Borough Council of the Borough of Wanaque hereby adopts the 2025 Passaic County Hazard Mitigation Plan in a form approved by the borough attorney. This plan, approved by the community, may be edited or amended after submission for review; however, it will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

RECORD OF COUNCIL VOTE

Councilman	Motion	Second	Yes	No	Abstain	Absent	Councilman	Motion	Second	Yes	No	Abstain	Absent
Balunis						X	Leonard	X		X			
Cortellessa		X	X				Pasquariello						X
Kronyak			X				Pettet			X			

I hereby certify that the above resolution was passed by the Mayor & Council of the Borough of Wanaque at the Regular Meeting held on September 29, 2025.

ATTEST:

Leena Abaza, RMC, CMC, CMR
Municipal Clerk

Daniel Mahler
Mayor

This resolution, when adopted, must remain in the possession of the Municipal Clerk. Certified copies are available.

BOROUGH OF WOODLAND PARK
COUNTY OF PASSAIC, STATE OF NEW JERSEY
RESOLUTION R25-215

MOTIONED BY: Council President Sica
SECONDED BY: Councilman DeCesare

A RESOLUTION OF THE BOROUGH OF WOODLAND PARK ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the Mayor and Council of the Borough of Woodland Park recognizes the threat that natural hazards pose to people and property within Woodland Park and

WHEREAS, the Mayor and Council of the Borough of Woodland Park has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Borough of Woodland Park from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Mayor and Council of the Borough of Woodland Park demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED Mayor and Council of the Borough of Woodland Park, New Jersey, THAT:

Section 1. In accordance with N.J.S.A. 40:49-1 the Mayor and Council of the Borough of Woodland Park adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

Record of Mayor and Council Vote on Passage

	AYE	NAY	Abstain	Absent		AYE	NAY	Abstain	Absent
Chaabane				✔	Tiseo				✔
DeCesare	✔				Torres	✔			
Gatti	✔				Mayor Kallert	✔			
Sica	✔								

This resolution was approved by the Mayor and Council of the Borough of Woodland Park at a regular scheduled meeting held on the 13th day of August 2025. Signed and sealed before me.

Sandra Olivola, Municipal Clerk

August 13, 2025
Dated

Resolution # 419-25

CITY OF CLIFTON

RESOLUTION OF THE CITY OF CLIFTON ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the Governing Body of the City of Clifton recognizes the threat that natural hazards pose to people and property within the City of Clifton; and

WHEREAS, the City of Clifton has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Clifton from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Governing Body demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED by the Governing Body, of the City of Clifton, in the County of Passaic, in the State of New Jersey, THAT:

Section 1 . It adopts the 2025 Passaic County Hazard Mitigation Plan. This plan approved by the City, may be edited or amended after submission for review, but will not require the City to re-adopt any further iterations. This only applies to this specific plan and does absolve the City from updating the plan in 5 years.

ROLL CALL

Name	1st	2nd	Aye	Nay	Abstain	No Vote	Absent
Councilman D'Amato			✓				
Councilman Gibson			✓				
Councilman Kolodziej	✓		✓				
Councilman Latona			✓				
Councilwoman Pino			✓				
Councilwoman Sadrakula		✓	✓				
Mayor Grabowski			✓				

Adopted: August 6, 2025

Kathleen Tolosi, City Clerk

CITY OF PASSAIC
RESOLUTION NO. 25-09-233

RESOLUTION AUTHORIZING THE ADOPTION OF THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS, the City of Passaic recognizes the threat that natural hazards pose to people and property within City; and

WHEREAS, the City of Passaic has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Passaic from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Passaic City Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED, by the City Council of the City of Passaic, New Jersey, that the City of Passaic adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

INTRODUCED BY COUNCILPERSON: **Maritza Colon Montanez**

SECONDED BY COUNCILPERSON: **Daniel Mayer**

Record of Council Vote on Final Passage	Aye	Nay	Abstain	Absent
COLÓN MONTAÑEZ, M	X			
GARCIA, J.	X			
MELO, T.	X			
LOVE, T.				X
MUNK, C.				X
SCHAER, G.	X			
MAYER, D.	X			

ADOPTED ON: **September 16, 2025**

Gary S. Schaer, Council President

Weatherly Frias, City Clerk

Resolution of the City of Paterson, N.J.

No. 20 Res. # 25:446 Date of Adoption SEPTEMBER 16, 2025

Division

TITLE: A RESOLUTION OF THE CITY OF PATERSON ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

Factual Contents Certified By
Title 08/28/2025 Date

Approved As to Form and Legality on Basis of Facts Set Forth
CORPORATION COUNSEL 9/2/2025 Date

COUNCILPERSON MARITZA DAVILA Introducing the Following Resolution:

WHEREAS the City of Paterson Office recognizes the threat that natural hazards pose to people and property within (*local government*); and

WHEREAS the City of Paterson has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in City of Paterson from the impacts of future hazards and disasters; and

WHEREAS adoption by the City of Paterson demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF PATERSON, NEW JERSEY, THAT:

STATEMENT OF PURPOSE

Section 1. In accordance with the City of Paterson, the Municipal Council of the City of Paterson adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

SECONDED BY COUNCILPERSON LUIS VELEZ

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	*AYE*	*NAY*	*ABSTAIN*	*ABSENT*
1. COTTON, RUBY N.				X
2. DAVILA, MARITZA	X			
3. JACKSON, MICHAEL	X			
4. KHALIQUE, SHAHIN				X
5. MENDEZ, ALEX	X			
6. MIMMS, LILISA	X			
7. OMAR, IBRAHIM	X			
8. UDDIN, MD FORID				X
9. VELEZ, LUIS	X			

Adopted at a meeting of the Municipal Council of the City of Paterson, N.J., September 16, 2025

Council President Dr. Lilisa Mimms

Deputy City Clerk Phyllis Riley

Form 1 This Resolution when adopted must remain in the custody of the City Clerk. Certified copies are available.

County of Passaic

401 Grand Street
Paterson, New Jersey 07505
Tel: 973-881-4402
Fax: 973-742-3746

Legislation Details

File #:	25-930		
Type:	Resolution	**Status:**	Passed
File created:	9/17/2025	**In control:**	Law and Public Safety
On agenda:	9/30/2025	**Final action:**	9/30/2025
Enactment date:	9/30/2025	**Enactment #:**	R-25-923
Title:	RESOLUTION AUTHORIZING THE ADOPTION OF THE 2025 PASSAIC COUNTY NEW JERSEY HAZARD MITIGATION PLAN UPDATE		
Sponsors:			
Indexes:			
Code sections:			
Attachments:	1. Cover Page		

Date	Ver.	Action By	Action	Result
9/30/2025	1	Board of County Commissioners Regular Meeting	Adopted	Pass

County of Passaic

401 Grand Street
Paterson, New Jersey 07505
Tel: 973-881-4402
Fax: 973-742-3746

Legislation Text

File #: 25-930, **Version:** 1

RESOLUTION AUTHORIZING THE ADOPTION OF THE 2025 PASSAIC COUNTY NEW JERSEY HAZARD MITIGATION PLAN UPDATE

WHERAS, the County of Passaic (hereinafter the "County") is a body politic and corporate pursuant to N.J.S.A. 40:18-1 and vested with all rights contained therein; and

WHEREAS, pursuant to N.J.S.A. 40:20-1 the Board of County Commissioner of the County of Passaic (hereinafter the "Board") is vested with managing the property, finances, and affairs of the County; and

WHEREAS, all jurisdictions within the County have exposure to hazards which increase the risk to life, property, environment, and the local economy; and

WHEREAS, proactive mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, the Disaster Mitigation Act of 2000 (P.L. 106-390) passed by the United States Congress established new requirements for pre and post disaster hazard mitigation programs; and

WHERAS, a coalition of Passaic County municipalities with like planning objectives has been formed in an effort to pool resources and create consistent mitigation strategies within the County; and

WHEREAS, the coalition has completed a planning process and found a plan that engages the public, assesses the risk and vulnerability to the impacts of natural hazard, develops a mitigation strategy consistent with a set of uniform goals and objective, and addresses the implementation, evaluation and revising of this strategy; and

WHEREAS, this matter was discussed at the September 2, 2025 meeting of the Law and Public Safety Committee and is now being recommended to the Board for approval.

NOW, THEREFORE, LET IT BE RESOLVED, that the County of Passaic Board of County Commissioners:

1) Adopts in its entirety, the 2025 Passaic County Hazard Mitigation Plan Update (the "Plan") as the jurisdiction's Hazard Mitigation Plan and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.

2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.

3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms

under its jurisdictional authority.

4) Will continue its support of the Mitigation Planning Committee as described within the Plan.

5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

LET IT BE FURTHER RESOLVED, that Resolution No. R-25-0855 dated September 9, 2025 shall be and hereby is repealed.

LET IT BE FURTHER RESOLVED, that the Clerk to the Board, County Counsel, and Director of the Passaic County Board of County Commissioners are authorized to take any other steps necessary to carry out the purpose of this resolution.

KJB

September 30, 2025

Municipal Adoption Resolution
Township of Little Falls, New Jersey

RESOLUTION A 25-08-11 - # 1

A RESOLUTION OF THE *TOWNSHIP OF LITTLE FALLS* ADOPTING THE 2025 PASSAIC COUNTY HAZARD MITIGATION PLAN

WHEREAS the Township of Little Falls recognizes the threat that natural hazards pose to people and property within the Township of Little Falls; and

WHEREAS the Township of Little Falls has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Township of Little Falls from the impacts of future hazards and disasters; and

WHEREAS adoption by the demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE Township of Little Falls, New Jersey, THAT:
Section 1. In accordance with the Township Code, the Township of Little Falls adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

APPROVED: August 11, 2025

By: _____
Mayor James Damiano

ATTEST: By: _____
Cynthia Kraus, RMC

APPROVED AS TO FORM: By: _____
Cynthia Kraus, RMC

Township of West Milford

Passaic County, New Jersey

~ Resolution 2025 - 322 ~

RESOLUTION OF THE TOWNSHIP OF WEST MILFORD, COUNTY OF PASSAIC AND STATE OF NEW JERSEY AUTHORIZING THE ADOPTION OF THE 2025 PASSAIC COUNTY NEW JERSEY HAZARD MITIGATION PLAN

WHEREAS the Township of West Milford recognizes the threat that natural hazards pose to people and property within the Township of West Milford; and

WHEREAS the Township of West Milford has prepared a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Township of West Milford from the impacts of future hazards and disasters; and

WHEREAS adoption by the Township of West Milford demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED that the Township Council of the Township of West Milford, County of Passaic and State of New Jersey in accordance with, the Township of West Milford Governing Body adopts the 2025 Passaic County Hazard Mitigation Plan. This plan, approved by the community, may be edited or amended after submission for review, but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

Adopted: August 13, 2025

Adopted this 13th day of August, 2025
and certified as a true copy of an original.

William Senande

William Senande, Township Clerk

TOWNSHIP OF WAYNE
COUNTY OF PASSAIC
STATE OF NEW JERSEY
2025
RESOLUTION NO. 333

A motion was made by Richard Jasterzbski seconded by Joseph Scuralli that the following resolution be adopted:

ADOPTING THE PASSAIC COUNTY HAZARD MITIGATION PLAN IN ACCORDANCE WITH THE DISASTER MITIGATION ACT OF 2000

WHEREAS, the Township of Wayne recognizes the threat that natural hazards pose to people and property within the Township; and

WHEREAS, the Township plans to adopt a multi-hazard mitigation plan, hereby known as the 2025 Passaic County Hazard Mitigation Plan, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS, the 2025 Passaic County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Township, from the impacts of future hazards and disasters; and

WHEREAS, adoption of the Hazard Mitigation Plan by the Township demonstrates its commitment to hazard mitigation and achieving the goals outlined in the 2025 Passaic County Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED by the Municipal Council of the Township of Wayne that the Township hereby adopts the 2025 Passaic County Hazard Mitigation Plan which plan, approved by the community, may be edited or amended after submission for review but will not require the community to re-adopt any further iterations. This only applies to this specific plan and does not absolve the community from updating the plan in 5 years.

ROLL CALL:

AYES: Jonathan Ettman, Michael Fattal, Richard Jasterzbski, Joseph Scuralli, David Varano, Jason DeStefano

NAYS:

ABSTAIN:

ABSENT: Francine Ritter, Al Sadowski, Jill Sasso

THIS IS TO CERTIFY THAT THE FOREGOING IS A TRUE AND EXACT COPY OF A RESOLUTION ADOPTED BY THE MUNICIPAL COUNCIL OF THE TOWNSHIP OF WAYNE AT A REGULAR MEETING HELD ON AUGUST 20, 2025.

PAUL V. MARGIOTTA
TOWNSHIP CLERK

APPENDIX B: MEETING DOCUMENTATION

Appendix B includes meeting agendas, slides, and minutes (where applicable and available) for meetings convened during the development of the 2025 Passaic County Hazard Mitigation Plan Update.

Passaic County, NJ – Hazard Mitigation Plan 2025 Update
Passaic County Kick-Off | Meeting Minutes

Purpose of Meeting:	Passaic County Kick-Off Meeting
Location of Meeting:	Teleconference
Date of Meeting:	October 23, 2023 @ 3:00 PM

Attendees:

- **Passaic County**
  - Robert Scott, Deputy Coordinator
  - Maria Dombayci, Deputy Coordinator
- **Tetra Tech**
  - Chris Huch, Project Manager
  - Lindsey McCoy, Planner

Agenda Summary: Meeting to discuss the overall planning process; identify expectations from both Tetra Tech and Passaic County during the planning process; inquire on whether Passaic County has any questions regarding the Planning Process for the 2025 Hazard Mitigation Plan update.

Item No.	Description	Action item(s):
1	**Introductions** • Monthly progress meetings	-

2	**Participation**
	• Tetra Tech will track all participant hours
	• Developing new LOIP for distribution
	  ○ Will need to be completed by each participating municipality
	  ○ Need a variety of people from each municipality to participate
	  ○ County intends to distribute LOIP ahead of Planning Partnership kick-off meeting
	  ○ Representation is expected at each meeting
		Tetra Tech
		• Send example LOIP to Passaic County
		
		Passaic County
		• Distribute and collect LOIPs

3	**Steering Committee Make-Up** • Tetra Tech will look at the last 2020 Steering Committee and build a proposed invite list based on new FEMA recommendations. • Should have at least one municipal representative (biggest municipality and smallest municipality is recommended) • Need outside stakeholders (businesses, academia, non-profits, representatives of socially vulnerable/underserved communities) • First Planning Partnership meeting will be within 2 weeks of Steering Committee kick-off • Steering Committee meeting will be held first to establish importance of mitigation planning process, discuss hazards of concern, and outreach strategy	**Tetra Tech** • Identify potential steering committee and stakeholder members **Passaic County** • Identify municipalities and external organizations to have as representatives on SC

4	**Outreach**
	• Website: Tetra Tech will develop, host, and maintain a public mitigation planning website for the project for the duration of the project
	• Surveys for public and stakeholders
	• Survey123 problem identification
	• Story Map
	• 4 public meetings (Can be in person or virtual)
	  ○ First two meetings will be at start of planning process to introduce the planning effort and gather information on problem areas
	  ○ Second two meetings will present the draft plan
		Tetra Tech
		• Create and maintain HP website
		• Create and information gathering surveys
		• Create interactive map

	• Risk Assessment and Mitigation Strategy workshop will be combined, and hosted in person, to present findings from risk assessment and develop mitigation actions from that discussion • Meetings mainly to be held in person, but have the option to pivot to virtual if circumstances warrant it	for problem identification • Create interactive StoryMap • Facilitate four public meetings
5	**Meetings According to CRS Standards** • This means more meetings than last round; will need to have all meetings be public • Meetings will need to be advertised by the County • 2 public meetings (one during planning process, one when draft is posted)	**Tetra Tech** • Develop outreach materials **Passaic County** • Advertise all meetings via social media, word of mouth, newsletters, etc.
6	**Alignment with NJ SHMP** • Tetra Tech is currently working on the NJSHMP and can bring information, data, and the latest guidance for local plans into the planning process along the way	**Tetra Tech** • Incorporate latest guidance, information, and data from the State
7	**Capability Assessment** • Will review plans and programs at the county level • Will want the County and Steering Committee to point to any new plans that may not be readily available to be included in the review • Municipalities will have worksheet packets. Worksheets will be pre-populated with information Tetra Tech staff find online, and information carried over from last plan. These must be completed in a timely manner.	**Tetra Tech** • Review County-level plans and programs to integrate • Pre-populate municipal worksheets with information from 2020 HMP and information found on municipal webpages **Passaic County** • Identify new plans to be incorporated

8	**Risk Assessment**
	• Current hazards:
	  ○ Coastal Storm (including storm surge).
	  ▪ Potentially combine with flood and severe weather?
	  ○ Dam Failure
	  49 high hazard dams in the County
		Tetra Tech
		• Incorporate new FEMA requirements into hazard profiles

	Would want all dam EAPs and dam failure inundation layers the County has on hand ○ Disease Outbreak* ○ Drought ○ Earthquake ▪ Hazus: Two earthquake scenarios (500-, and 2,500-year mean return periods) ○ Extreme Temperature ○ Flood including riverine (inland) flooding, flash flooding, urban/stormwater flooding and sea level rise ▪ Hazus: One flood scenario (1% annual chance event) ○ Geological Hazards (landslide and subsidence)* ○ Hazardous Materials ○ Infestations* ○ Severe Weather ▪ Hazus: Two hurricane/wind scenarios (100- and 500-year mean return) ○ Severe Winter Weather ○ Wildfire * hazards to potentially reconsider in 2025 draft • Social, economic, and environmental vulnerabilities to all hazards will be assessed. • Climate change, socially vulnerable populations will have more emphasis during the vulnerability assessment. • Suggest eliminating non-natural hazards and consider which hazards can be supported by mitigation actions for each municipality (new FEMA requirement) • Community lifelines concept will be used to analyze critical facilities	**Passaic County** • Help identify contacts for socially vulnerable groups
9	**Data Collection** • **NFIP Data** ○ Already received NFIP data • **GIS Data** ○ Tetra Tech will want to set up a separate meeting with the County's GIS department/lead to talk to with Tetra Tech's GIS staff ○ A GIS wish list will be shared prior to the meeting and reviewed ○ Review of community lifelines ○ Will use Survey123 to identify problem areas	**Tetra Tech** • Arrange GIS data sharing meeting with Passaic County GIS • Send GIS wish list to Passaic County • Create interactive map for problem identification **Passaic County** • Review community lifelines • Attend GIS Data Sharing meeting • Use Survey 123 to identify problem areas
10	**Mitigation Strategy** • Review of last plan's actions in the BATool[SM]: narrative of action statuses will be needed • SWOO by Planning Partnership and Steering Committee	**Tetra Tech** • Ensure the BATool[SM] has all

	• Each municipality will need to include at least one action per hazard of concern
	  ○ Flooding, flash flooding, and power failure are points of interest for mitigation actions across the State
	  ○ NJOEM encourages municipalities to plan for how to rebuild after 500-year flooding event
	  ○ FEMA is encouraging Substantial Damage Management plans to control the re-build of communities after an event, and Disaster Debris Management plans to help facilitate the clean-up process
	• Prioritization using NJSHMP new STAPLEE method
		2020 HMP actions
		
		Passaic County
		• Review 2020 HMP actions in BATool[SM]

11	**Review, Approval, Adoption** • Tetra Tech will submit the draft plans to NJOEM and FEMA • Any edits required by FEMA and NJOEM will be reviewed with Steering Committee and local municipalities as necessary • Tetra Tech will remain on through collection of all adoptions	**Tetra Tech** • Submit 2025 HMP to the State and FEMA • Revise simple edits • Address complex recommendations with County and municipalities if needed • Collect all plan adoption paperwork
12	**Questions/Discussion** • Next OEM Coordinators' meeting will be held at the end of November/beginning of December – will be used as an opportunity to introduce HMP process • A monthly meeting will be scheduled with Tetra Tech and OEM Coordinators to keep track of planning progress • Meeting to be scheduled with Tetra Tech GIS and County GIS to gather information for Risk Assessment	-

PASSAIC COUNTY HAZARD MITIGATION PLAN - UPDATE

Steering Committee Kick-Off Meeting

February 20, 2024 at 9:00 AM

1 Introductions

2 Hazard Mitigation Overview
- Purpose and expected outcomes of the Hazard Mitigation Plan
- 2025 enhancements

3 Project Organization
- Steering Committee
- Planning Team – All Municipal Participants + Steering Committee
- New Jersey Office of Emergency Management
- Stakeholders

4 Planning Process Overview
- Phase 1 – Organize Resources
- Phase 2 – Risk Assessment
- Phase 3 – Public Outreach
- Phase 4 – Capability and Mitigation Strategy
- Phase 5 – Assemble the Plan
- Phase 6 – Plan Maintenance
- Phase 7 – Plan Review and Adoption

5 Project Schedule
- Overview and Milestones
- Meeting Schedule

6 Questions/Next Steps/Discussion

Passaic County, NJ – Hazard Mitigation Plan 2025 Update
Steering Committee Meeting #1 – Kick-Off | Meeting Minutes

Purpose of Meeting:	Steering Committee Meeting #1 – Kick-off meeting to discuss the HMP update
Location of Meeting:	Passaic County Training Academy – 300 Oldham Rd., Wayne, NJ
Date of Meeting:	February 20, 2024 | 9:00 am – 10:15 am

Attendees:

- **Passaic County**
  - George Rosenthal, OEM Coordinator
  - Robert Scott, Deputy OEM Coordinator
  - Maria Dombayci, OEM
  - Chief Thomas Adamo, Passaic County Sheriff's Office
  - Jospeh Pera, Passaic County Engineer
  - Dr. Arti Kakkar, Director of Human Services
  - James Humphries, Director Planning, Science & GIS
  - Andras Holzman, Director of Planning
- **Paterson (C)**
  - Steven Olimpio, Paterson School District
- **Pompton Lakes (B)**
  - Albert Evangelista, OEM Coordinator
- **Red Cross**
  - Sara Huisking, Executive Director
- **Rutgers**
  - Ashlyn Spector, Unit Manager
- **NJ Department of Education**
  - Alicia Anderson, Executive Assistant
- **NJ State Police**
  - Joseph Palach, Trooper
  - Cansu Yerdelenli, NJOEM
- **Tetra Tech**
  - Chris Huch, Project Manager
  - Heather Apgar, Hazard Mitigation Planner
  - Emma Kilkelly, Lead Planner

Agenda Summary: HMP kick-off meeting with Steering Committee members to discuss the overall planning process, provide understanding of participating on the Steering Committee, and walk through the steps taken to update the HMP

Item No.	Description	Action item(s):
1	**Introductions** • Passaic County OEM welcomed everyone • Tetra Tech (H. Apgar) introduced herself • Steering Committee members introduce themselves • Ms. Apgar began the presentation	-

2	**Hazard Mitigation Overview**
	• H. Apgar provided an overview of hazard mitigation, hazard mitigation planning, how the plan will be updated for 2025, and the changes that will be made in this update (e.g., updated FEMA HMP requirements, upcoming NJOEM requirements for local HMPs).
	• Mr. Huch discussed the new requirements and approaches for the 2025 HMP update
	  ○ Increased participation requirements
	  ○ Increased outreach to socially vulnerable populations and underserved communities
	  ○ At least one mitigation action for each hazard of concern for each participating jurisdiction
	  ○ Shift from critical facilities to community lifelines (include important services as well as fixed location facilities)	

3	**Project Organization** • Core Planning Team – Passaic County OEM and Tetra Tech – leading the update effort; facilitate meetings; assist local municipalities throughout the plan update	

	• Steering Committee – oversees the planning process and make key decisions throughout (identify hazards of concern, finalize goals/objectives, review sections of the plan, identify mitigation actions) • Planning Partnership – represents their municipality and will be responsible for updating the municipal annex (chapter) of the HMP; responsibilities include actively participating throughout the process, complete/submit the Letter of Intent to Participate (LOIP), assist with public and stakeholder outreach, adopt the plan, and implement the plan; prior to submitting for public review, each municipality will need to provide an annex sign off sheet • Stakeholders – can include neighboring counties, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and nonprofit organizations. We will put together a draft list of stakeholders and ask for your input. • NJOEM – provide the County guidance throughout the HMP update and will review/approve the plan before it is submitted to FEMA.	

4	**Planning Process Overview**
	• The HMP will be developed using a 7-phase approach: organize resources, risk assessment; public outreach; capability and mitigation strategy; assemble the plan; plan maintenance; and plan review/adoption
	• Organize Resources
	  ○ Identifying and coordinating the Steering Committee, Planning Partnership, and Stakeholders
	  ○ Review and identify critical facilities/community lifelines – Steering Committee will review list of county-owned facilities to see if anything needs to be updated, added, etc.
	  ○ Identify stakeholders to be involved in the planning partnership – Steering Committee will review list and provide input
	  ○ Identify problem areas and new development throughout the County through Survey123
	• Risk Assessment
	  ○ Review/finalize the hazards of concern; hazards of concern from 2020 HMP include:
	  ▪ Coastal Storm – based on the type of storms included in this profile and their impacts, this hazard can be split into the impacts in flood, severe weather, and severe winter weather
	  ▪ Dam Failure – there are high hazard dams and other dams of concern in the county; should remain as a hazard of concern
	  ▪ Drought – little agriculture in the county; what about drinking water resources?
	  ▪ Extreme Temperature – includes heat and cold events
	  ▪ Flood – includes coastal, riverine, flash flood, and urban
	  ▪ Geologic – includes landslides and sinkholes, both are secondary impacts from other hazards; can these be incorporated into flood, severe weather, severe winter weather, etc. as a cascading impact?
	  ▪ Severe Weather – includes wind, lightning, hail
	  ▪ Severe Winter Weather – includes snow, ice, blizzards
	  ▪ Wildfire – while not a frequent occurrence, the largest wildfire in NJ occurred in West Milford in 2023. There was discussion to potentially remove the wildfire hazard, but Mr.	

	Huch noted that the recent event likely justifies leaving the hazard in place for the 2025 update ○ Tetra Tech will distribute an online form to review and determine the list of hazards of concern for the 2025 HMP • Capability Assessment ○ Will include a review of plans in place to guide development, codes to guide building regulations, programs for maintenance activities, and staff to carry out policies are procedures Countywide. This process will be done with each individual municipality. • Public Outreach ○ Public outreach will occur continually throughout the planning process through social media posts, surveys, County and municipal websites, and the StoryMap. ○ The public will be able to suggest potential actions through a Survey123 tool ○ It was suggested that public outreach to neighboring communities include those communities that are located upstream of major rivers that contribute to flooding. Mr. Huch stated that outreach will be expanded to include these municipalities. • Mitigation Strategy ○ The Mitigation Strategy includes goals, actions, and an action plan that guides prioritization and implementation of mitigation actions. ○ Proposed goals and objectives for the 2025 update will be sent to the Steering Committee for review and approval. ▪ The Steering Committee discussed inclusion of a potential new goal to build collaborative flood mitigation strategies along rivers/within watersheds. • Assemble the Plan ○ Tetra Tech will develop the draft plan which will be distributed to the Steering Committee and Planning Partnership for review. • Plan Maintenance ○ Maintenance procedures will be developed by the Steering Committee to ensure the HMP is kept up to date annually. • Plan Review and Adoption ○ There will be a 30 day public review period, a review by NJOEM, and a review by FEMA. Each review may result in requests for edits. ○ FEMA gives final approval for the plan. ○ Each municipality and the County will need to formally adopt the plan via resolution.	
5	**Project Schedule** • Kick-Off Meeting – TODAY! • Goals and Finalize Hazards – April 2024 • Risk Assessment – February-May 2024 • Identify Actions – June-December 2024 • Finalize the Plan – December 2024 • Draft Plan Completed – January 2025 • Draft Plan Submitted to NJOEM – May 2025 • Draft Plan Submitted to FEMA – July 2025	-
6	**Next Steps** • Review goals and objectives	**Tetra Tech**

	• Review hazards of concern	• Distribute meeting minutes and surveys for reviews of hazards and goals. **Steering Committee** • Contribute through participation in surveys.
7	**Questions/Discussion** • The Steering Committee discussed a potential action to increase education and outreach to OEM officials and boards of education on the decision to move to remote learning during unsafe conditions (such as during a storm or flood). • The Steering Committee discussed using the HMP process to identify opportunities for better regional coordination of evacuations/road closures.	**Tetra Tech** • Continue to gather information on these potential mitigation strategies.



TETRA TECH

Passaic County Multi-Jurisdictional Hazard Mitigation Plan 2025 Update

Steering Committee Kick-Off Meeting

February 20, 2024

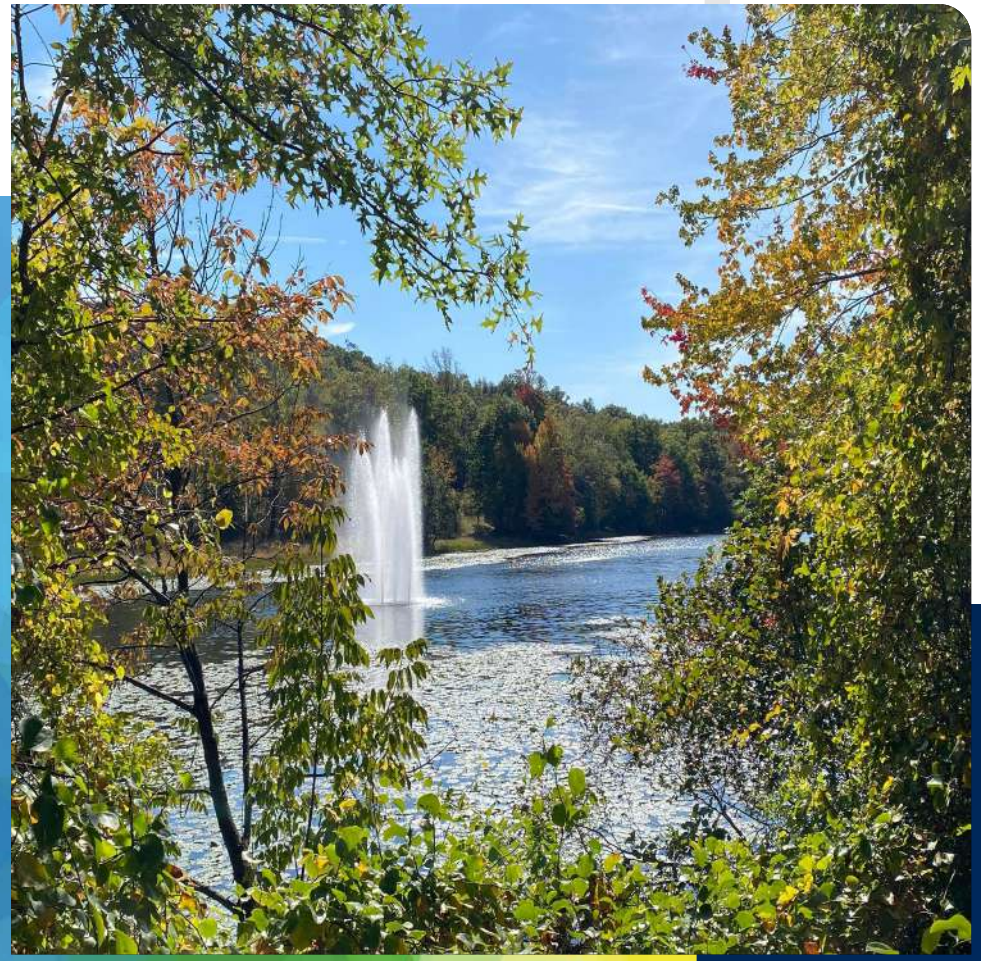
While waiting for the meeting to start, please sign-in using the printed sign-in sheet.



Today's Agenda

1. Welcome and Introductions
2. Hazard Mitigation Planning Overview
3. Project Organization
4. Steering Committee Responsibilities
5. Planning Process Overview
6. Schedule
7. Questions/Next Steps/Wrap Up





Hazard Mitigation Overview

Mitigation planning happens before a disaster strikes. It results in safer, more resilient communities – reducing risk for the residents, businesses, and critical services in Passaic County.

Hazard Mitigation Planning Overview



- ✓ Authorized by the Disaster Mitigation Act of 2000
- ✓ Provides an overview of the impacts of natural hazards on communities
- ✓ Provides a roadmap to reducing the impact of these hazards
- ✓ Requires a FEMA-approved natural hazard mitigation plan to be eligible for Pre-Disaster Mitigation Funding
- ✓ 5-year updates required to maintain eligibility

- What is hazard mitigation?
- Why update the plan?
- What is the process?

What is Hazard Mitigation?

Mitigation is a sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event

-or-

Any action taken to reduce future disaster losses



“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability…” (CFR).

Why Update?

- The mitigation plan update will:
  - Help prepare for and mitigate hazards
  - Eligibility for pre- and post-disaster mitigation funding
  - Incorporate new FEMA requirements
- What is at risk in Passaic County?
- Which hazard do you think occurred the most since 2020?

January 2020 – July 2023	
Hazard	**Occurrences**
Blizzard	0
Extreme Cold, Cold/Wind Chill	0
Drought	0
Heat, Excessive Heat	0
Flood/Flash Flood	14
Hail	3
Heavy Rain	0
Hurricane/ Tropical Storm/ Tropical Depression	1
Lightning/ Thunderstorm	8
Tornado/Funnel Cloud	0
Wind	2
Winter Weather	10
Wildfire	0
TOTAL	**38**

Source: NOAA NCEI Severe Weather Inventory 2023

Differences from the 2020 HMP Planning Process

- Involvement – engaged and actively participating
- Public and stakeholder outreach
- Socially vulnerable and underserved communities
- Climate change
- Mitigation actions for every hazard of concern



Project Organization

Working with individuals, agencies, neighboring jurisdictions, businesses, and other partners for a successful mitigation planning process.

Project Organization

Core Planning Team

Passaic County Office of Emergency Management, Tetra Tech

Steering Committee

Planning Partnership

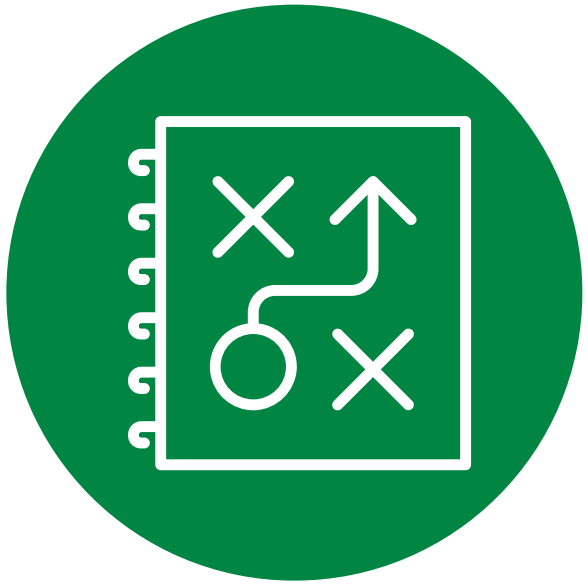
Stakeholders

New Jersey Office of Emergency Management (NJOEM)

Steering Committee Role and Responsibilities



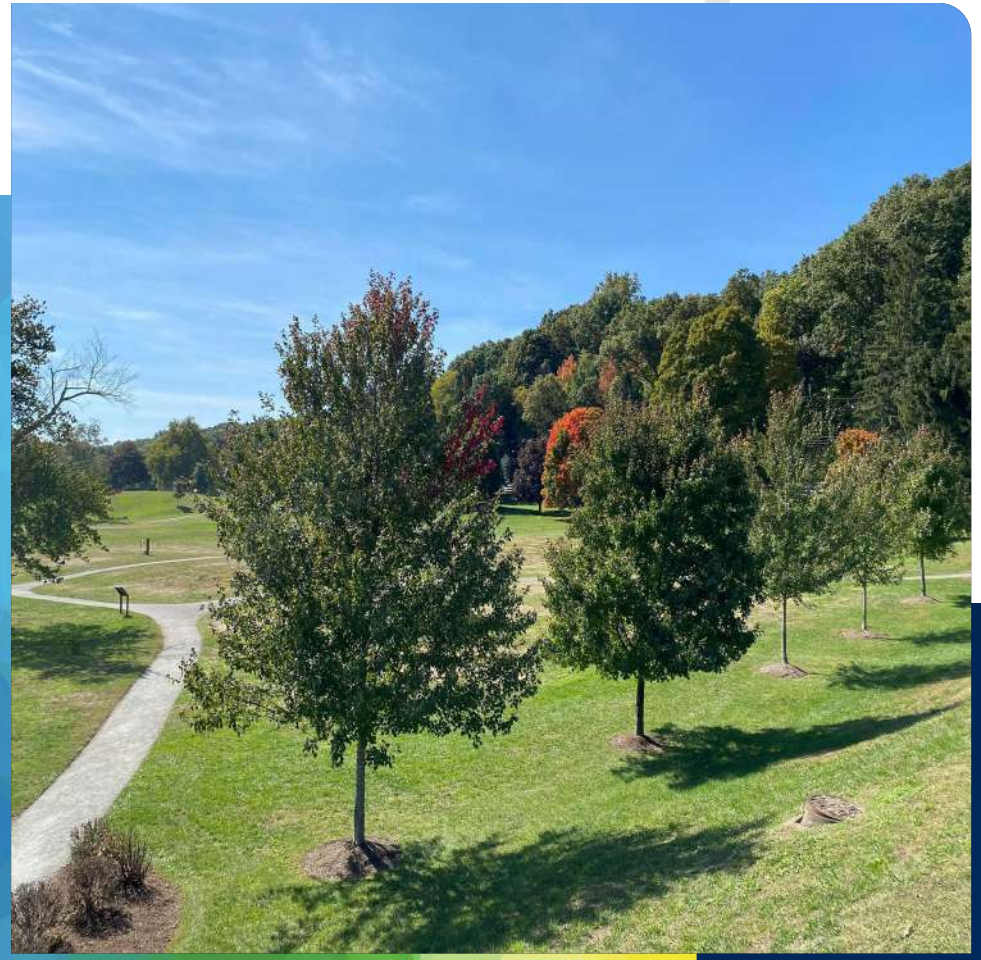
Provide Guidance and Leadership



Oversee the Planning Process



Act as Points of Contact for Planning Partners and Stakeholders



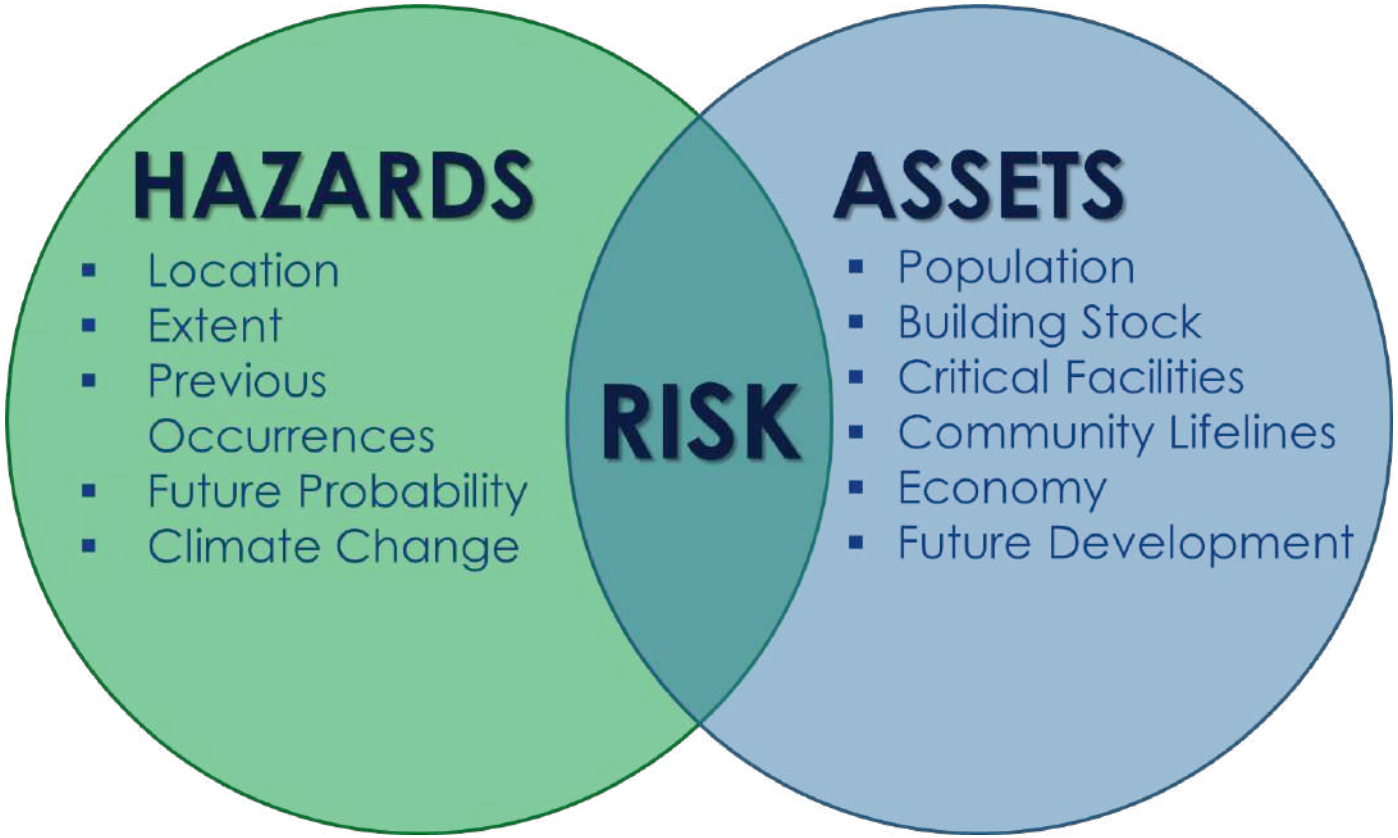
Planning Process Overview

A well-defined planning process is essential to the success of Passaic County's HMP Update.

Planning Process Overview

1. Planning Process
2. Risk Assessment
3. Public Involvement Strategy
4. Mitigation Strategy
5. Plan Maintenance
6. Plan Update and Deliverables
7. Plan Adoption
8. Project Management and Coordination

Update Risk Assessment

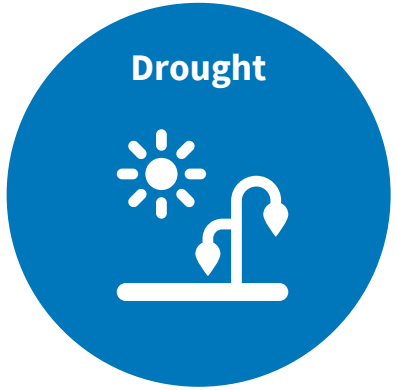


- Update Assets
- Examine Previous Impacts
- Analyze Risks
- Review with Steering Committee
- Risk Assessment Meeting

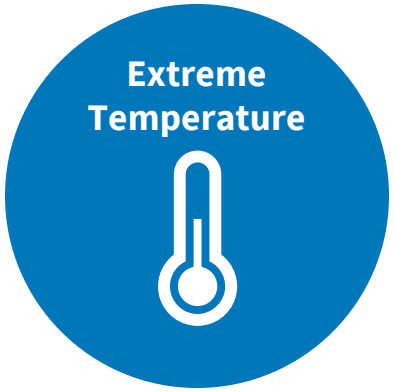
Hazards of Concern

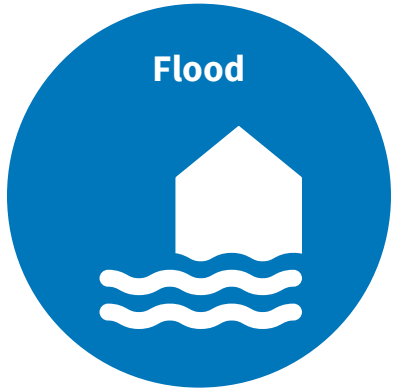




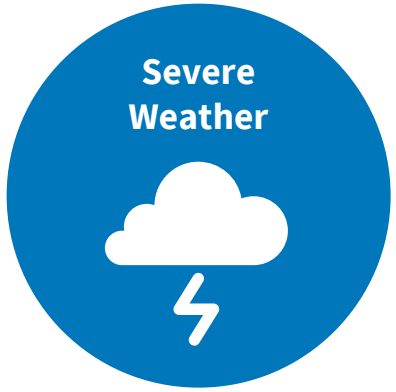
















Critical Facilities and Community Lifelines

- **Critical Facilities** provide essential services to the community, especially before, during, and after a disaster.
- **Community Lifelines** provide services that allow continuity of operations of critical business and government functions, and crucial to health and safety of residents.



Critical Facilities and Community Lifelines



Safety and Security

- Correctional
- Dam
- Daycare
- EOC
- Fire/EMS
- Government / Municipal Hall
- Historic Sites
- Library
- Military
- Police
- School



Food, Hydration, Shelter

- Shelter
- Grocery Stores
- Food Distribution Centers



Health and Medical

- Medical
- Senior Care Facilities



Energy

- Electric Substation
- Power Lines

Critical Facilities and Community Lifelines



Communications

- Communication Towers



Transportation

- Airport
- County Roads
- State Highways
- Light Rail
- Intermodal Transit



Hazardous Materials

- Tier Facilities
- Chemical

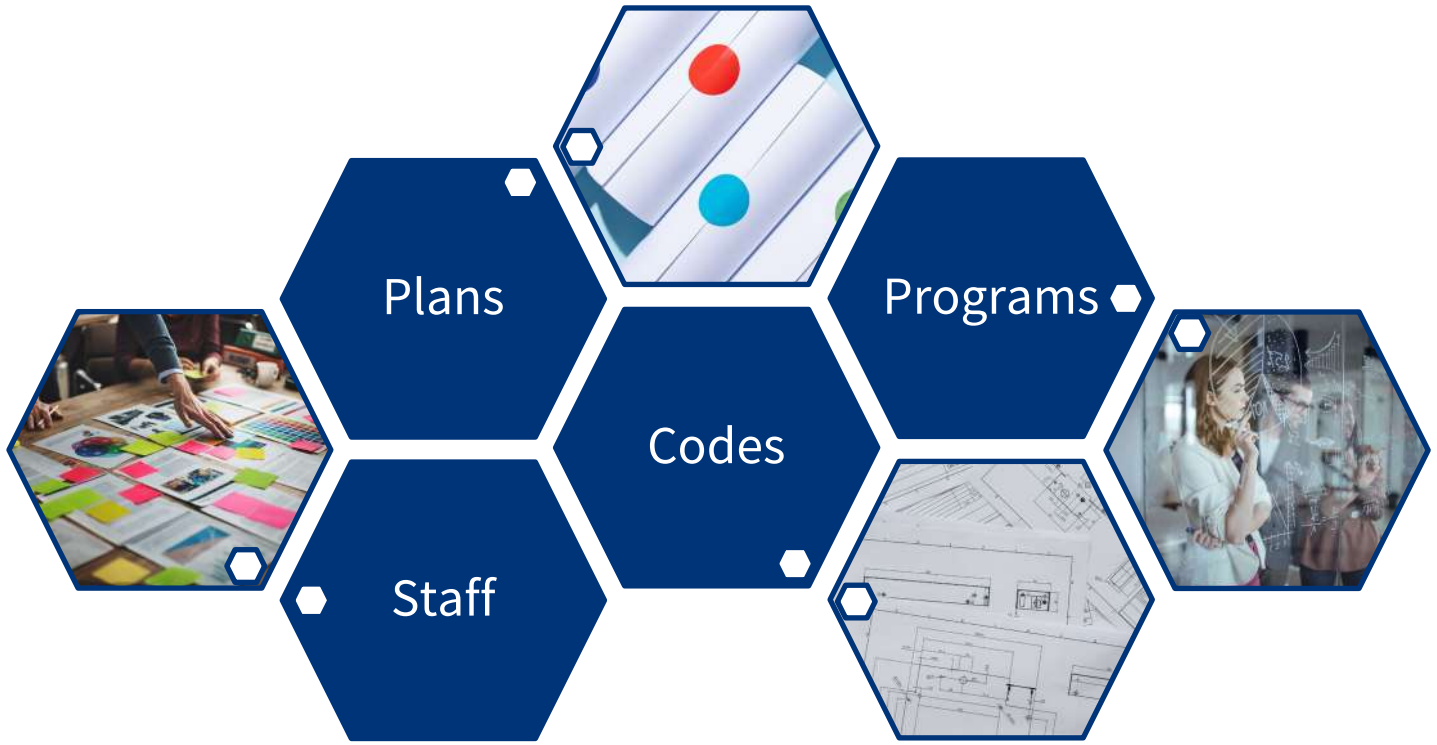


Water Systems

- Potable Pump Station
- Wastewater Pump
- Wastewater Treatment Plant
- Water Tower
- Potable Well

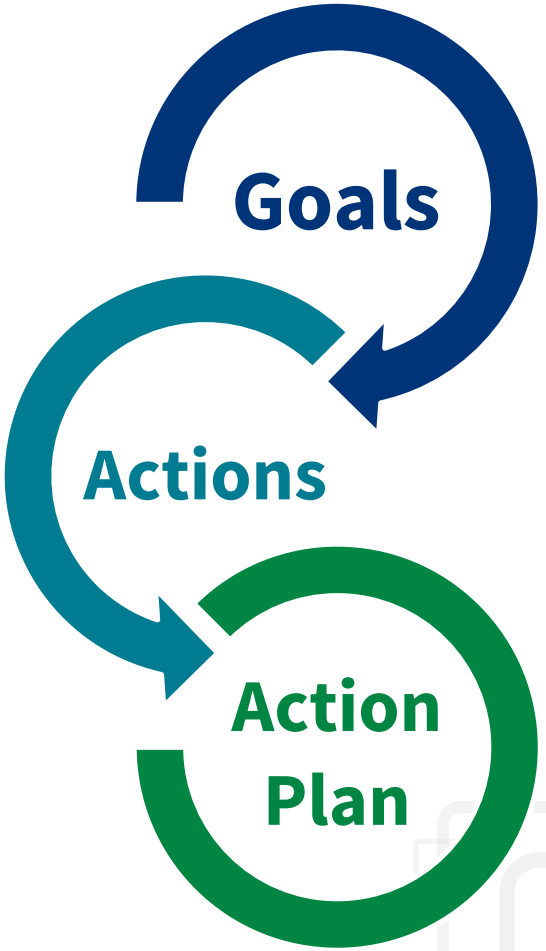
Capability Assessment

- Capabilities
  - What does your jurisdiction use to reduce risk to hazards?



Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce hazard risk?
- Action Plan
  - How will the actions be prioritized and implemented?



Goals and Objectives – Review and Update

Goal Number	2020 Goal	Modify, Add, or Remove?
G-1	Protect Life	
G-2	Protect Property	
G-3	Increase Public Preparedness and Awareness	
G-4	Develop and Maintain an Understanding of Risks from Hazards	
G-5	Enhance County and Local Mitigation Capabilities to Reduce Hazard Vulnerability	
G-6	Support Continuity of Operations Pre-, During, and Post-Hazard Events	
Additional Goals?		

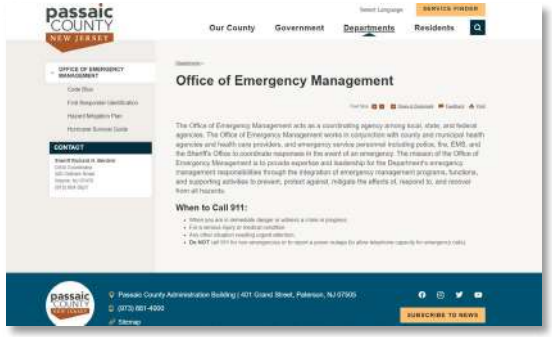
Goal Protect Property

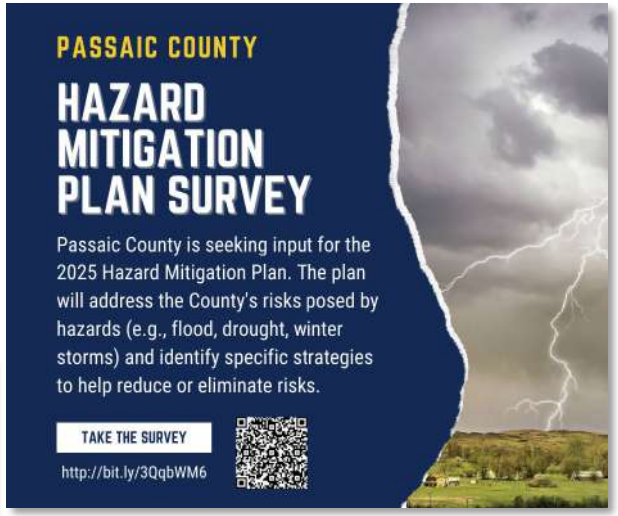
Objectives Reduce the number of vulnerable structures in flood hazard areas.

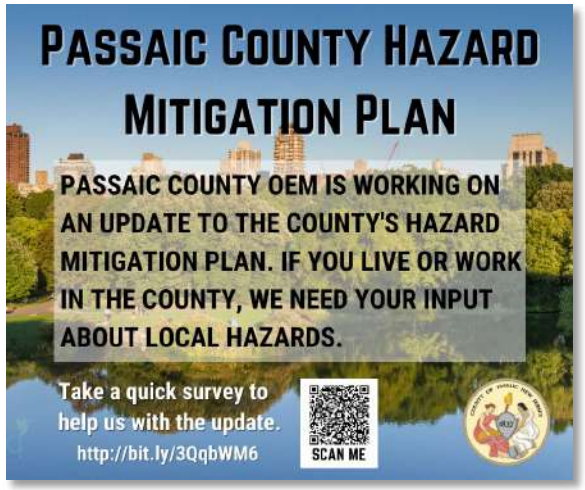
Actions Amend zoning ordinance to permit only open space and uses within floodplains.

Public Outreach Strategy

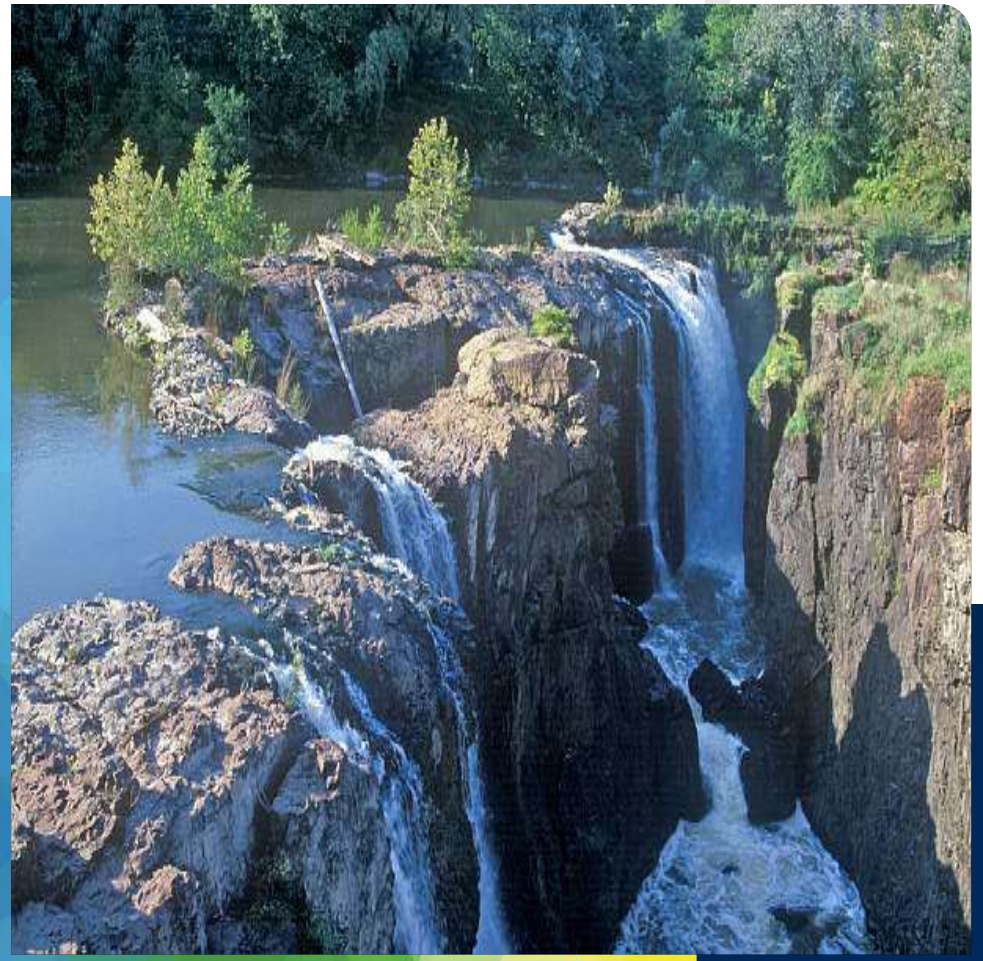
- Public Outreach Toolkit
  - Social media templates and posts
  - Press release templates
  - Printable materials
- Surveys
  - Stakeholders
  - Neighboring communities
  - Public
- County Website
- StoryMap











Project Schedule

Upcoming meetings and key milestones throughout the HMP update process

Schedule

1 Planning Process

2 Risk Assessment

3 Public Involvement Strategy

4 Mitigation Strategy

5 Plan Maintenance

6 Plan Update and Deliverables

7 Plan Adoption

8 Project Management and Coordination

Kick-Off Meetings – TODAY!

- Goals and finalize hazards – April 2024
- Risk Assessment – February-May 2024

Identify Actions – June-December 2024

Finalize by November 2024

- Draft by January 2025
- Draft to NJOEM by May 2025
- Draft to FEMA by July 2025



Questions?



Passaic County Project Contact

Maria Dombayci, Office of Emergency Management
(973) 904-3621 | mariado@passaiccountynj.org

Tetra Tech Project Manager

Chris Huch, CFM
(973) 630-8357 | chris.huch@tetratech.com

Thank You!

PASSAIC COUNTY HAZARD MITIGATION PLAN - UPDATE

Planning Partnership Kick-Off Meeting

February 20, 2024 at 11:00 AM

1 Introductions

2 Hazard Mitigation Overview
- Purpose and expected outcomes of the Hazard Mitigation Plan
- 2023 enhancements

3 Project Organization
- Steering Committee
- Planning Team – All Municipal Participants + Steering Committee
- New Jersey Office of Emergency Management
- Stakeholders

4 Planning Process Overview
- Phase 1 – Organize Resources
- Phase 2 – Risk Assessment
- Phase 3 – Public Outreach
- Phase 4 – Capability and Mitigation Strategy
- Phase 5 – Assemble the Plan
- Phase 6 – Plan Maintenance
- Phase 7 – Plan Review and Adoption

5 Homework
- Worksheet A – Previous Events
- Worksheet B – Capability Assessment
- Worksheet C – NFIP Summary
- Worksheet D – Action Review
- Worksheet E – New Development

6 Project Schedule
- Overview and Milestones
- Meeting Schedule

7 Questions/Next Steps/Discussion

Passaic County, NJ – Hazard Mitigation Plan 2025 Update
Planning Partnership Meeting #1 – Kick-Off | Meeting Minutes

Purpose of Meeting:	Planning Partnership Meeting #1 – Kick-off meeting to discuss the HMP update
Location of Meeting:	Passaic County Training Academy – 300 Oldham Rd., Wayne, NJ
Date of Meeting:	February 20, 2024 | 11:00 am – 12:05 pm

Attendees:

- **Passaic County**
  - Maria Dombayci, OEM
  - Robert Scott, Deputy OEM Coordinator
  - George Rosenthal, OEM Coordinator
  - Edward Murphy, OEM
  - Thomas Adamo, Sheriff's Office
  - Jospeh Pera, County Engineer
- **Bloomingdale (B)**
  - Michael Hudson, OEM Coordinator
- **Clifton (C)**
  - Lt. Agnelina Tirado, OEM Coordinator
  - Capt. Jeffrey Bracken, OEM Deputy Coordinator
  - Michael Onder, OEM
  - Jason Van Winkle, Department of Public Works
  - Capt. Darren Kester, Police Commander
  - Jennifer Terwilliga, Health Department
  - Edith Mayton, Finance Department
- **Hawthorne (B)**
  - Matthew Fenkart, OEM
  - Andrew Skae, OEM
  - Laurie A. Foley, CFO
  - Michael Carelli, Administrator
  - John Lane, Mayor
- **Little Falls (Twp)**
  - Daniel Gianduso, OEM Coordinator
  - Ron Campbell, Department of Public Works
  - Bryan Prall, Police Department
- **North Haledon (B)**
  - Chief Todd Darby, OEM Coordinator
  - Anthony Conforti, OEM Deputy Coordinator
- **Passaic (C)**
  - Capt. Piyush Patel, OEM Coordinator
  - Omar Garcia, CFO
  - Ricardo Fernandez, Administrator
  - Joe Colon, City Hall
  - Alberto M. Ventura, Construction Officer
  - Pat Trentacost, Fire Department
  - Bob Munier, Fire Department
  - Fred Corbitt, Department of Public Works
  - Vivian Vergel, Engineering Department
  - Weatherly Frias, Clerk
- **Paterson (C)**
  - Steven Olimpio, Paterson School District
  - Troy Ayers, OEM Coordinator
  - Libra Jones, OEM Deputy Coordinator
  - Capt. Herb Eggers, OEM
- **Paterson (C) (cont.)**
  - Tyrome Joyner, OEM
  - Det. Joseph Ricciardi, OEM
  - James McGrath, P.E., City Engineer
  - Jose Castro, Fire Department Chief
  - Michael Saginario, Police Department
  - Deborah Bravo, Mayor's Office
- **Pompton Lakes (B)**
  - Albert Evangelista, OEM Coordinator
  - Daniel Cottrell, OEM Deputy Coordinator
  - Derek Clark, Police Department
  - Elizabeth Brandsness, Clerk
  - Anthony J. Rodriguez, Police Department
  - Maria Kent, Borough Councilwoman
- **Prospect Park (B)**
  - Ariosto Rodriguez, OEM Coordinator
  - Yeisy Reyes, OEM Deputy Coordinator
  - Walter Richmond, Police Department
  - Steven Damiano, Police Department
  - David Garval, Borough Engineer
- **Ringwood (B)**
  - Patrick Murray, Jr., OEM Coordinator
  - Scott Heck, OEM Deputy Coordinator
- **Wanaque (B)**
  - Thomas Carroll, OEM Coordinator
  - Tad J. Skawinski, Department of Public Works Superintendent
  - Paul M. Carelli, Administrator
  - Keith Spillane, Police Department
- **Wayne (Twp)**
  - Capt. Dan Daly, OEM Coordinator
  - Heather Vitz-Del Rio, Department of Public Works Director
  - Eric Fedor, Department of Public Works Assistant Director
- **West Milford (T)**
  - Michael Weber, OEM Deputy Coordinator
- **Woodland Park (B)**
  - Capt. Joseph Domicolo, OEM Coordinator
  - John Pietrowski Jr., Department of Public Works Superintendent
- **NJ State Police**
  - Joseph Palach, Trooper
  - Cansu Yerdelenli, NJOEM
- **Tetra Tech**
  - Chris Huch, Project Manager
  - Heather Apgar, Hazard Mitigation Planner
  - Emma Kilkelly, Lead Planner

Agenda Summary:	The purpose of the meeting was to introduce the Planning Partnership members and contract consultant, provide an overview of the hazard mitigation planning process, discuss potential changes to the plan's goals and objectives, and to address any questions or concerns that participants may have.

Item No.	Description	Action item(s):
1	**Introductions** • Passaic County OEM welcomed everyone. • Mr. Huch from Tetra Tech introduced himself and the Tetra Tech team. • Cansu Yerdeleni from NJOEM discussed NJOEM priorities for the planning process and support that NJOEM can provide municipalities. • Mr. Huch began the presentation.	-
2	**Hazard Mitigation Overview** • Mitigation describes actions taken to help reduce or eliminate the long-term risks/damages caused by hazards. • Having an HMP permits eligibility for FEMA pre- and post-disaster grant funding and are required to be updated every five years to maintain eligibility for these funds. • Must meet FEMA's new 2023 guidelines, which include an increase in participation, discussions on climate change, outreach to socially vulnerable populations, increased documentation needs, and to show how existing capabilities are integrated into the plan. • Numerous staff from each municipality are encouraged to participate and provide input. • All jurisdictions are required to have at least one mitigation action per hazard identified.	-
3	**Project Organization** • Core Planning Team – Passaic County OEM and Tetra Tech – leading the update effort; facilitate meetings; assist local municipalities throughout the plan update. • Steering Committee – oversees the planning process and make key decisions throughout (identify hazards of concern, finalize goals/objectives, review sections of the plan, identify mitigation actions). • Planning Partnership – represents their municipality and will be responsible for updating the municipal annex (chapter) of the HMP; responsibilities include actively participating throughout the process, complete/submit the Letter of Intent to Participate (LOIP), assist with public and stakeholder outreach, adopt the plan, and implement the plan; prior to submitting for public review, each municipality will need to provide an annex sign off sheet. • Stakeholders – can include neighboring counties, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and nonprofit organizations. We will put together a draft list of stakeholders and ask for your input. • NJOEM – provide the County guidance throughout the HMP update and will review/approve the plan before it is submitted to FEMA.	**Planning Partnership:** • Submit letters of intent to participate to County OEM.

4	**Planning Process Overview**
	• The HMP will be developed using a 7-phase approach: organize resources, risk assessment; public outreach; capability and mitigation strategy; assemble the plan; plan maintenance; and plan review/adoption.
	• Organize Resources
	  ○ Identifying and coordinating the Steering Committee, Planning Partnership, and Stakeholders
	  ○ Review and identify critical facilities/community lifelines – Steering Committee will review list of county-owned facilities to see if anything needs to be updated, added, etc.
	  ○ Identify stakeholders to be involved in the planning partnership – Steering Committee will review list and provide input,
	  ○ Identify problem areas and new development throughout the County through Survey123
	• Risk Assessment
	  ○ The Steering Committee will review/finalize the hazards of concern; hazards of concern from 2020 HMP include:
	  ▪ Coastal Storm - includes hurricanes and nor'easters
	  ▪ Dam Failure
	  ▪ Drought
	  ▪ Extreme Temperature – includes heat and cold events
	  ▪ Flood – includes coastal, riverine, flash flood, and urban
	  ▪ Geologic – includes landslides and sinkholes
	  ▪ Severe Weather – includes wind, lightning, hail
	  ▪ Severe Winter Weather – includes snow, ice, blizzards
	  ▪ Wildfire
	  ○ The Steering Committee will identify the final list of hazards of hazards of concern for the 2025 HMP update
	• Capability Assessment
	  ○ Will include a review of plans in place to guide development, codes to guide building regulations, programs for maintenance activities, and staff to carry out policies are procedures Countywide. This process will be done with each individual municipality.
	• Public Outreach
	  ○ Public outreach will occur continually throughout the planning process through social media posts, surveys, County and municipal websites, and the StoryMap.
	  ○ The public will be able to suggest potential actions through a Survey123 tool
	  ○ Based on feedback from the Steering Committee, outreach to neighboring communities will include those communities that are located upstream of major rivers that contribute to flooding.
	• Mitigation Strategy
	  ○ The Mitigation Strategy includes goals, actions, and an action plan that guides prioritization and implementation of mitigation actions.
	  ○ Proposed goals and objectives for the 2025 update will be sent to the Steering Committee for review and approval.
		-

	▪ The Steering Committee discussed inclusion of a potential new goal to build collaborative flood mitigation strategies along rivers/within watersheds.
	• Assemble the Plan
	  ○ Tetra Tech will develop the draft plan which will be distributed to the Steering Committee and Planning Partnership for review.
	• Plan Maintenance
	  ○ Maintenance procedures will be developed by the Steering Committee to ensure the HMP is kept up to date annually.
	• Plan Review and Adoption
	  ○ There will be a 30 day public review period, a review by NJOEM, and a review by FEMA. Each review may result in requests for edits.
	  ○ FEMA gives final approval for the plan.
	  ○ Each municipality and the County will need to formally adopt the plan via resolution.	

5	**Homework**
	• **Worksheet 1: Previous Events**
	  ○ Document events that had an impact within your municipality.
	  ○ Consider all possible Hazards of Concern that have occurred since the previous HMP (2020).
	• **Worksheet 2: Capability Assessment**
	  ○ Captures the details of various plans, regulations, and programs that exist at the local level.
	  ○ Review the information that Tetra Tech has pre-populated and fill out the remaining information.
	• **Worksheet 3: NFIP Administration**
	  ○ To be filled out by the municipal Floodplain Administrator (FPA).
	• **Worksheet 4: Action Review**
	  ○ Update status of mitigation actions included in previous plan update, including whether it has been implemented, and any roadblocks to progress.
	• **Worksheet 5: New Development**
	  ○ Documents new building permits that have been issued since the previous plan. Only include new construction (no remodels, additions, etc.)
	  ○ Identify new large developments, including industrial and commercial properties, since the previous plan and those anticipated in the next five years.
		Tetra Tech:
		• Distribute homework sheets.
		
		Planning Partnership:
		• Worksheets due back to Tetra Tech March 15, 2024.

6	**Project Schedule** • Kick-Off Meeting – TODAY! • Goals and Finalize Hazards – April 2024 • Risk Assessment – February-May 2024 • Identify Actions – June-December 2024 • Finalize the Plan – December 2024 • Draft Plan Completed – January 2025 • Draft Plan Submitted to NJOEM – May 2025 • Draft Plan Submitted to FEMA – July 2025	-
7	**Next Steps**	**Tetra Tech**

	• Complete homework and submit to Tetra Tech • Tetra Tech will distribute lifeline/critical facilities for review by each jurisdiction in the near future.	• Distribute homework sheets and meeting minutes. • Distribute lifeline/critical facilities for review **Planning Partnership** • Complete and submit homework to Tetra Tech by March 15, 2025
7	**Questions/Discussion** • None	-



Passaic County Multi-Jurisdictional Hazard Mitigation Plan 2025 Update

Planning Partnership Kick-Off Meeting

February 20, 2024

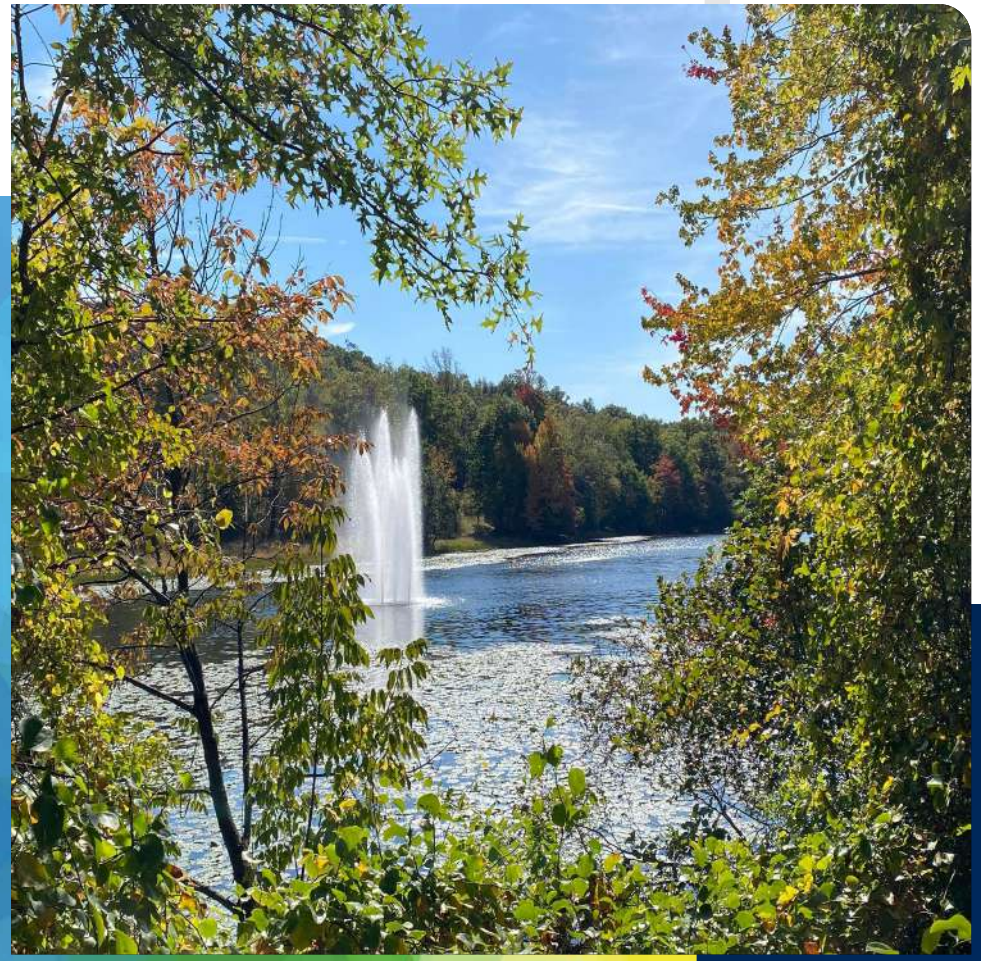
While waiting for the meeting to start, please sign-in using the printed sign-in sheet.



Today's Agenda

1. Welcome and Introductions
2. Hazard Mitigation Planning Overview
3. Project Organization
4. Planning Team Responsibilities
5. Planning Process Overview
6. Homework
7. Project Schedule
8. Questions/Next Steps/Wrap Up





Hazard Mitigation Overview

Mitigation planning happens before a disaster strikes. It results in safer, more resilient communities – reducing risk for the residents, businesses, and critical services in Passaic County.

Hazard Mitigation Planning Overview



- ✓ Authorized by the Disaster Mitigation Act of 2000
- ✓ Provides an overview of the impacts of natural hazards on communities
- ✓ Provides a roadmap to reducing the impact of these hazards
- ✓ Requires a FEMA-approved natural hazard mitigation plan to be eligible for Pre-Disaster Mitigation Funding
- ✓ 5-year updates required to maintain eligibility

- What is hazard mitigation?
- Why update the plan?
- What is the process?

What is Hazard Mitigation?

Mitigation is a sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event

-or-

Any action taken to reduce future disaster losses



“provides the blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability…” (CFR).

Why Update?

- The mitigation plan update will:
  - Help prepare for and mitigate hazards
  - Eligibility for pre- and post-disaster mitigation funding
  - Incorporate new FEMA requirements
- What is at risk in Passaic County?
- Which hazard do you think occurred the most since 2020?

January 2020 – July 2023	
Hazard	**Occurrences**
Blizzard	0
Extreme Cold, Cold/Wind Chill	0
Drought	0
Heat, Excessive Heat	0
Flood/Flash Flood	14
Hail	3
Heavy Rain	0
Hurricane/ Tropical Storm/ Tropical Depression	1
Lightning/ Thunderstorm	8
Tornado/Funnel Cloud	0
Wind	2
Winter Weather	10
Wildfire	0
TOTAL	**38**

Source: NOAA NCEI Severe Weather Inventory 2023

Differences from the 2020 Planning Process

- Involvement – engaged and actively participating
- Public and stakeholder outreach
- Socially vulnerable and underserved communities
- Climate change
- Mitigation actions are needed for every hazard of concern



Project Organization

Working with individuals, agencies, neighboring jurisdictions, businesses, and other partners for a successful mitigation planning process.

Project Organization

Core Planning Team

Passaic County Office of Emergency Management, Tetra Tech

Steering Committee

Planning Partnership

Stakeholders

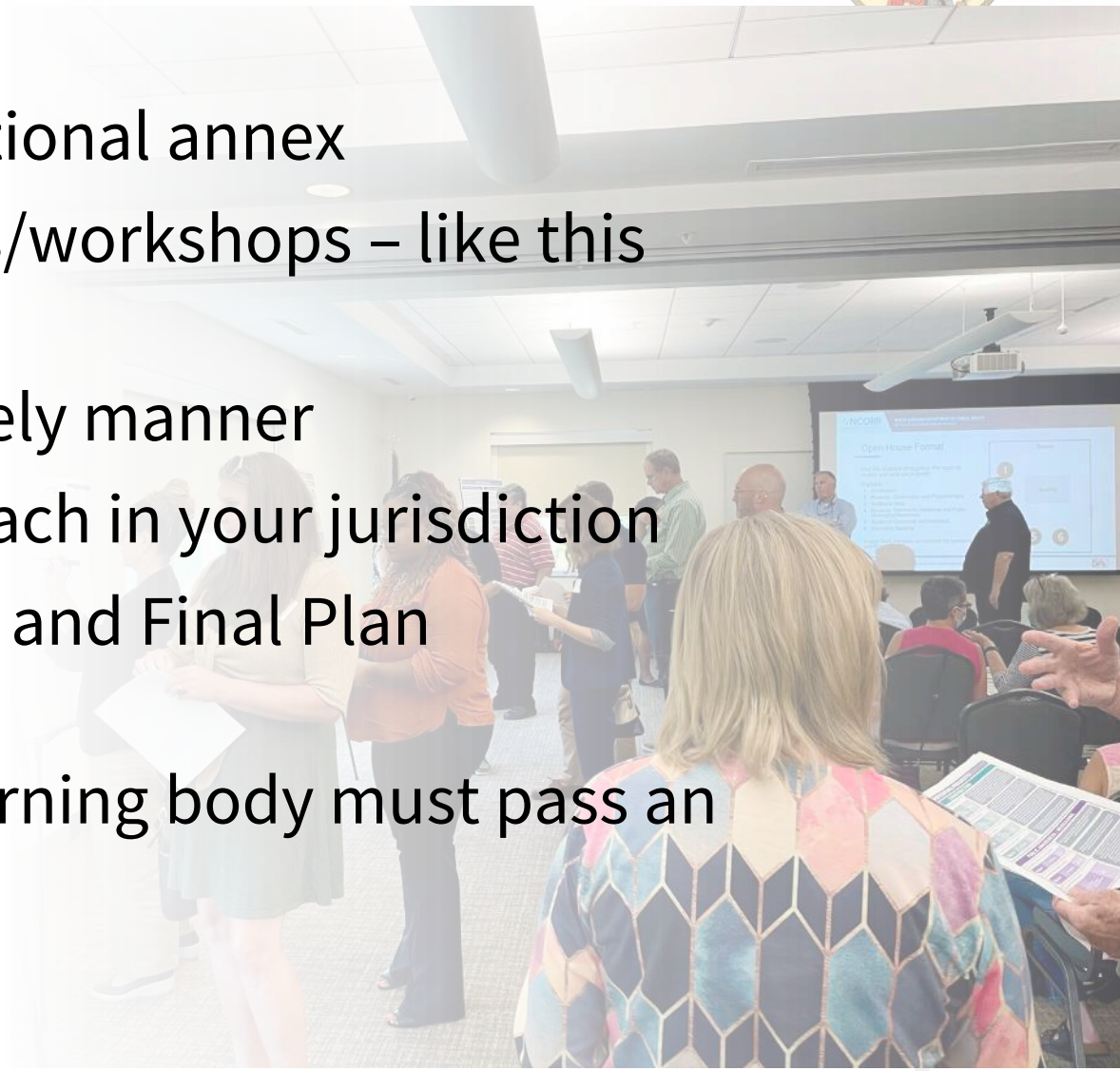
New Jersey Office of Emergency Management (NJOEM)

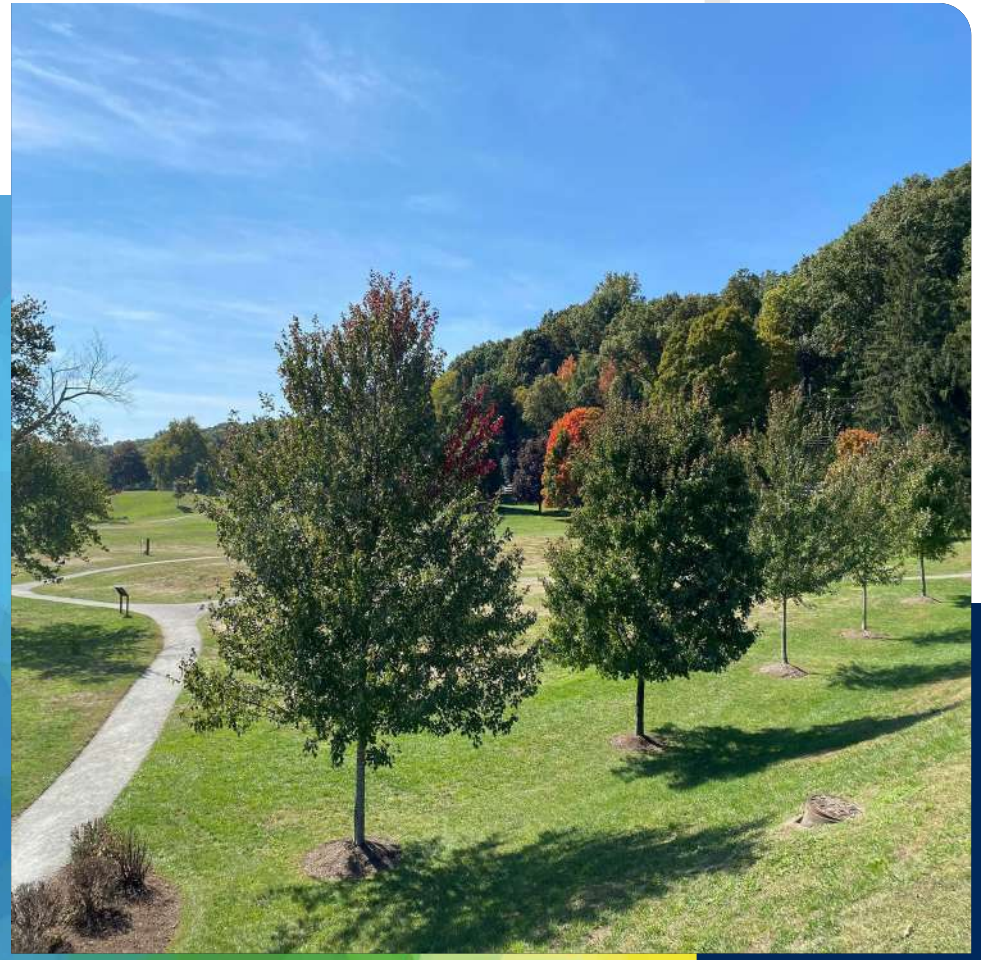
Planning Partnership Role and Responsibilities

- Actively participate throughout the process –
  - Coordinate and facilitate local efforts
  - Attend meetings
  - Provide information and feedback (e.g., complete municipal worksheets)
  - Involve the public and community stakeholders in the planning process
  - Identify mitigation actions for your community
  - Adopt the plan
  - Implement the plan and monitor its progress
- Provide your points of contact to the County and confirm you will be participating in the 2025 process

How Do You Participate?

- Assist with the update of your jurisdictional annex
- Attend Planning Partnership meetings/workshops – like this one!
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- Review and provide feedback on Draft and Final Plan documents
- Facilitate the adoption process – governing body must pass an Adoption Resolution
- Implement and Maintain the Plan





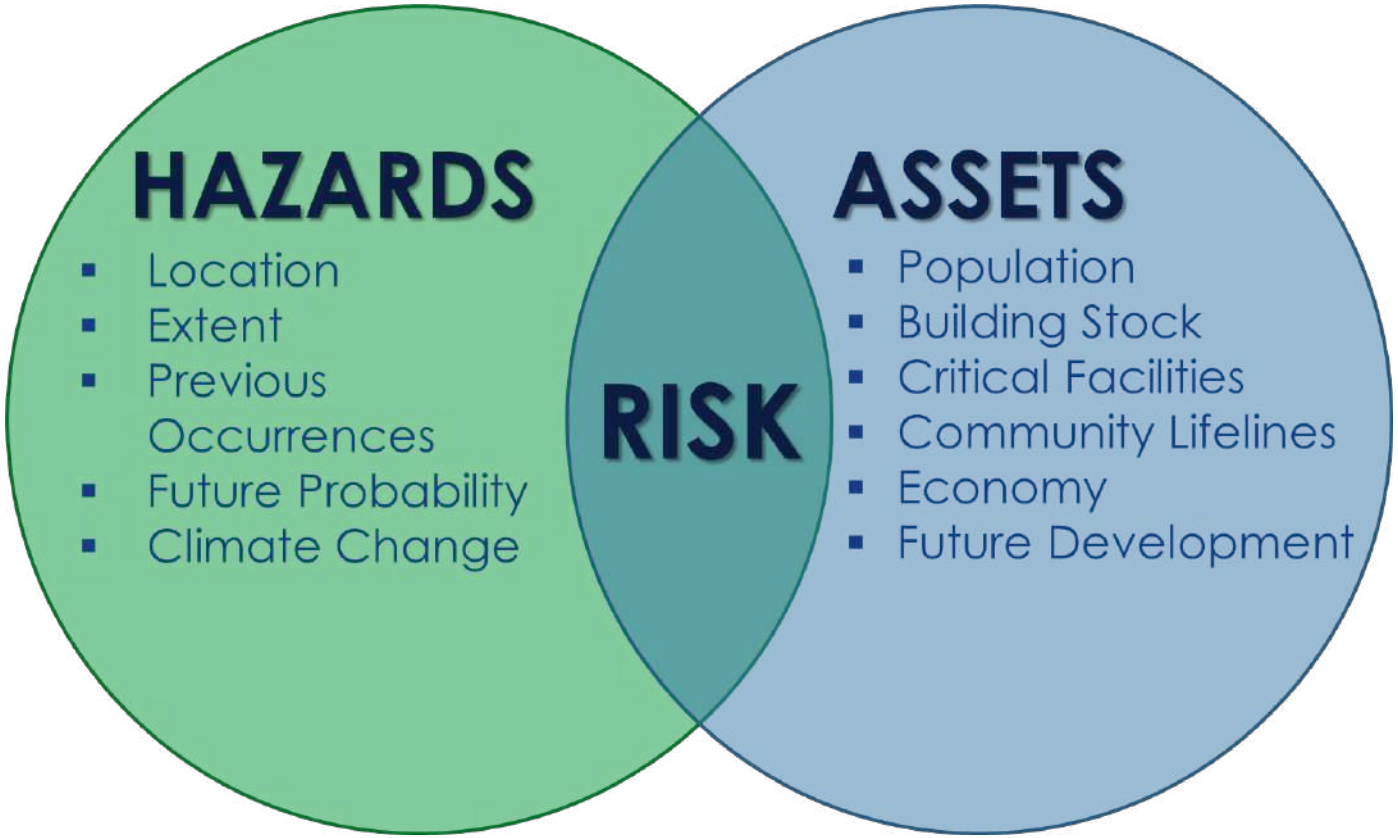
Planning Process Overview

A well-defined planning process is essential to the success of Passaic County's HMP Update.

Planning Process Overview

1. Planning Process
2. Risk Assessment
3. Public Involvement Strategy
4. Mitigation Strategy
5. Plan Maintenance
6. Plan Update and Deliverables
7. Plan Adoption
8. Project Management and Coordination

Update Risk Assessment

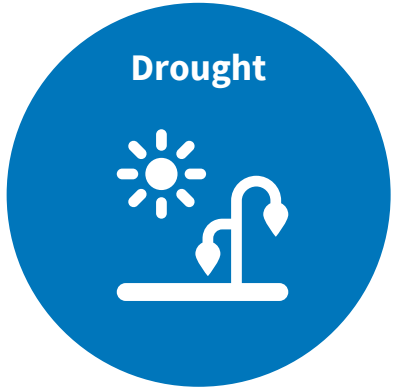


- Update Assets
- Examine Previous Impacts
- Analyze Risks
- Review with Steering Committee
- Risk Assessment Meeting

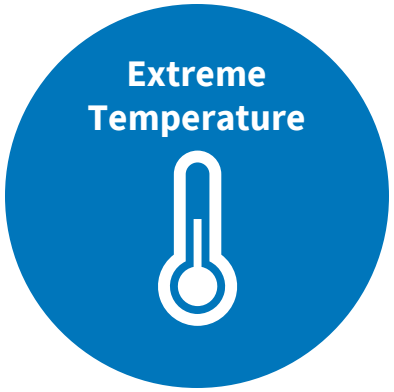
Hazards of Concern

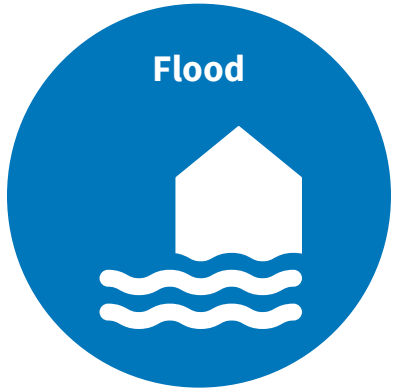




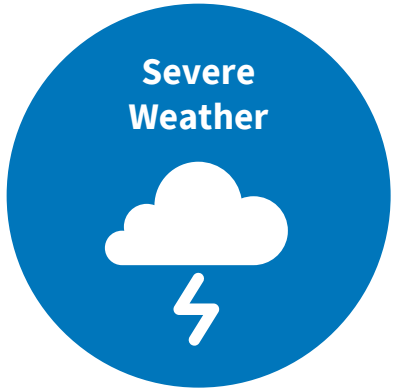
















Critical Facilities and Community Lifelines

- **Critical Facilities** provide essential services to the community, especially before, during, and after a disaster.
- **Community Lifelines** provide services that allow continuity of operations of critical business and government functions, and crucial to health and safety of residents.
- **Critical facilities will be distributed later this winter for review.**



Critical Facilities and Community Lifelines



Safety and Security

- Correctional
- Dam
- Daycare
- EOC
- Fire/EMS
- Government / Municipal Hall
- Historic Sites
- Library
- Military
- Police
- School



Food, Hydration, Shelter

- Shelter
- Grocery Stores
- Food Distribution Centers



Health and Medical

- Medical
- Senior Care Facilities



Energy

- Electric Substation
- Power Lines

Critical Facilities and Community Lifelines



Communications

- Communication Towers



Transportation

- Airport
- County Roads
- State Highways
- Light Rail
- Intermodal Transit



Hazardous Materials

- Tier Facilities
- Chemical

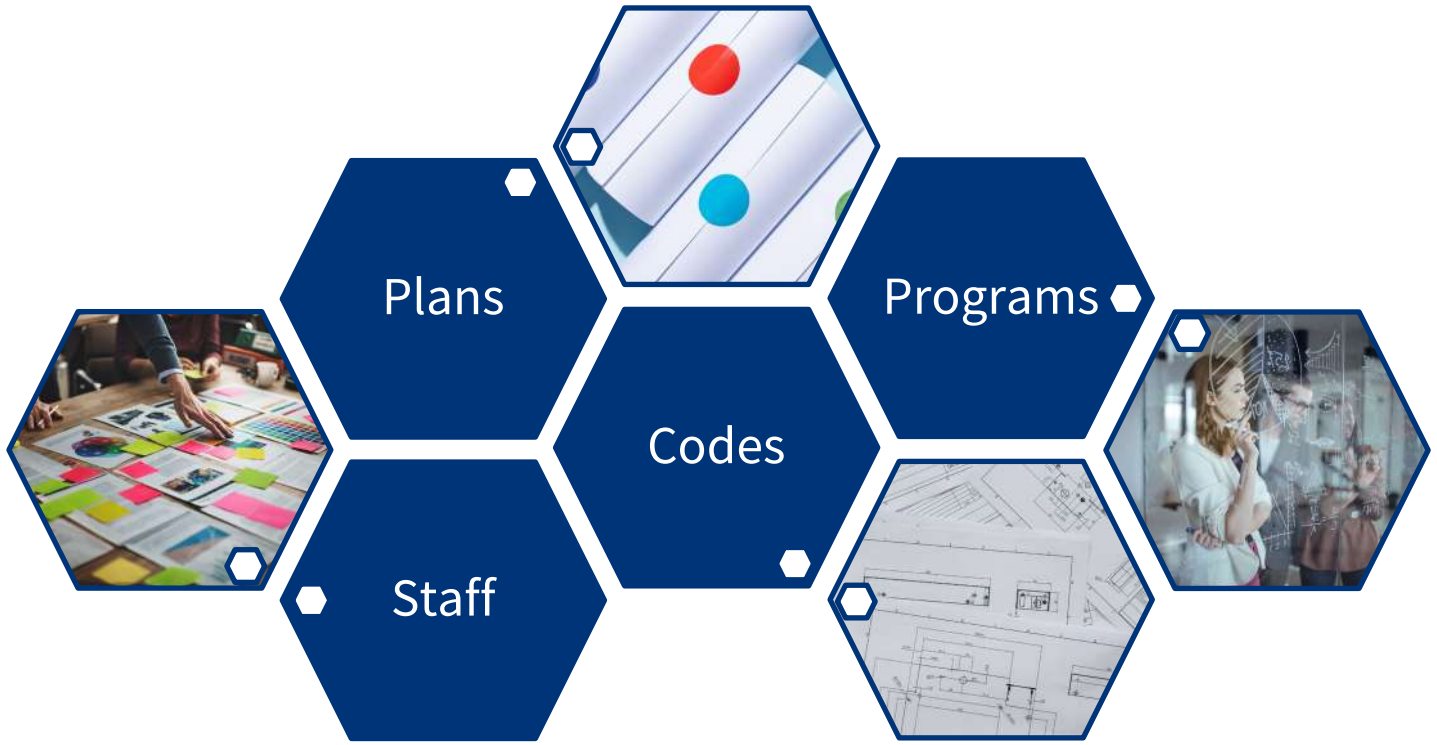


Water Systems

- Potable Pump Station
- Wastewater Pump
- Wastewater Treatment Plant
- Water Tower
- Potable Well

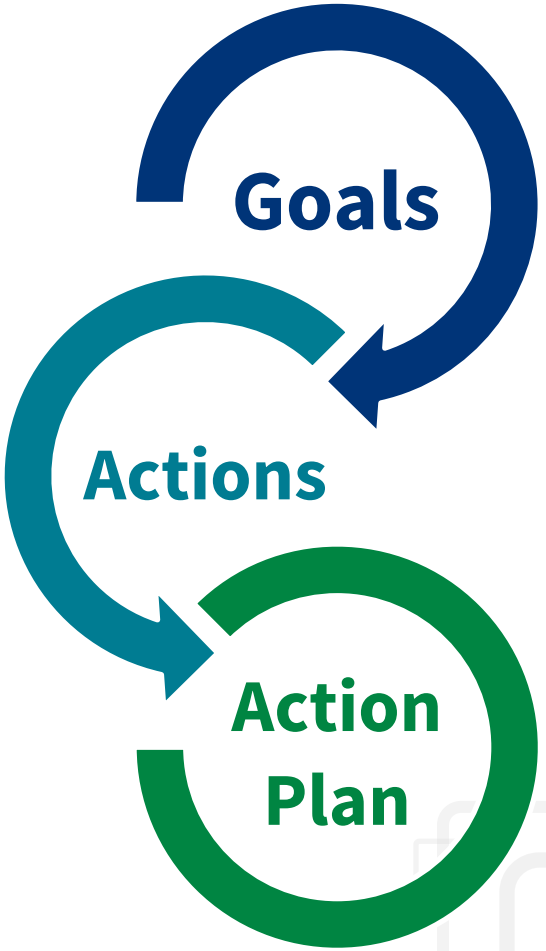
Capability Assessment

- Capabilities
  - What does your jurisdiction use to reduce risk to hazards?



Mitigation Strategy

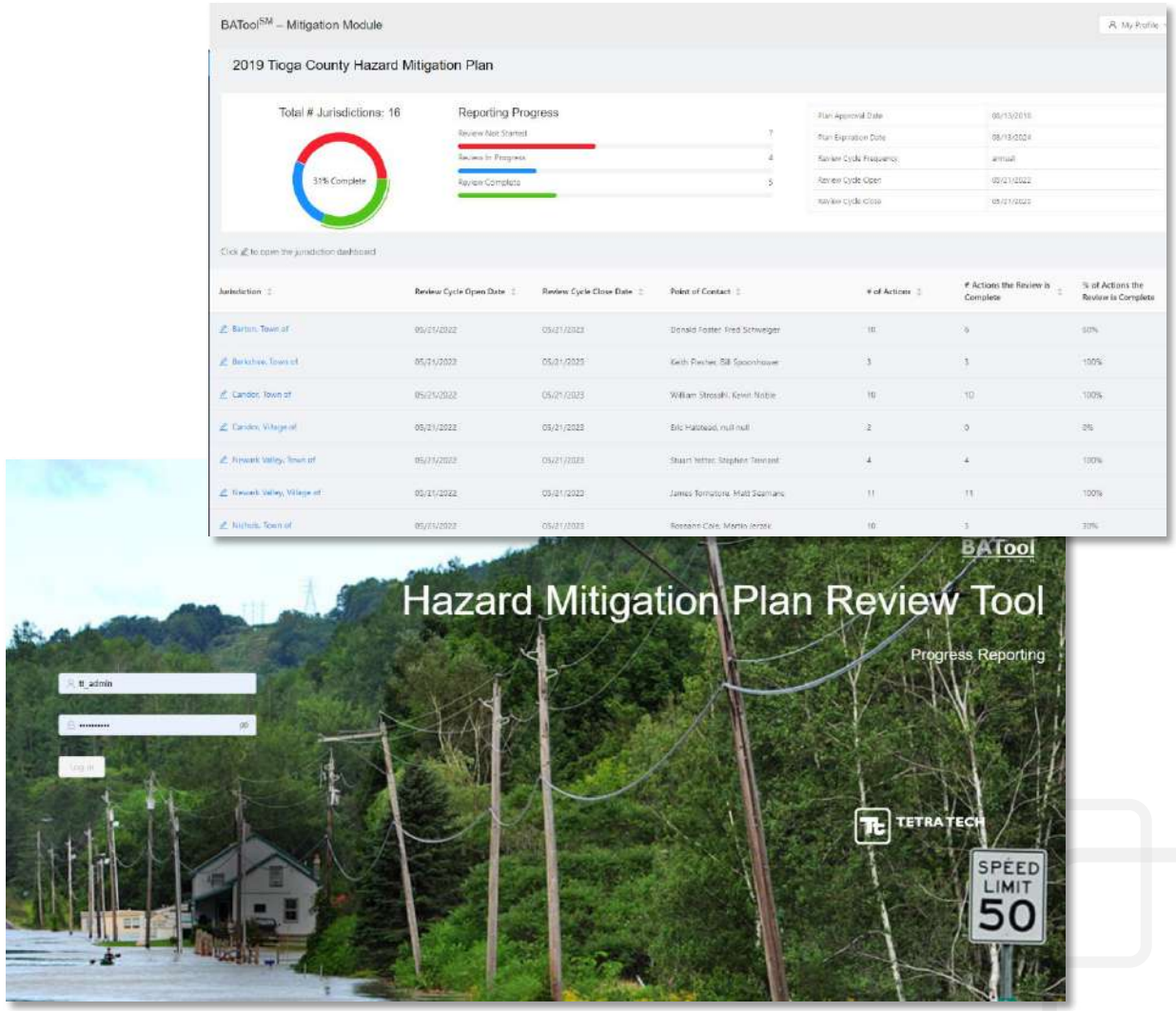
- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce hazard risk?
- Action Plan
  - How will the actions be prioritized and implemented?



Review Your Previous Mitigation Strategy

BATool^{SM} Program

- Update the 2020 mitigation actions through the BATool^{SM} – less paperwork!
- Refresher training for planning partners
- Populate potential 2025 mitigation actions



Goals and Objectives – Review and Update

Goal Number	2020 Goal	Modify, Add, or Remove?
G-1	Protect Life	
G-2	Protect Property	
G-3	Increase Public Preparedness and Awareness	
G-4	Develop and Maintain an Understanding of Risks from Hazards	
G-5	Enhance County and Local Mitigation Capabilities to Reduce Hazard Vulnerability	
G-6	Support Continuity of Operations Pre-, During, and Post-Hazard Events	
Additional Goals?		

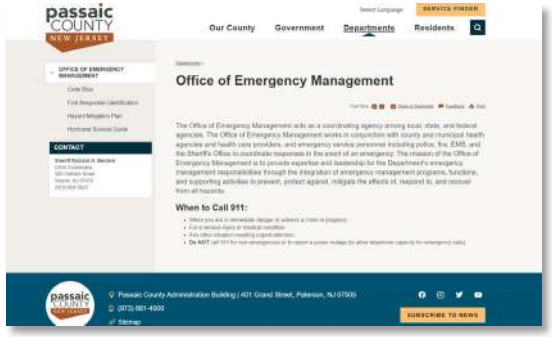
Goal Protect Property

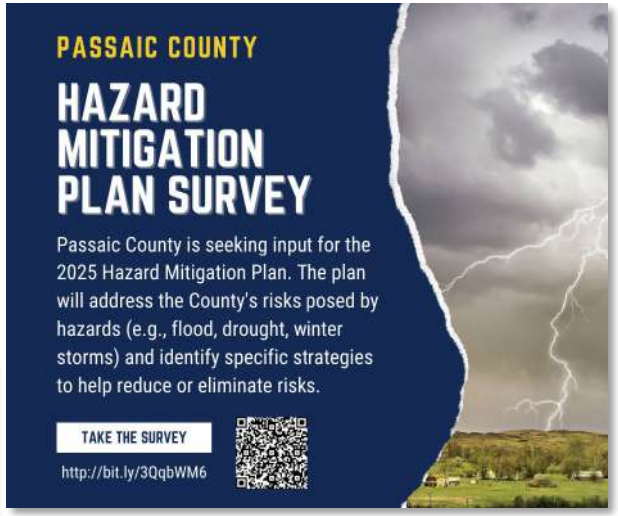
Objectives Reduce the number of vulnerable structures in flood hazard areas.

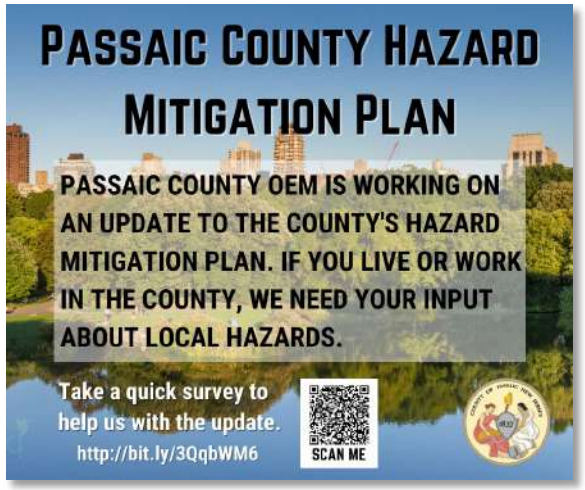
Actions Amend zoning ordinance to permit only open space and uses within floodplains.

Public Outreach Strategy

- Public Outreach Toolkit
  - Social media templates and posts
  - Press release templates
  - Printable materials
- Surveys
  - Stakeholders
  - Neighboring communities
  - Public
- County Website
- StoryMap









Plan Adoption & Integration

- Implementing your HMP…
  - Integration –
    - —Link to local planning efforts
    - —Hazard mitigation principles into your comprehensive or master plan
    - —Interagency coordination
  - Projects/Actions –
    - —Explore funding options to complete projects
    - —Develop grant applications
    - —Implement the projects



Homework

Each jurisdiction will need to review and submit information on previous events, capabilities, NFIP administration, recent development, and previous actions.

Homework sheets are due March 15.

Worksheet A: Previous Events

Hazard Mitigation Plan 2025 Update
Passaic County, New Jersey
Worksheet A – Hazard Event History

Please send all electronic Word versions by March 15, 2024:
Chris Huch, Tetra Tech | chris.huch@tetratech.com

Municipality: _____

Name and Title of Individual Completing Worksheet: _____

_____

Passaic County has frequently experienced natural hazard events. Please complete the table below to summarize specific loss and damages experienced during hazard events since the last hazard mitigation plan update (2020). Information already populated in the table below is based on County-wide events that resulted in significant damages and losses.

Please update the table to provide a summary of local impacts to the listed events AND note other local hazard events that resulted in damages, closures, or other impacts.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Closures, Damages, and Losses
January 20, 2020 – May 11, 2023	Covid-19 Pandemic (EM-3451-NJ, DR-4488-NJ)	Yes	As of September 26, 2023, Passaic County accounted for 7,530 positive cases of COVID-19, and 32 reported deaths (State of New Jersey, 2023).	
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall and riverine and flash floods. Rainfall totals exceed 3 inches in parts of County; 4 water rescues occurred due to flash flooding.	

Worksheet B: Capability Assessment

Please send all electronic Word versions by March 15, 2024:
Chris Huch, Tetra Tech | chris.huch@tetratech.com

Municipality: _____

Name and Title of Individual Completing Worksheet: _____

_____

Who can assist with completing these tables: Municipal Planner, Clerk, Code Official, Administrator, Chief Fiscal Officer.

Planning and Regulatory Capability

Please complete the following table to summarize the regulatory tools that are available to your community, what is present in the jurisdiction, and code citation and date. For existing regulatory tools, note how it reduces risk to hazards or how it could be updated to better integrate hazard mitigation concepts to reduce risk.

Table 1. Planning and Regulatory Capability

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
Codes, Ordinances, & Regulations				
Building Code				
How has or will this be integrated with the HMP and how does this reduce risk? *Consider the following:* • *Does the building code have provisions to strengthen or elevate construction to withstand hazard forces?* • *Are there building codes in place that meet or exceed those outlined in the National Flood Insurance Program's guidelines for safe building practices?* • *Do existing building codes include development standards for withstanding storm surge, wind damage, earthquakes, or other relevant natural hazards?*				
Zoning/Land Use Code				
How has or will this be integrated with the HMP and how does this reduce risk? *Consider the following:* • *Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas?* • *Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones?* • *Does the ordinance prohibit development within, or filling of, wetlands, floodways, and floodplains?* • *Is a zoning code in place to encourage resilient development through density bonuses for projects outside of natural hazard areas?* • *Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?* • *If applicable, is there a wildland-urban interface development code in place to prohibit or limit development in high wildfire risk areas?*				
Subdivision Code				
How has or will this be integrated with the HMP and how does this reduce risk? *Consider the following:* • *Do the subdivision regulations restrict the subdivision of land within or next to natural hazard areas?* • *Do the regulations provide for conservation subdivisions or cluster subdivisions to conserve environmental resources?*				

Hazard Mitigation Plan 2025 Update
Passaic County, New Jersey
Worksheet B – Capability Assessment

Table 3. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Administrative Capability		
Planning Board		
Zoning Board of Adjustment		
Planning Department		
Mitigation Planning Committee		
Environmental Board/Commission		
Open Space Board/Committee		
Economic Development Commission/Committee		
Public Works/Highway Department		
Construction/Building/Code Enforcement Department		
Emergency Management/Public Safety Department		
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)		
Mutual aid agreements		
Human Resources Manual *e.g., Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?*		
Other		
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices		
Engineers or professionals trained in building or infrastructure construction practices		
Planners or engineers with an understanding of natural hazards		
Staff with expertise or training in benefit/cost analysis		
Professionals trained in conducting damage assessments		
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications		
Staff that work with socially vulnerable populations or underserved communities		
Environmental scientist familiar with natural hazards		
Surveyor(s)		
Emergency Manager		
Grant writer(s)		*Consider the following:* • *Are data and maps from the HMP used to support documentation in grant applications?*
Resilience Officer		

Worksheet C: NFIP Administration

Please send all electronic Word versions by March 15, 2024:

Chris Huch, Tetra Tech | chris.huch@tetratech.com

Municipality: _____

Name and Title of Individual Completing Worksheet: _____

_____

Who can assist with completing this table: NFIP Floodplain Administrator – as identified by role/title in your Flood Damage Prevention Ordinance.

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	
Do you maintain a list of properties that have been damaged by flooding?	
Do you maintain a list of property owners interested in flood mitigation? • How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	
How do you make Substantial Damage determinations? • How many were declared for recent events in your jurisdiction?	
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? • If there are mitigated properties, how were the projects funded?	
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	
NFIP Compliance	
What local department is responsible for floodplain management?	
Are any certified floodplain managers on staff in your jurisdiction?	

TETRA TECH

Worksheet D: Previous Mitigation Actions

Please send all electronic Word versions by March 15, 2024:
Chris Huch, Tetra Tech | chris.huch@tetratech.com

Municipality: _____

Name/Title of Individual Completing Worksheet: _____

STATUS OF PREVIOUS MITIGATION ACTIONS

Review the mitigation actions your jurisdiction identified in the previous HMP by providing a brief narrative. Begin by providing a status update for each action listed in your last annex:

- IN PROGRESS: Started but not complete
- ONGOING CAPABILITY: An action you now complete on a regular basis (maintenance, annual outreach, etc.). These actions will be included in your capabilities moving forward.
- NO PROGRESS: Not started
- COMPLETE: Finished!

Actions that are COMPLETE or ONGOING will not be carried forward. Indicate if NO PROGRESS or IN PROGRESS actions should be carried forward!

Project #	Project	Responsible Party	What is the status? (e.g., In Progress, No Progress, Ongoing Capability, or Completed) Provide details including the funding source, cost, phases completed, obstacles to progress, etc.	If you did not complete the action, should the action be included in the 2025 HMP (i.e., there is still a need, this is still a priority)? Yes/No	If Yes, please describe the original problem (i.e., hazard, location, historic losses), any updates to the action needed.	Hazard(s) of Concern addressed (refer to the hazards on page 1)

TETRA TECH

Worksheet E: New Development

Please send all electronic Word versions by March 15, 2024:

Chris Huch, Tetra Tech | chris.huch@tetratech.com

Municipality: _____

Name and Title of Individual Completing Worksheet: _____

_____

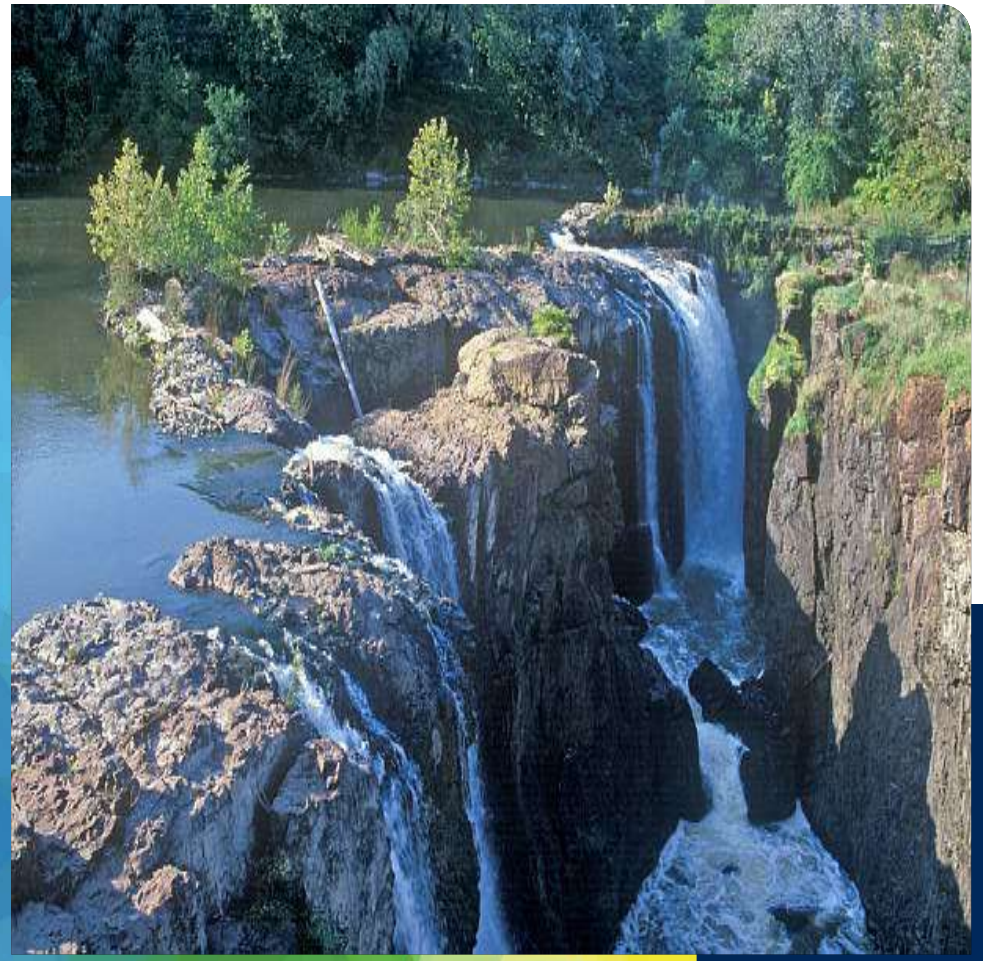
Who can assist with completing these tables: The Building Department, Planning Department, and NFIP Floodplain Administrator

In the first table, please identify the number of building permits issued for new construction since 2019. Include the number of permits issued for construction located in the Special Flood Hazard Area (SFHA) (e.g., 1% flood area). If your jurisdiction does not have the ability to differentiate between permit types, please list the total number of permits and indicate "N/A" (not applicable) for the permit sub-types.

Type of Development	2020		2021		2022		2023	
Number of Building Permits for New Construction Issued Since the previous HMP* (total/within regulatory floodplain)								
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single Family								
Multi-Family								
Other (commercial, mixed-use, etc.)								
Total Permits Issued								

SFHA Special Flood Hazard Area (1% annual chance flood event)

** Only location-specific hazard zones or vulnerabilities identified.*



Project Schedule

Upcoming meetings and key milestones throughout the HMP update process

Schedule

1 Planning Process

2 Risk Assessment

3 Public Involvement Strategy

4 Mitigation Strategy

5 Plan Maintenance

6 Plan Update and Deliverables

7 Plan Adoption

8 Project Management and Coordination

Kick-Off Meetings – TODAY!

- Goals and finalize hazards – April 2024
- Risk Assessment – February-May 2024

Identify Actions – June-December 2024

Finalize by November 2024

- Draft by January 2025
- Draft to NJOEM by May 2025
- Draft to FEMA by July 2025

Next Steps

- Provide your Points of Contact
- Complete and submit homework worksheets by March 15
  - Previous Events
  - Capability Assessment
  - NFIP Administration
  - New Development
  - Previous Actions
- UPCOMING: Provide edits on critical facilities



Questions?



Passaic County Project Contact

Maria Dombayci, Office of Emergency Management
(973) 904-3621 | mariado@passaiccountynj.org

Tetra Tech Project Manager

Chris Huch, CFM
(973) 630-8357 | chris.huch@tetratech.com

Thank You!

PASSAIC COUNTY HAZARD MITIGATION PLAN - UPDATE
Planning Partnership Risk Assessment and Mitigation Action Workshop
Thursday, November 14 at 10 am – 3 pm

PCCC Public Safety Academy – Auditorium
300 Oldham Road
Wayne, NJ

1. Opening Remarks
2. Project Status

    - Where we are in the process, public outreach, survey discussions

3. Additional Outreach Efforts

    - General Public
    - Stakeholders
    - Neighbors
    - Socially Vulnerable Populations

4. Risk Assessment Overview

    - Results of risk assessment for each hazard
    - Hazards of concern risk ranking
    - How will this information be used in the HMP?

5. Strengths, Weaknesses, Opportunities, Obstacles (SWOO)
6. Break (Lunch provided)
7. Mitigation Strategy Overview

    - Review Previous Actions
    - Identifying Mitigation Strategies
    - Developing New Actions

8. Next Steps and Questions
9. Adjournment

Purpose of Meeting:	Planning Partnership Risk Assessment and Mitigation Action Workshop Meeting
Location of Meeting:	PCCC Public Safety Academy (Auditorium), 300 Oldham Road, Wayne, NJ
Date of Meeting:	Thursday, November 14, 2024 - 10 am to 3 pm

Attendees:

Passaic County
- Beverly Brevard, Health Services
- Araceli Pintle, Health Services
- Nanuette Lane, Health Services
- Yonette Fredericks, Health Services
- George Rosenthal, OEM Coordinator
- Maria Dombayci, OEM Deputy Coordinator
- Robert Scott, OEM Deputy Coordinator

Bloomingdale (B)
- None present

Clifton (C)
- Michael Doktor, Clifton Public School District
- Kasey Molner, Health Department
- Jennifer Terwilliger, Health Department
- Meaghan Zinola, Clifton Public School District
- Capt. Jeff Bracken, Deputy OEM Coordinator

Haledon (B)
- None present

Hawthorne (B)
- Andrew Skae, OEM Coordinator/Police Department
- Matthew Fenkart, Deputy OEM Coordinator/Police Department

Little Falls (Twp)
- James DiMaria, Construction Official
- Michael Bandurski
- Jason Presing, Police/OEM
- Vincent Quatrune, Assistant Administrator
- Bryan Prall, Police Chief

North Haledon (B)
- Anothony Condorti, Deputy OEM Coordinator
- Todd Darby, OEM Coordinator

Passaic (C)
- Capt. Piyush Patel, OEM Coordinator
- Fred Corbitt, Department of Public Works
- Walter Porto, Deputy OEM Coordinator
- Yasseen Saad, City Engineer

Paterson (C)
- Troy Ayers, OEM Coordinator
- Libra Jones, Deputy OEM Coordinator

Pompton Lakes (B)
- Al Evangelista, OEM Coordinator

Prospect Park (B)
- None present

Ringwood (B)
- Pat Murray, Jr., OEM Coordinator

Totowa (B)
- None present

Wanaque (B)
- Tom Carroll, OEM Coordinator

Wayne (Twp)
- Capt. Dan Daly, Police/OEM Coordinator
- Eric Fedor, Director of Public Works

West Milford (T)
- Michael Weber, Deputy OEM Coordinator

Woodland Park (B)
- Capt. Joe Domicolo, OEM Coordinator

New Jersey Department of Education
- Alicia Anderson

American Red Cross
- Sara Huisking, Executive Director

NJSP
- Joseph Palach, State Trooper

Highlands Council
- Allison Bittner, Principal Planner
- James Humphries, Director of Planning

Tetra Tech
- Karen Montes Berrios, Project Manager
- Emma Kilkelly, Lead Planner
- Emily Vassallo, Planner

Agenda Summary: The purpose of the meeting was to review the risk assessment results, including the hazard ranking, and introduce the SWOO exercise to the Planning Partnership, and begin the discussion of mitigation strategies.

Item No.	Description	Action item(s):
1	**Introductions**	-
2	**Project Status** • On schedule	**Planning Partnership**

	• Risk Assessment – Reviewing preliminary results now • Identify Actions – November-December 2024 • Finalize Plan – December 2024 • Draft Plan – January 2025 • Draft to NJOEM – March 2025 • Draft to FEMA – June 2025 • Public Outreach and Engagement • Post links on social media and department/agency websites • Stakeholder and neighboring municipalities surveys have been distributed • Make efforts to reach out to: ▪ General Public ▪ Stakeholders ▪ Neighbors ▪ Socially Vulnerable Populations	• Post links on social media and department/agency websites • Make efforts to reach out to general public, stakeholders, neighbors, and socially vulnerable populations
3	**Risk Assessment Overview** • Risk is defined as a function of the following components: Hazard ▪ Source of potential danger or adverse condition • Exposure ▪ Human-made or natural features that are in the hazard's potential path • Vulnerability ▪ Damage susceptibility of the exposed features • Adaptive Capacity (or capability) ▪ Plans/policies ▪ Response/recovery ▪ Financial resources	-
	Purpose of Risk Assessment • To get a better understanding of the risks you face • Initial results are based on best available data • Quantitative data is used when available • Local Community input to adjust rankings	-
	Preliminary Risk Assessment Results • Provided an overview of the results from the risk assessment for each hazard. Results were a combination of qualitative and quantitative data. • Dam/Levee Failure • Drought • Earthquake • Extreme Temperature • Flood • Geological Hazards • Severe Weather • Severe Winter Weather • Wildfire	-
	Hazard Rankings • The calculated probability of a hazard occurring based on historical data • Impacts *to <u>people</u>, <u>property</u>, and the <u>economy</u>* based on GIS data and analysis of exposure.	-

	• The degree to which climate change will affect future occurrences based on best available data.
	• The degree to which existing capabilities (the ability of your community to respond to the hazard based on ordinances, mitigation strategies and procedures, and readiness) decrease overall risk.
	• Rankings:
	  • High: Flood
	  • Medium: Drought, Extreme Temperature, Severe Weather, Severe Winter Weather
	  • Low: Dam/Levee Failure, Geological Hazards, Wildfire	

	Identifying and Developing Mitigation Strategies
	• The **Mitigation Strategy** is the County's roadmap to reduce the risk of hazards identified in the HMP. The strategy is based on hazard impacts, asset vulnerability, and the County's capabilities.
	• **Mitigation Actions** are specific activities, such as policies, projects, and studies, that stakeholders identify to reduce risk.
	  ○ Forward-looking and incorporate changing conditions for the life of the County's assets
	  ○ Consider changing demographics, development patterns, impacts of climate change.
	  ○ Examples of actions may include elevating electrical and HVAC equipment to reduce the likelihood of damage from floodwaters or planting trees to lower temperatures exacerbated by pavement.
	• What is a ***Mitigation Strategy***?
	  ○ A group of projects or actions to reduce the impacts of the hazards of concern on your community
	  ▪ Plans and Regulations
	  ▪ Structure and Infrastructure Studies and Projects
	  ▪ Natural Systems Protection Studies and Projects
	  ▪ Education and Awareness Programs
	• Terms to describe the *Mitigation Strategy* include:
	  ○ Mitigation Action Plan or Action Plan
	  ○ Mitigation Projects or Initiatives or Actions
	• **Connecting to the Mitigation Strategy**
	  ○ Need a clear connection between vulnerabilities identified in the risk assessment and proposed mitigation actions.
	  ○ The capability assessment can provide insight into challenges and opportunities for the mitigation strategy.
	  ○ All actions proposed in the mitigation strategy must have a factual basis tied to the results of the risk and capability assessments (*this shouldn't be a wish list*!)
		-

	Capability Assessment
	○ What does your jurisdiction use to reduce risk to hazards
	  ○ Communities do flood buyouts – Issue of people not wanting to sell due to below market value
	  ○ Issue of lack of money- don't want to do grants due to lack of staffing
		-

	Mitigation Strategy • Goals • Actions • Action Plan	-

	Review of 2020 HMP Goals • Reviewed the updated goals and objectives	-

	Developing New Potential Actions
	• Quality not quantity
	  • Each action needs detailed information on the why, who, what, and when of the action.
	• 2020 projects
	  • If a project is not finished and still a priority, include in 2025 HMP
	  • Remove general projects or make more specific
	  • Remove ongoing capabilities like maintenance or annual outreach
	• **Each hazard needs at least one mitigation action**
	• If your jurisdiction has Repetitive Loss Properties - an action is needed to mitigate the properties (elevation or acquisition) with specifics (street or neighborhood names, not specific addresses)
	• Four types of Mitigation Actions
	  • Plans and regulations
	  • Structure and Infrastructure
	  • Natural systems protection
	  • Education and awareness
	• Mitigation Action Worksheet
		-

	Strengths, Weaknesses, Obstacles, and Opportunities (SWOO) • Strengths – what the County and communities do well; things upon which we can capitalize. • Weaknesses – what can be done better; what can be strengthened. • Obstacles – what stands in the way to implementation to prevent mitigation or response (for example regulatory, geographical, environmental, financial issues). • Opportunities - actions or projects to mitigate issues or improve resilience.	**Planning Partnership** • Complete SWOO worksheets and return at end of workshop or by 11/27

	Review Previous Actions
	• Review the mitigation actions your jurisdiction identified in the previous HMP by providing a brief status narrative. Begin by providing the status headings below and then add details (what has been accomplished, what funding was used, anything holding back progress):
	  ○ IN PROGRESS: Started but not complete
	  ○ ONGOING CAPABILITY: An action you now complete on a regular basis (maintenance, annual outreach, etc.). These actions will be included in your capabilities moving forward.
	  ○ NO PROGRESS: Not started
	  ○ COMPLETE: Finished!
	• Actions that are COMPLETE or ONGOING will not be carried forward.
		-

	Next Steps • Share information about the HMP Update via social media, community groups, and networks • Return SWOO/Mitigation Action worksheets to Tetra Tech by November 27, 2024	**Planning Partnership** • Return completed worksheets to Tetra Tech by 11/27



TETRA TECH

Passaic County Multi-Jurisdictional Hazard Mitigation Plan 2025 Update

Planning Partnership Risk Assessment and Mitigation Action Workshop

November 14, 2024 | 10 am

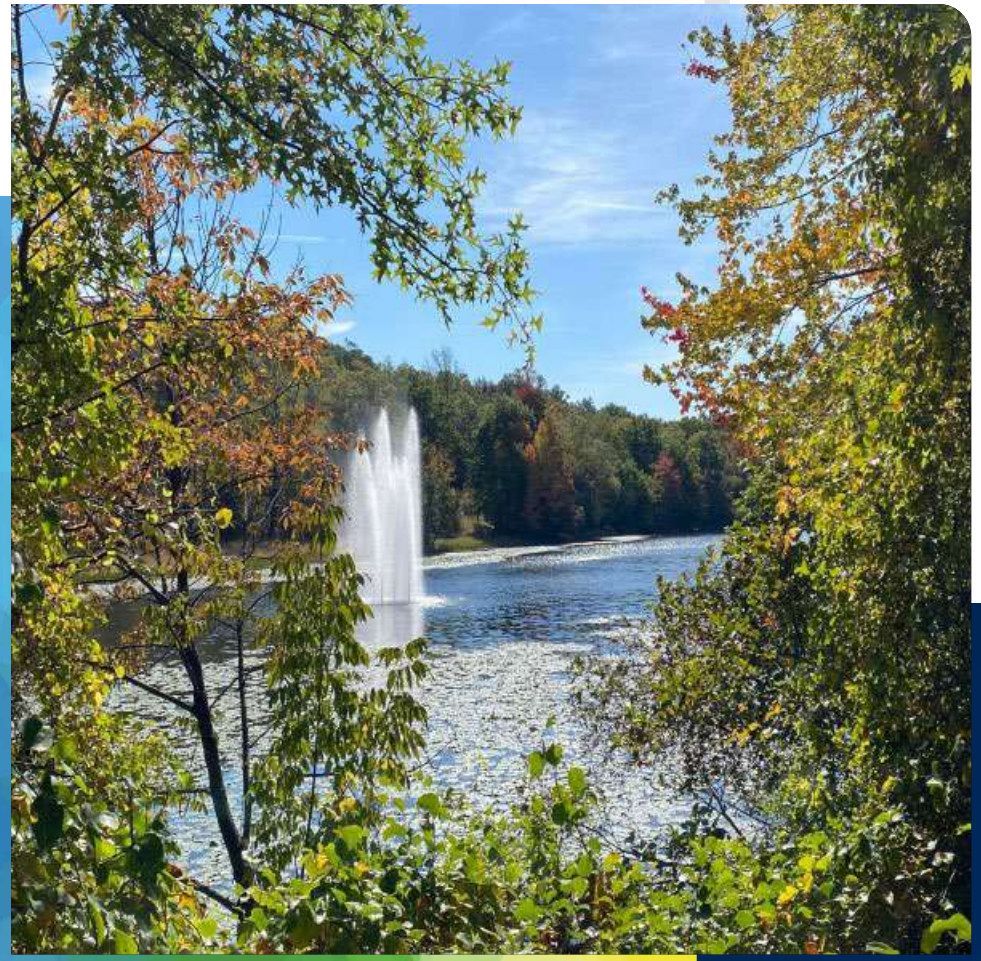
While waiting for the meeting to start, please sign-in using the printed sign-in sheet.



Today's Agenda

1. Welcome and Introductions
2. Project Status
3. Risk Assessment Overview
    - Feedback and Input
4. Identify Mitigation Strategies
5. Review Previous Actions
6. Develop New Actions
7. Workshop to Review Previous Actions, Identify New Actions, Complete Municipal Annexes
8. Next Steps
9. Questions/Wrap Up





Project Status

Schedule

1 Planning Process

2 Risk Assessment

3 Public Involvement Strategy

4 Mitigation Strategy

5 Plan Maintenance

6 Plan Update and Deliverables

7 Plan Adoption

8 Project Management and Coordination

Kick-Off Meetings – February 2024

- Goals and Finalize Hazards – April 2024
- Risk Assessment – February - September 2024

Identify Actions – October - November 2024

Finalize by December 2024

- Draft by January 2025
- Draft to NJOEM by March 2025
- Draft to FEMA by June 2025

Municipal Participation Status

Municipality	LOIP?	Completed Worksheets?
Bloomingdale (B)	Yes	Yes
Clifton (C)	Yes	Yes
Haledon (B)	Yes	Yes
Hawthorne (B)	Yes	Yes
Little Falls (Twp)	Yes	Yes
North Haledeon (B)	Yes	Yes
Passaic (C)	Yes	Yes
Paterson (C)	Yes	Yes

Municipality	LOIP?	Completed Worksheets?
Pompton Lakes (B)	Yes	Yes
Prospect Park (B)	Yes	No – Missing building permits
Ringwood (B)	Yes	Yes
Totowa (B)	Yes	Yes
Wanaque (B)	Yes	Yes
Wayne (Twp)	Yes	Yes
West Milford (T)	Yes	Yes
Woodland Park (B)	Yes	Yes

Public Outreach and Engagement

ACTION! Distribute the Public Survey!

- Post links on social media and department/agency websites
- Stakeholder and neighboring municipalities surveys have been distributed
- Make efforts to reach out to:
  - General Public
  - Stakeholders
  - Neighbors
  - Socially Vulnerable Populations





Risk Assessment Overview

What is Risk?

Risk is defined as a function of :

- Hazard
  - Source of potential danger or adverse condition
- Exposure
  - Manmade or natural features that are exposed to the hazard
- Vulnerability
  - Damage susceptibility of the exposed features
- Adaptive Capacity (or capability)
  - Plans/policies
  - Response/recovery
  - Financial resources



Purpose of Risk Assessment

- To get a better understanding of the risks you face
- Initial results based on available data
- Quantitative data (population/structures exposed, structural damages within hazard zones) used when available
- Qualitative community input (such as unmapped flood areas) integrated to adjust results
- **Local community input to adjust relative rankings**





Preliminary Risk Assessment Results

Dam Failure

Dam failures in Passaic County are a low-probability and high-consequence event. A dam failure can have devastating impacts on the County. While most dams have storage volumes small enough that failures would have little or no consequences, dams with large storage amounts could cause significant flooding downstream.

Number of Dams

132

(50 are HHPD)

Impacts

- Block evacuation routes, limit emergency access, and/or create isolation issues.
- Cause severe flooding that can cause extensive structural damage and constrain essential services.
- Can include significant water-quality and debris-disposal issues or severe erosion that can impact local ecosystems.

Dam Graphic



Probability of Occurrence

- Low probability of future occurrence but may increase as dams age and precipitation patterns change.
- No dam failures have been recorded in Passaic County.
- Occurrences are often triggered by preceding events, such as earthquakes, landslides, and excessive rainfall or snowmelt.

Drought

Droughts can affect Passaic County's industries and make day to day tasks more difficult to complete when water usage must be monitored.

Population Exposed

519,986

(100%)

The entire County is susceptible

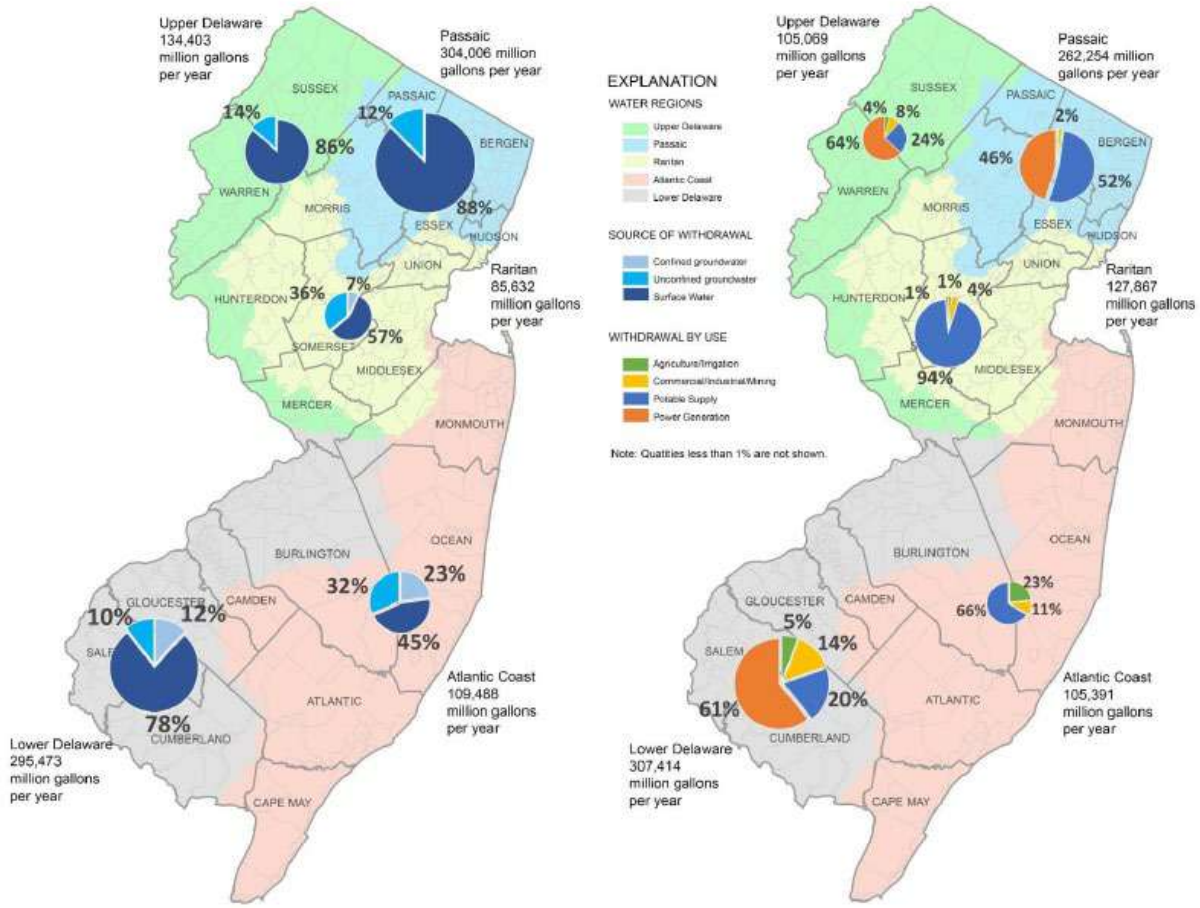
USDA Declarations

2

Climate Change Impacts

It is anticipated that droughts lasting 3 to 6 months and longer may slightly increase in frequency under a low emissions scenario and will significantly increase under a high emissions scenario.

Water Regions, Sources and Withdrawal by Sector in New Jersey



Hazard Types

Meteorological

Hydrological

Agricultural

Socioeconomic

Earthquake

Earthquakes in Passaic County are a low-probability and high-consequence event. An earthquake can have devastating impacts on the County. Ground shaking can lead to the collapse of buildings and bridges and disrupt gas lines, electricity, and phone service.

Population Exposed

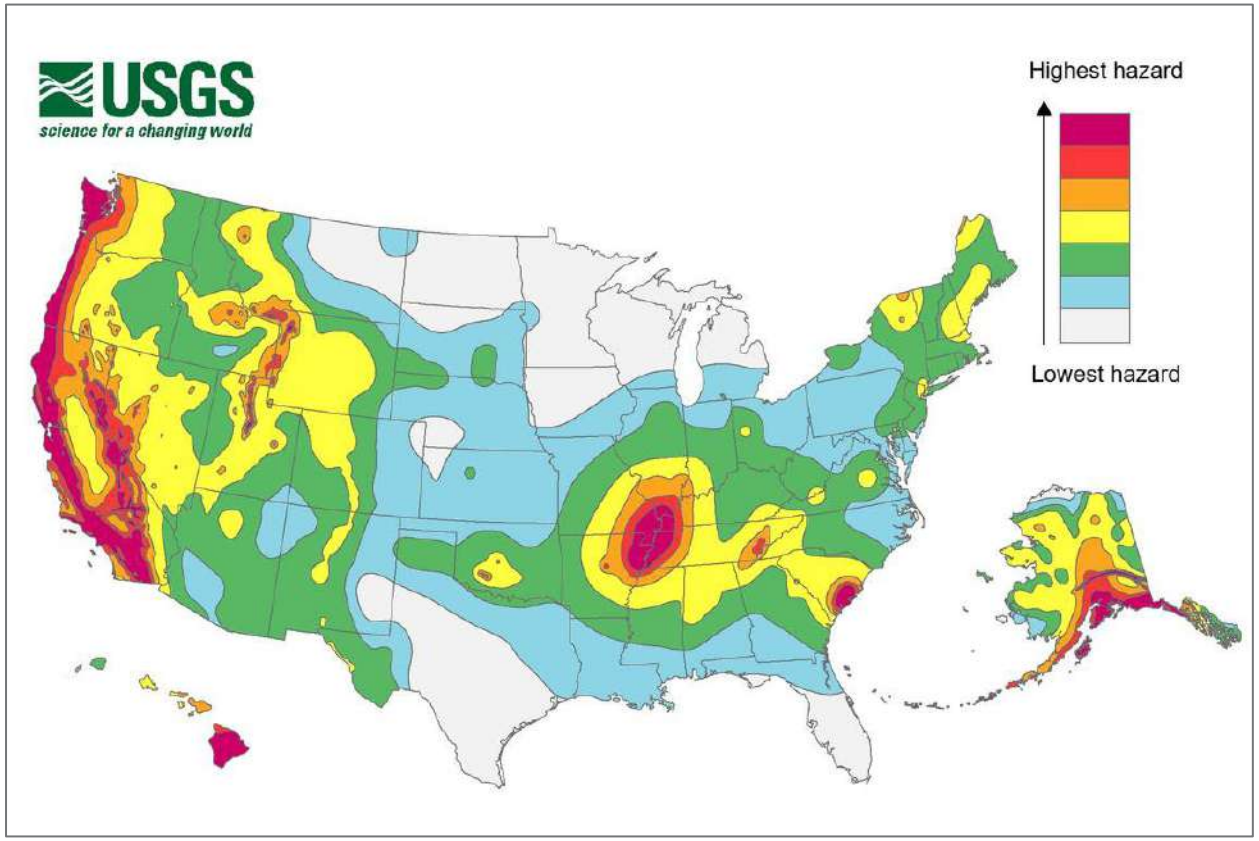
64,743

(12.5%)

Notable Occurrences

Small earthquakes may occur several times a year and generally do not cause significant damage. The strongest earthquake with an epicenter in Passaic County was a 3.0 quake in Medford Lakes in 1980.

Location



Hazard Types

- Surface Faulting
- Ground Motion
- Liquefaction
- Tectonic Deformation
- Seiche

Extreme Temperatures

Extreme temperature includes both heat and cold events, which affects the entire County including, human health and commercial/agricultural businesses. Extreme temperature events can have primary and secondary effects on infrastructure.

Population Exposed

519,986

(100%)

The entire County is susceptible

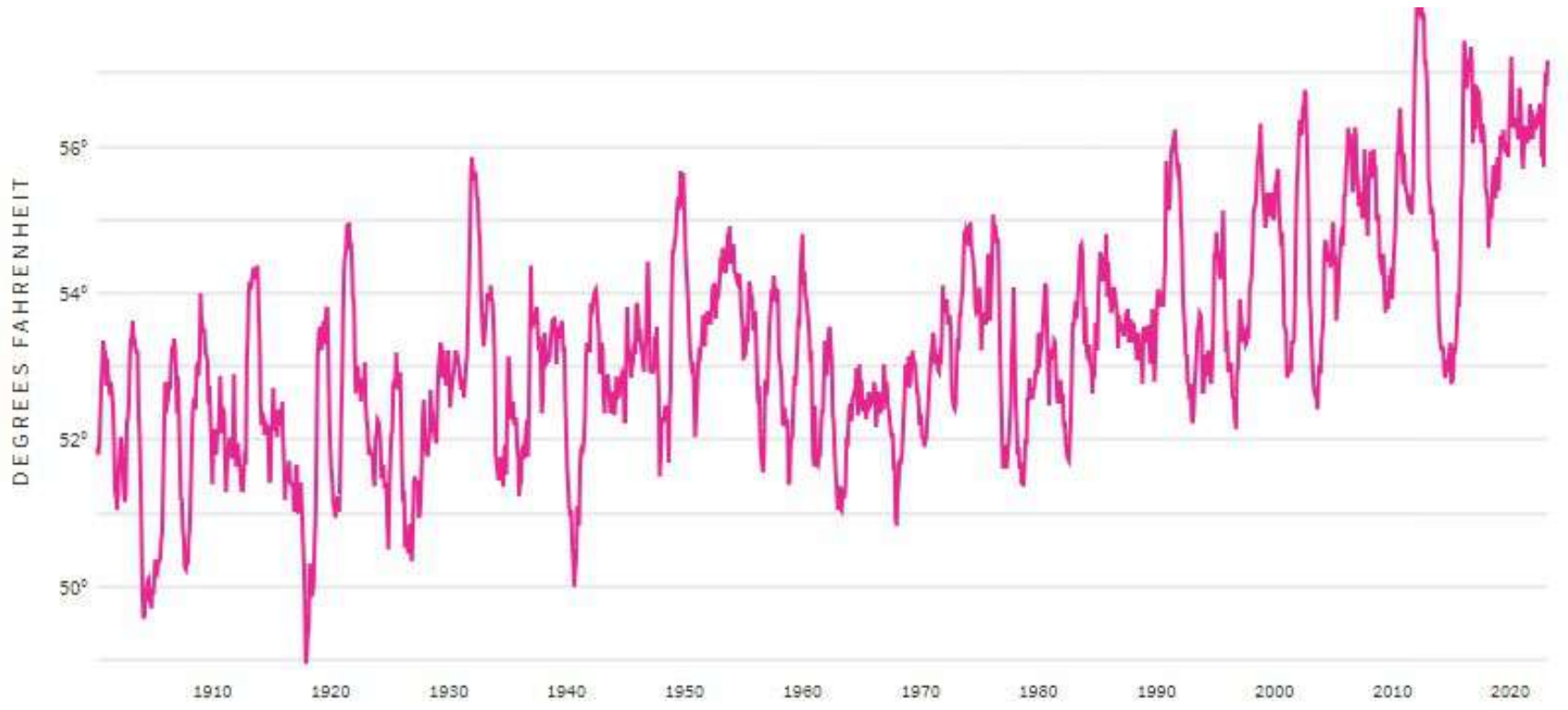
USDA Declarations

4

Climate Change Impacts

New Jersey has experienced a 3.5° F (1.9° C) increase in the State's average temperature. By 2050, temperatures in New Jersey are expected to increase by 4.1 to 5.7° F.

12-Month Temperature Averages in Passaic County



Flood

Foods are one of the most frequent and costly natural hazards in Passaic County in terms of human hardship and economic loss, particularly to communities that lie within flood prone areas or floodplains.

Population Exposed

20,905

(4%)

In 1% Annual Chance Flood Area

32,037

(6.2%)

In 0.2% Annual Chance Flood Area

Number of Buildings Exposed

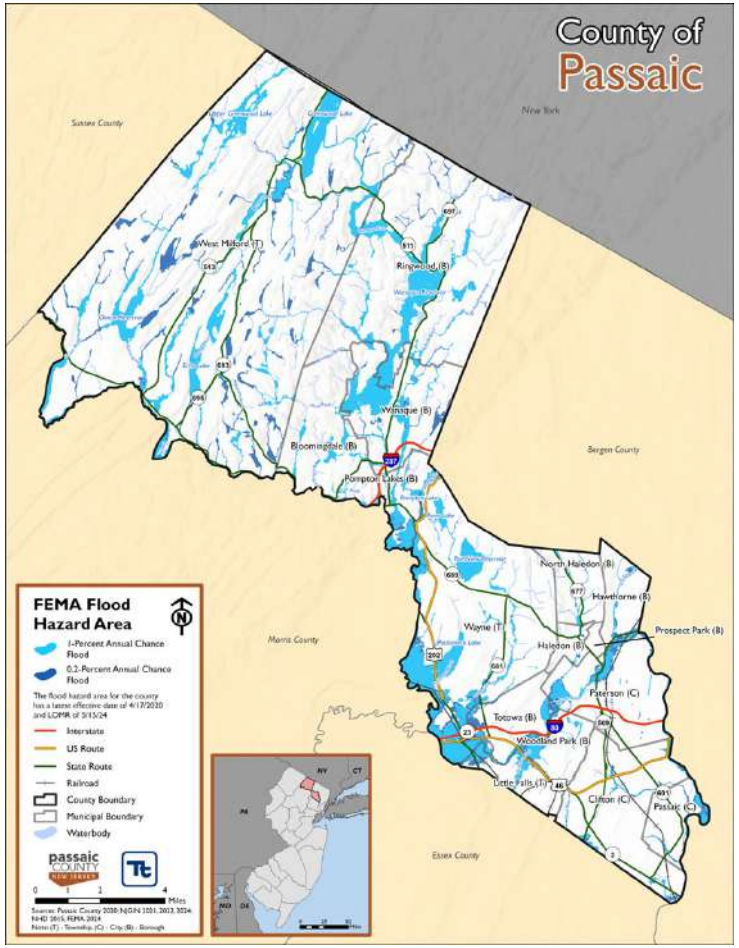
4,713

In 1% Annual Chance Flood Area

6,984

In 0.2% Annual Chance Flood Area

Location



Flood Building Replacement Cost Value

$5,093,354,852

In 1% Annual Chance Flood Area

$9,527,098,533

In 0.2% Annual Chance Flood Area

Land Exposed to 1% Annual Chance Flood

8,445

Hazard Types

- Riverine / Inland
- Flash Flood
- Urban / Stormwater
- Coastal
- Ice Jam
- Erosion
- Sea Level Rise

Severe Weather

Severe weather can occur anywhere in the County at any time and have the potential to be life-threatening. It is critical for the community to prepare and be aware of forecasts in their local jurisdictions.

Population Exposed

519,986

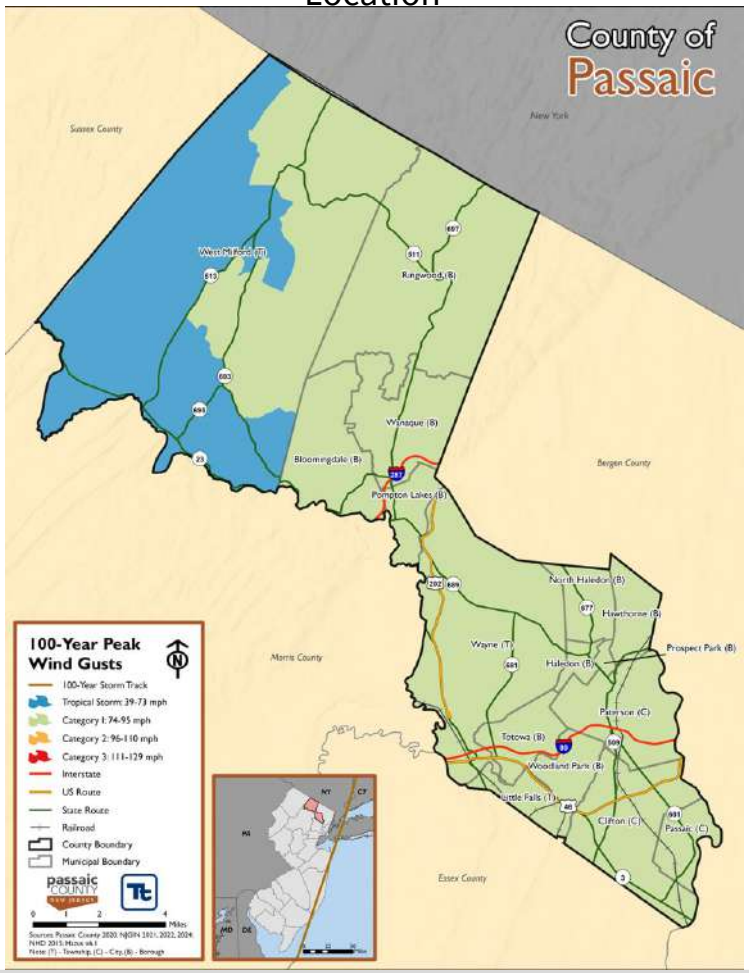
(100%)

The entire County is susceptible

Notable Information

Passaic County is in Wind Zone II, where wind speeds can reach up to 160 mph and is part of the hurricane-susceptible region. The maximum three-second gust wind speeds for Passaic County range from Category 1 to Category 2 hurricane speeds for the 500-year MRP event.

Location



Potential Impacts

- Essential Services Interruptions
- Power Outages
- Downed Trees
- Property Damage
- Personal Injury

Climate Change Impacts

New Jersey has experienced a 3.5° F (1.9° C) increase in the State's average temperature. By 2050, temperatures in New Jersey are expected to increase by 4.1 to 5.7° F. Increases will be more conducive to increased frequency and intensity of severe storms (e.g., thunderstorms, tornados).

Hazard Types

- High Wind
- Tornado
- Thunderstorm and Lightning
- Hailstorms
- Hurricanes and Tropical Storms

Severe Winter Weather

Severe winter weather can occur anywhere in the County and have the potential to be life-threatening. It is critical for the community to prepare and be aware of forecasts in their local jurisdictions.

Population Exposed

519,986

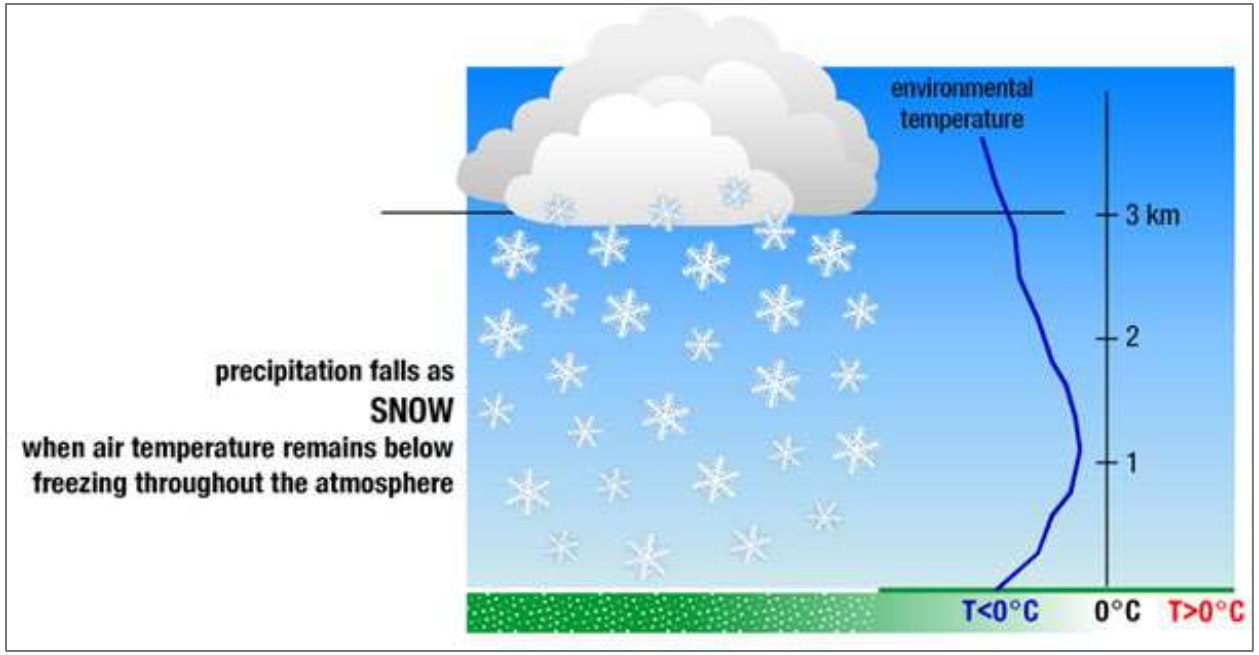
(100%)

The entire County is susceptible

Hazard Types

- Heavy Snow
- Blizzard
- Sleet
- Ice Storm
- Nor'easter

Formation of Snow



Notable Occurrences

Between 1945 and 2006, Passaic County received 25.9 inches of snow on average every year, based on totals measured at Wanaque Raymond Dam.

Passaic County was also included in two USDA severe winter weather related agricultural disaster declarations.

Wildfire

Wildfire events in Passaic County typically occur toward the forested southeastern portions of the County in the Pinelands. Wildfires can have impacts on critical services, utilities, and properties, and may cause injury.

Population Exposed

261

(0.1%)

Of the County is susceptible

Building Replacement Cost Value

$265,254,645

In Extreme, Very High, or High Wildfire Fuel Risk Hazard Area

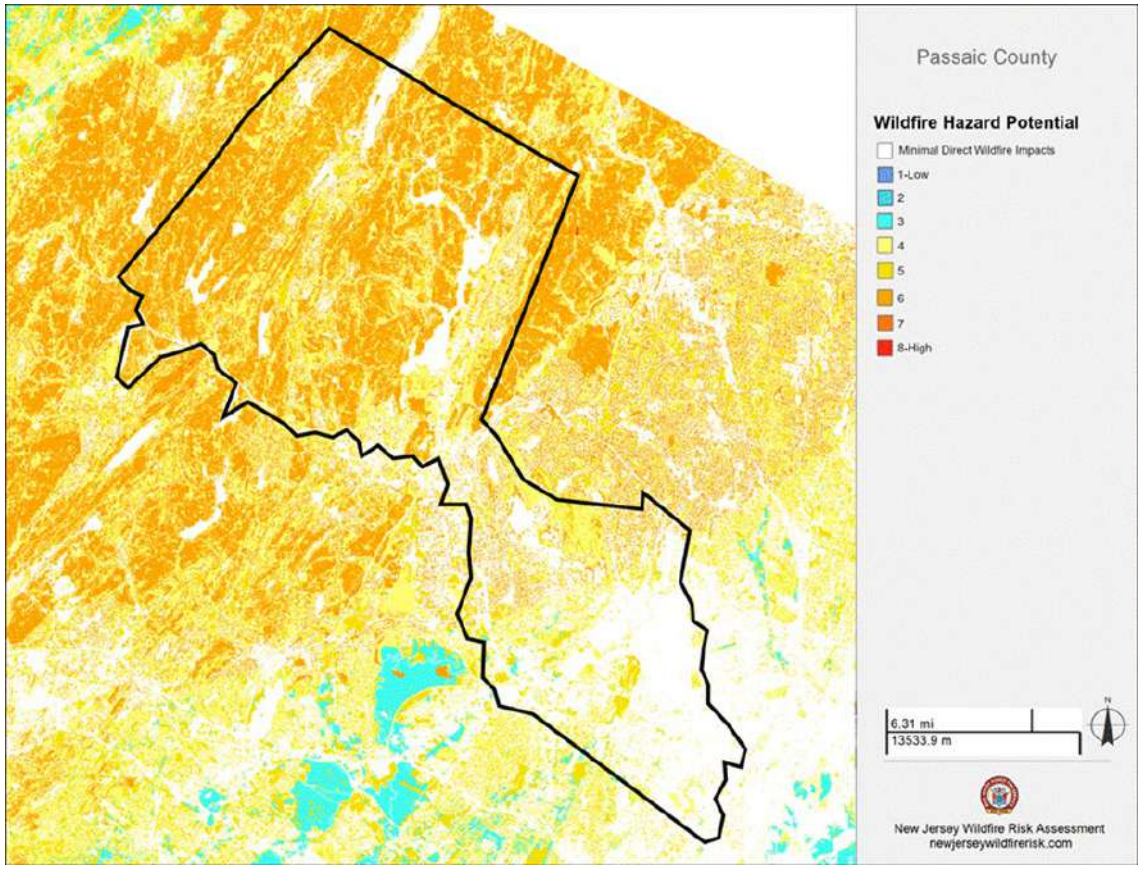
Number of Buildings Exposed

126

(0.1%)

In Extreme, Very High, or High Wildfire Fuel Risk Hazard Area

Location

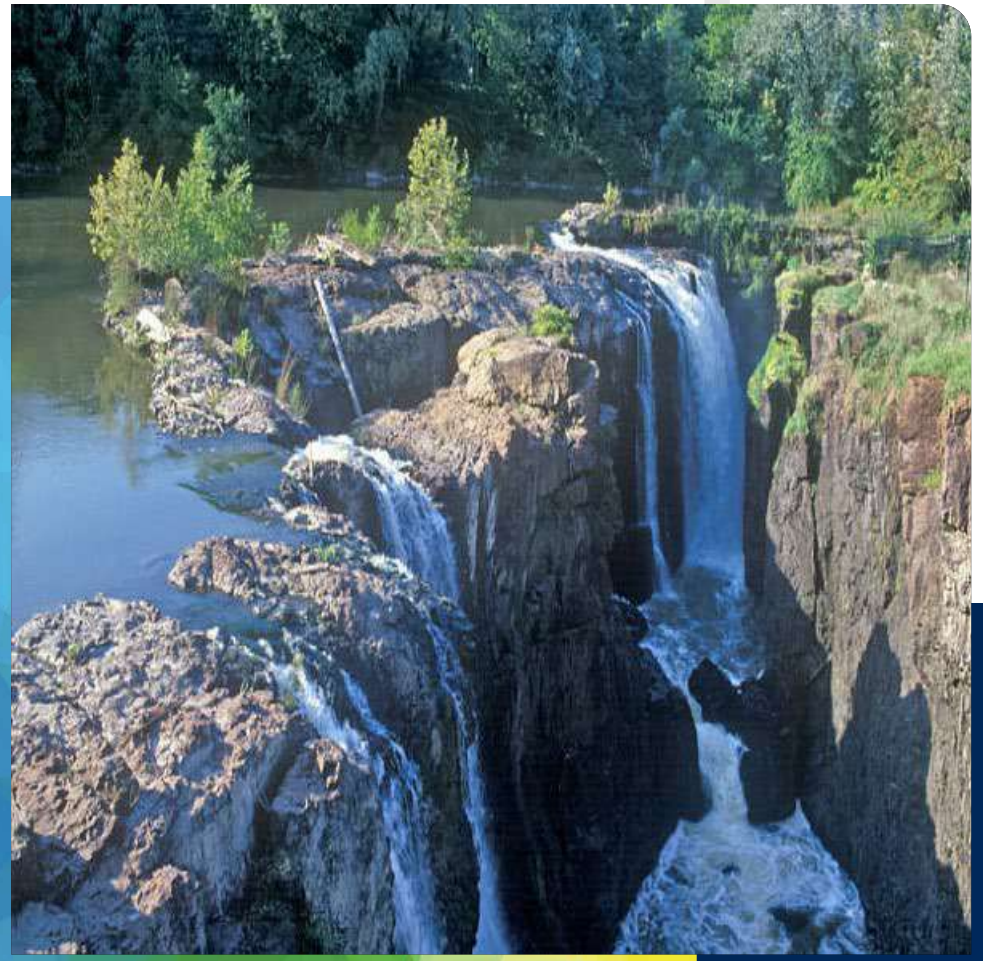


Notable Occurrences

In Passaic County, between 2018 and 2023, there have been a total of 6 fires with a total acres burned of 28.75 and no occurrences of prescribed burns.

Climate Change Impacts

Passaic County can expect warmer and drier conditions which may increase the frequency and intensity of wildfires. 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.



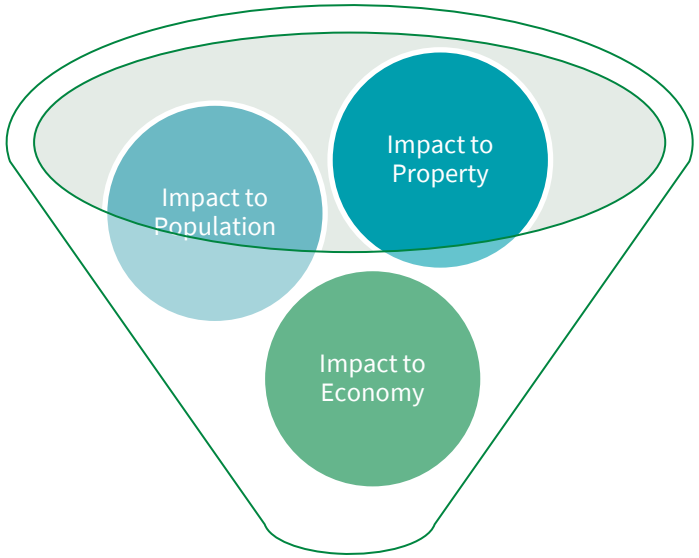
Hazard Rankings

Review the calculated hazard rankings and provide your feedback.

Preliminary Hazard Ranking Methodology

- The calculated probability of a hazard occurring based on historical data
- *Impacts to people, property, and the economy* based on GIS data and analysis of exposure.
- The degree to which *climate change* will affect future occurrences based on best available data.
- The degree to which existing *capabilities* (the ability of your community to respond to the hazard based on ordinances, mitigation strategies and procedures, and readiness) decrease overall risk.

Preliminary Hazard Ranking Formula



Probability of Occurrence (30%) + **Impacts (30%)** + **Adaptive Capacity (30%)** + **Climate Change (10%)** → **Preliminary Hazard Ranking**

Local community input to adjust preliminary rankings

Preliminary Risk Ranking (County)

Hazard	Ranking
Dam Failure	Medium
Drought	Medium
Extreme Temperature	Low
Flood	High
Geologic Hazards	Low
Severe Weather	Medium
Severe Winter Weather	Medium
Wildfire	Low

Next Steps

- Share information about the HMP Update via social media, community groups, and networks.
- Review Draft Rankings and make updates.
- Continue to develop mitigation actions via SWOO or working with your Tetra Tech Planner.



Questions?



Passaic County Project Contact

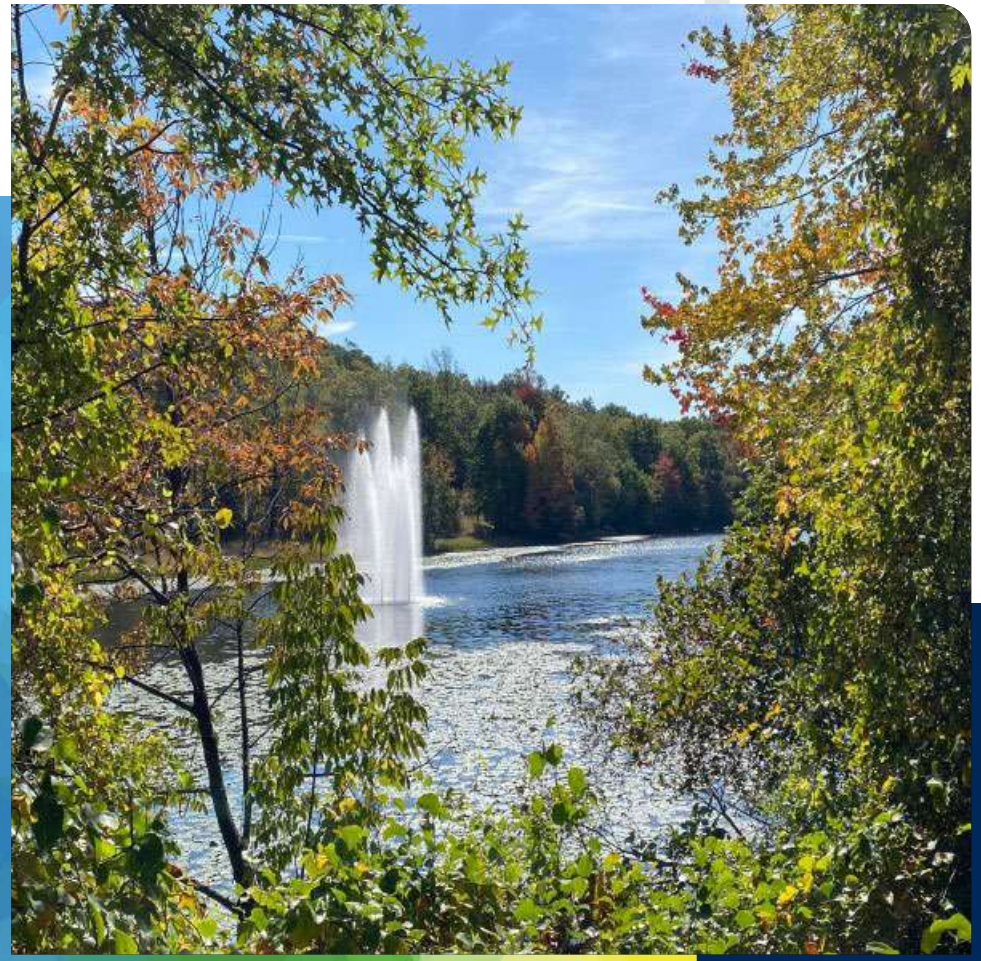
Maria Dombayci, Office of Emergency Management
(973) 904-3621 | mariado@passaiccountynj.org

Tetra Tech Project Contacts

Karen Montes-Berrios, Project Manager
(939) 645-7786| karen.montesberrios@tetratech.com

Emma Kilkelly, Lead Planner
(212) 615-3681 | emma.kilkelly@tetratech.com

Lunch Break



Identify Mitigation Strategies

Purpose of Mitigation Strategy

- The **Mitigation Strategy** is the County's roadmap to reduce the risk of hazards identified in the HMP. The strategy is based on hazard impacts, asset vulnerability, and the County's capabilities.
- **Mitigation Actions** are specific activities, such as policies, projects, and studies, that stakeholders identify to reduce risk.
  - Forward-looking and incorporate changing conditions for the life of the County's assets
  - Consider changing demographics, development patterns, impacts of climate change.
  - Examples of actions may include elevating electrical and HVAC equipment to reduce the likelihood of damage from floodwaters or planting trees to lower temperatures exacerbated by pavement.
  - ***Actions included in the plan are eligible for certain types of FEMA funding.***

Using Your Mitigation Strategy to Reduce Risk

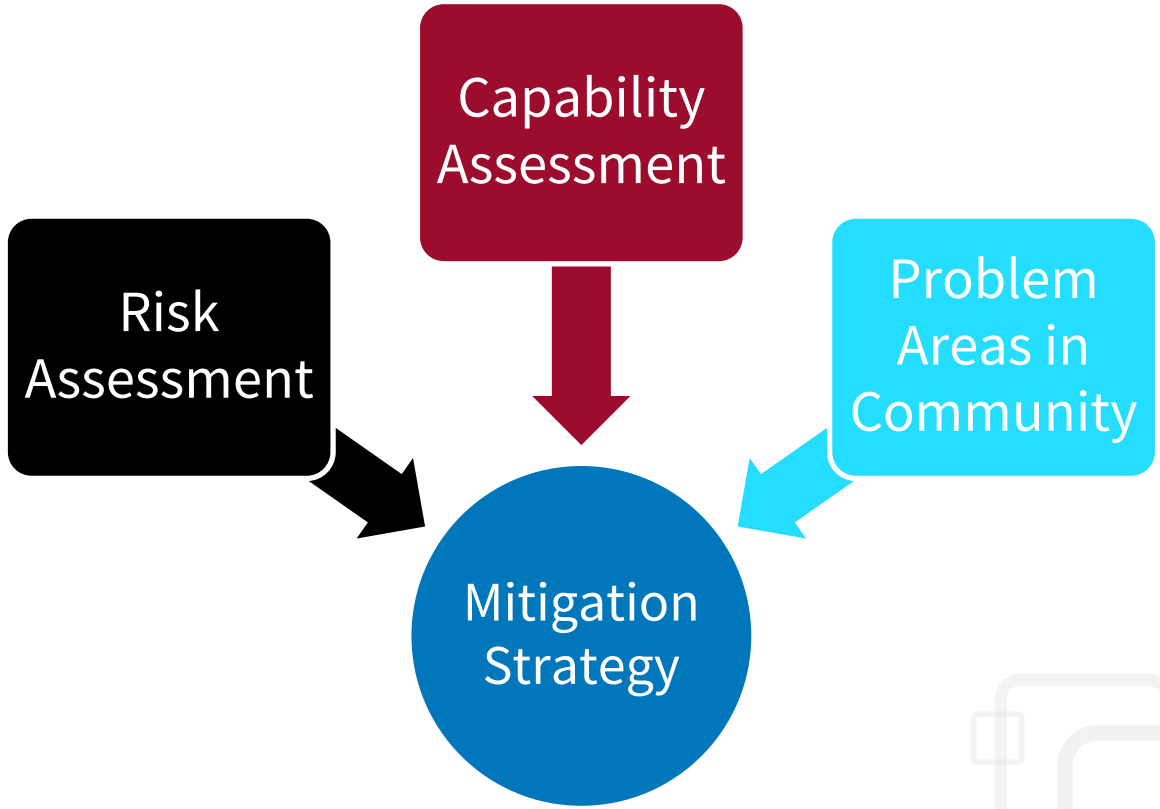
- What is a ***Mitigation Strategy***?
  - A group of projects or actions to reduce the impacts of the hazards of concern on your community
    - — Plans and Regulations
    - — Structure and Infrastructure Studies and Projects
    - — Natural Systems Protection Studies and Projects
    - — Education and Awareness Programs
- Terms to describe the *Mitigation Strategy* include:
  - **Mitigation Action Plan** or **Action Plan**
  - **Mitigation Projects** or **Initiatives** or **Actions**

Your Mitigation Strategy is included in your annex.

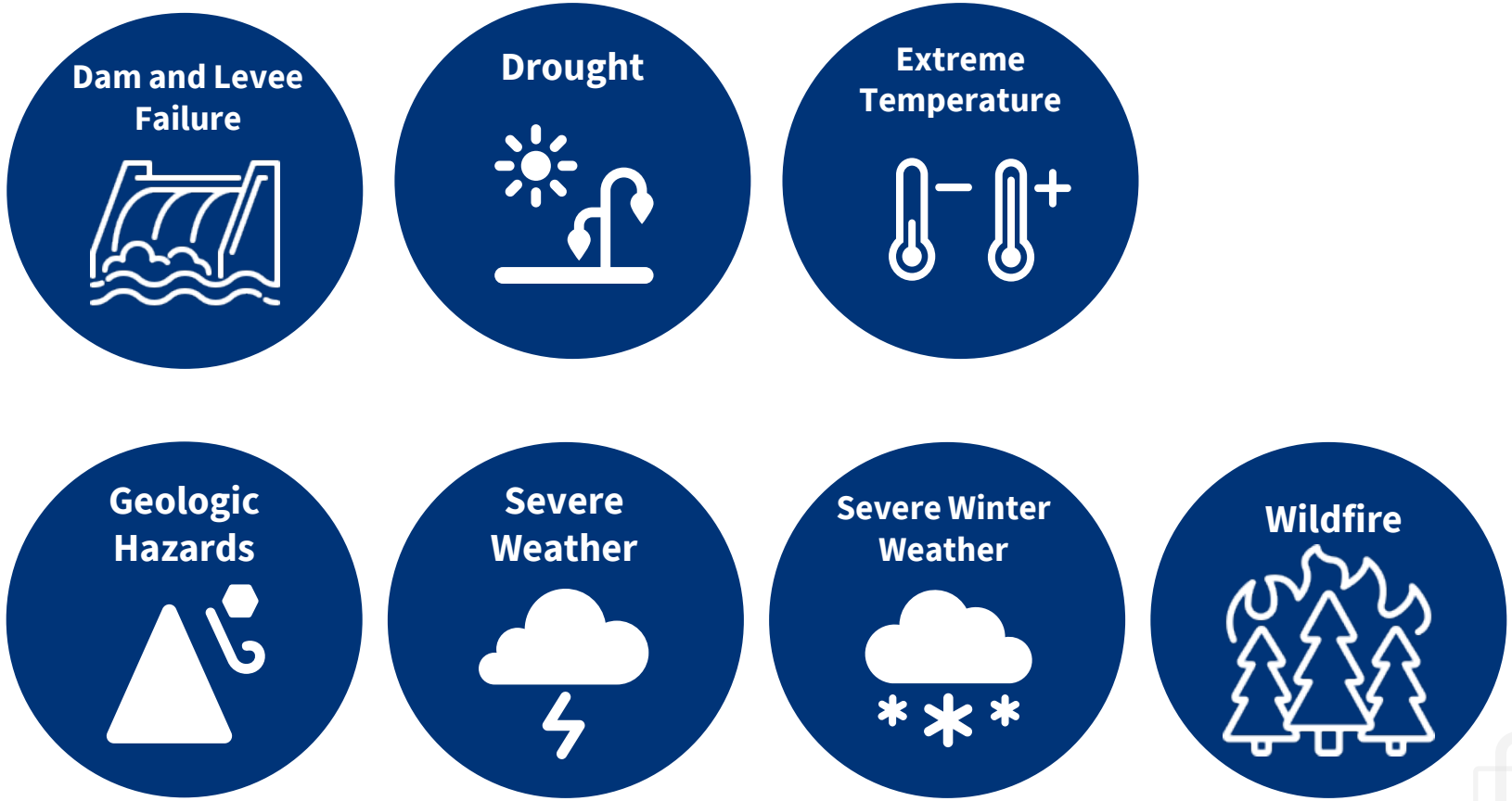
Each action will be developed on individual Action Worksheets to include detailed information that can serve as starting points for grant applications and guide implementation

Connecting to the Mitigation Strategy

- Need a clear connection between vulnerabilities identified in the risk assessment and proposed mitigation actions.
- The capability assessment can provide insight into challenges and opportunities for the mitigation strategy.
- All actions proposed in the mitigation strategy must have a factual basis tied to hazards (*this shouldn't be a wish list*!)

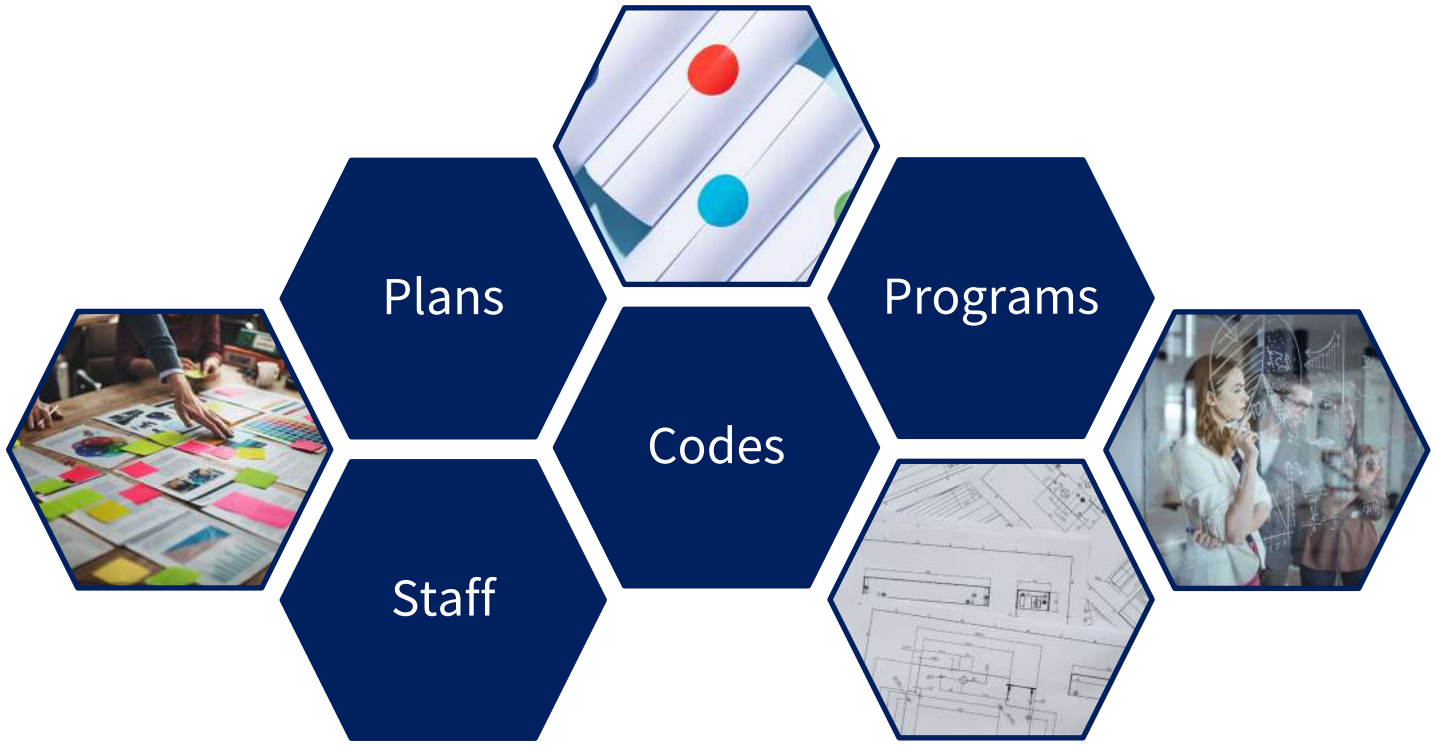


Hazards of Concern



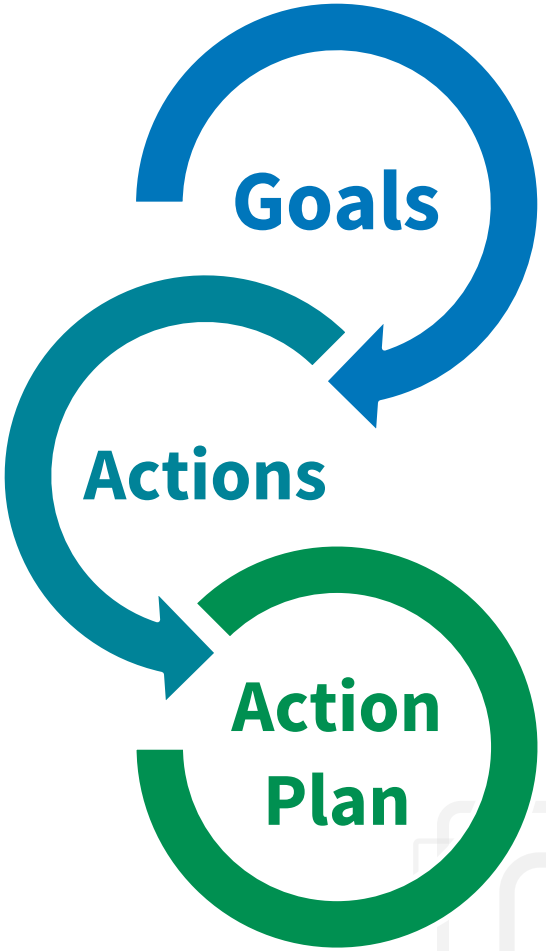
Capability Assessment

- Capabilities
  - What does your jurisdiction use to reduce risk to hazards?



Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce hazard risk?
- Action Plan
  - How will the actions be prioritized and implemented?



Review of 2020 HMP Goals

	Goal
1	Protect life
2	Protect property
3	Increase Public Preparedness and Awareness
4	Develop and maintain an understanding of risks from hazards
5	Enhance county and local mitigation capabilities to reduce hazard vulnerabilities
6	Support continuity of operations pre-, during and post-hazard events

Are there any suggestions for new or modified goals for this plan update?



Develop New Actions

Requirements for the Mitigation Strategy Update

- Quality not quantity
  - Each action needs detailed information on the why, who, what, and when of the action.
- 2020 projects
  - If a project is not finished and still a priority, include in 2025 HMP
  - Remove general projects or make more specific
  - Remove ongoing capabilities like maintenance or annual outreach
- **Each hazard needs at least one mitigation action**
- If your jurisdiction has Repetitive Loss Properties - an action is needed to mitigate the properties (elevation or acquisition) with specifics (street or neighborhood names, not specific addresses)

Where do you need to focus?

- **Stronger connection** between the risk assessment and mitigation strategy
- **More specific, achievable actions**
  - Specific projects, in specific locations, in a specific timeframe
  - Focus on socially vulnerable populations and underserved communities
- **Diverse actions**
  - You need at least **one action per hazard of concern**. Think about actions that can cover multiple hazards.
  - Include a variety of action types (e.g., plans, floodproof critical facilities, outreach programs, etc.)

Other Mitigation Actions to Consider



- Local Disaster Debris Management Plans
- Substantial Damage Management Plan
- Actions to address high-hazard or significant-hazard dams
- Public education and outreach programs
- Generators at critical facilities and community lifelines
- Floodproofing critical facilities and community lifelines
- Addressing repetitive and severe repetitive loss properties

Mitigation Action Types

Plans and regulations include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.

Structure and infrastructure projects involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.

Natural systems protection projects minimize losses while also preserving or restoring the function of natural systems.

Education and awareness programs include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.

Table 1. Mitigation Action Worksheet

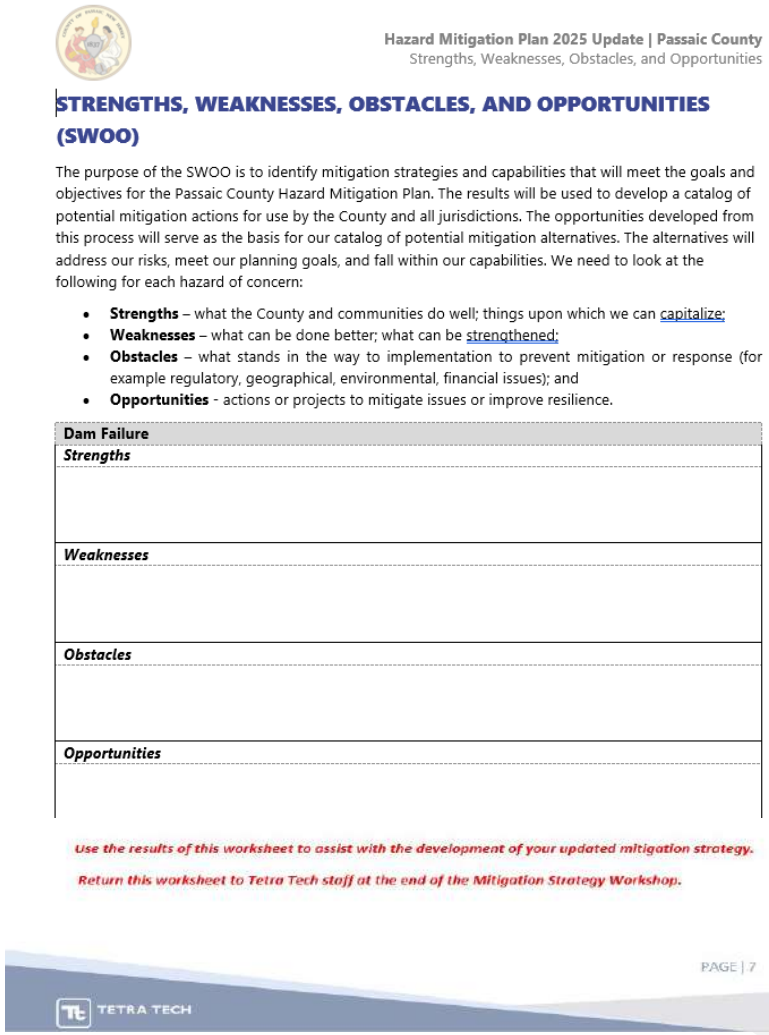
Lead Agency:		
Supporting Agencies:		
Hazard(s) of Concern:		
Description of the Problem:		
Description of the Solution:		
Estimated Cost:		
Potential Funding Sources:		
Implementation Timeline:		
Goals Met:		
Benefits:		
Impact on Socially Vulnerable Populations:		
Impact on Future Development:		
Impact on Critical Facilities/Lifelines:		
Impact on Capabilities:		
Climate Change Considerations:		
Mitigation Category		
CRS Category		
Priority		
Alternatives:	Action	Evaluation



STRENGTHS, WEAKNESSES, OBSTACLES, AND OPPORTUNITIES (SWOO)

Strengths, Weaknesses, Obstacles, and Opportunities (SWOO)

- The purpose of the SWOO is to identify mitigation strategies and capabilities that will meet the goals and objectives for the Passaic County HMP. The results will be used to develop a catalog of potential mitigation actions for use by the County and all jurisdictions. Look at the following for each hazard of concern:
  - Strengths – what the County and communities do well; things upon which we can capitalize;
  - Weaknesses – what can be done better; what can be strengthened;
  - Obstacles – what stands in the way to implementation to prevent mitigation or response (for example regulatory, geographical, environmental, financial issues); and
  - Opportunities - actions or projects to mitigate issues or improve resilience.
- Return this sheet to Emma Kilkelly (emma.kilkelly@tetratech.com) at Tetra Tech by the end of this week.



Hazard Mitigation Plan 2025 Update | Passaic County
Strengths, Weaknesses, Obstacles, and Opportunities

STRENGTHS, WEAKNESSES, OBSTACLES, AND OPPORTUNITIES (SWOO)

The purpose of the SWOO is to identify mitigation strategies and capabilities that will meet the goals and objectives for the Passaic County Hazard Mitigation Plan. The results will be used to develop a catalog of potential mitigation actions for use by the County and all jurisdictions. The opportunities developed from this process will serve as the basis for our catalog of potential mitigation alternatives. The alternatives will address our risks, meet our planning goals, and fall within our capabilities. We need to look at the following for each hazard of concern:

- **Strengths** – what the County and communities do well; things upon which we can capitalize;
- **Weaknesses** – what can be done better; what can be strengthened;
- **Obstacles** – what stands in the way to implementation to prevent mitigation or response (for example regulatory, geographical, environmental, financial issues); and
- **Opportunities** - actions or projects to mitigate issues or improve resilience.

Dam Failure
Strengths
Weaknesses
Obstacles
Opportunities

Use the results of this worksheet to assist with the development of your updated mitigation strategy.

Return this worksheet to Tetra Tech staff at the end of the Mitigation Strategy Workshop.

PAGE | 7

TETRA TECH

Next Steps

- NOW: Complete your worksheets, ask questions, and provide to Tetra Tech staff
- NOW: Provide update to Tetra Tech staff on any missing worksheets, when you will submit them, and how Tetra Tech can assist you
- AFTER WORKSHOP: Continue to share information about the HMP Update via social media, community groups, and networks. Let us know who you share information with!
- NEXT MONTH: Work with Tetra Tech planners to complete annexes and finalize actions.



Workshop

Review previous mitigation actions, identify new actions, complete missing areas in your annex.

Before you leave, check in with Tetra Tech staff!



Passaic County Project Contact

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(973) 904-3621 | mariado@passaiccountynj.org

Tetra Tech Project Contacts

Karen Montes-Berrios, Project Manager
(939) 645-7786 | karen.montesberrios@tetratech.com

Emma Kilkelly, Lead Planner
(212) 615-3681 | emma.kilkelly@tetratech.com

Thank You!

Purpose of Meeting:	Draft Plan Review Meeting
Location of Meeting:	Teleconference
Date of Meeting:	March 20, 2025
Attendees: ○	○

Agenda Summary: The purpose of the meeting was to provide an update on the planning process and status update, provide an opportunity for the Steering Committee to comment on the draft 2025 Passaic County HMP framework, discuss the Plan Maintenance strategy for the 2025 HMP, review the FEMA Approval Process, discuss next steps, and address any questions or comments.

Item No.	Description	Action item(s):
1	**Introductions**	-
2	Project Status • Welcome and Introductions • HMP Draft Review • What's New? • 2025 Framework • Draft Plan Review Process • Public Outreach and Engagement • Questions/Wrap Up	**Planning Partnership** • Post links on social media and department/agency websites • Make efforts to reach out to general public, stakeholders, neighbors, and socially vulnerable populations
3	**What's New?** • Updated County profile on physical setting, demographic trends, socially vulnerable populations, general building stock, and new development • Updated critical facility asset list and transitioned to FEMA's Community Lifeline framework • Updated Risk Assessment using new population and asset data; updated hazard and climate information; and hazard events since last plan • Enhanced jurisdictional annexes to develop clearer and more action-oriented mitigation strategies • Enhanced public and stakeholder engagement through public meetings, use of social media and focus on creating a user-friendly HMP document and website	-
4	**2025 HMP Framework** • Volume I ○ Executive Summary ▪ Provides an overview of how the plan is laid out by describing the various chapters within the plan ○ Chapter 1 Introduction ▪ This is the introduction of the HMP, explains the update process, who participated, and what changes have been made since the last plan. ○ Chapter 2 Planning Process ▪ Provides a timeline of how the planning process was done and everything that went into developing the plan. It includes meeting dates, activities, and plan participants. ○ Chapter 3 County Profile	-

	▪ Provides general information for the Planning Area and critical facilities/lifelines located within the area. ○ Chapter 4 Risk Assessment ▪ Provides a foundation for the rest of the planning process – which focuses on identifying and prioritizing actions to reduce risk to hazards. ○ Chapter 5 Hazard of Concern Identification ▪ Describes the process to review all potential hazards and identify the hazards that have the potential to impact the Planning Area ○ Chapters 6 through 13 Hazard Profiles ▪ Documents the general description of the hazard and the outcome of the risk analysis. It is broken down into 2 sections – hazard profile and vulnerability assessment ○ Chapter 14 Hazard Ranking ▪ Provides information on the methodology used to determine the preliminary hazard rankings ○ Chapter 15 Capability Assessment ▪ Identifies the primary types of capabilities – planning and regulatory, administrative, and technical, financial, and education and outreach –existing plans, policies, programs, etc. available at the county, state, and federal level to help the County and municipalities accomplish mitigation. ○ Chapter 16 Mitigation Strategy ▪ Gives an overview of the process and then in each annex, we show the projects and procedures you all will do to reduce or eliminate future losses from hazards. ○ Chapter 17 Plan Maintenance ▪ Describes how the County will keep the hazard mitigation plan up to date over the next five years. • Volume II ○ Chapter 1 Planning Partnership ▪ Gives an overview of how each jurisdiction participated in the plan and how the annexes are laid out. ○ Chapters 2 through 18 Jurisdictional Annexes ▪ Where the individual jurisdictional annexes of the plan are located. It shows us who participated in the plan, gives a general description of the municipality, outlines and summarizes your capabilities at the local level, provides the jurisdictional hazard ranking, includes a status of mitigation actions from 2020 and then includes mitigation actions for the 2025 HMP. • Appendices: This is where you'll find a draft adoption/resolution for when you need to adopt the plan, tables of who participated in the process and how; meeting documentation (minutes, presentations, etc.), public and stakeholder outreach; mitigation strategy data; plan maintenance tools; critical facilities (the list of facilities will not be posted for public review due to their sensitive nature); and linkage procedures for anyone who didn't participate this time around and would like to join the plan in the next 5 years. ○ Appendix A. Adoptions ○ Appendix B. Participation ○ Appendix C. Meeting Documentation ○ Appendix D. Outreach ○ Appendix E. Mitigation Supplementary Data	

	○ Appendix F. Plan Maintenance ○ Appendix G. Critical Facilities ○ Appendix H. Risk Assessment Supplement ○ Appendix I: NJOEM Planning Standards ○ Appendix J: Linkage Procedures ○ Appendix K: HHPD Dam Supplement	
5	**FEMA Approval Process** • The plan is made available for public and State review. ○ Feedback and comments will be incorporated into a second draft. • The second draft will be submitted to FEMA for review and approval. ○ If FEMA has questions or comments those will be addressed. ○ FEMA will grant the plan 'Approvable Pending Adoption' status, meaning FEMA will approve the plan once it has been locally adopted. • The County and municipalities will formally adopt the plan. ○ Resolution is submitted to FEMA and FEMA grants final approval.	-
6	**Review the Draft Plan** • The plan will be uploaded to Passaic HMP website by next week. Individual annexes will be sent to each OEM coordinator for review on Monday March 24, 2025. • Input requested on additional/specific information and corrections/omissions. • Draft plan available for comment until Wednesday April 30, 2025 • Public feedback will be incorporated as appropriate prior to submittal to NJOEM/FEMA for their review.	-
7	**Providing Feedback** • What material do you find the most relevant? • Do the results align with your experiences within the community? • What new insights are you gaining? • Are there any aspects that you find unexpected? • Do the mitigation actions meet community needs and priorities? • What, if anything, can be done to improve the proposed actions? • What do you think are the strengths of the plan? • What areas do you think need improvement? • General suggestions and comments.	-
8	**Next Steps** • Draft Plan Review Meeting – March 20 • Public Review Period (30 days) – March 31 through April 30 • NJOEM Review will start once Public Review Period is concluded in April • Submit Draft Plan for FEMA Review by May/June 2025 • FEMA approves plan (July – August 2025); begin adoption • BATool Tutorial and Adoptions Meeting Overview (July 2025) • Implement Projects and Maintain the Plan → Increase Resilience!	-
9	**Questions/Discussion** • Are municipalities required to advertise? They are not, but encouraged.	-



TETRA TECH

Passaic County Multi-Jurisdictional Hazard Mitigation Plan 2025 Update

Public Draft Plan Review Meeting

Thursday March 20, 2025



Today's Agenda

1. Welcome and Introductions
2. HMP Draft Review
   - What's New?
   - 2025 Framework
3. Draft Plan Review Process
4. Public Outreach and Engagement
5. Questions/Wrap Up



Planning Process



What's new in the 2025 update?

- Updated County profile on physical setting, demographic trends, socially vulnerable populations, general building stock, and new development
- Updated critical facility asset list and transitioned to FEMA's Community Lifeline framework
- Updated Risk Assessment using new population and asset data; updated hazard and climate information; and hazard events since last plan
- Enhanced jurisdictional annexes to develop clearer and more action-oriented mitigation strategies
- Enhanced public and stakeholder engagement through public meetings, use of social media and focus on creating a user-friendly HMP document and website

2025 HMP Framework

Volume I

- Executive Summary
- Chapter 1. Introduction
- Chapter 2. Planning Process
- Chapter 3. County Profile
- Chapter 4. Risk Assessment Methodology
- Chapter 5. Hazards of Concern ID
- Chapters 6-13. Hazard Profiles
  - Dam Failure, Drought, Earthquake, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, and Wildfire
- Chapter 14. Hazard Ranking
- Chapter 15. Capability Assessment
- Chapter 16. Mitigation Strategy
- Chapter 17. Plan Maintenance

2025 HMP Framework

Volume II

- Chapter 1. Introduction
- Chapters 2-17. Jurisdictional Annexes

Appendices

- Appendix A. Adoptions
- Appendix B. Participation
- Appendix C. Meeting Documentation
- Appendix D. Outreach
- Appendix E. Action Worksheet
- Appendix F. Plan Maintenance
- Appendix G. Critical Facilities
- Appendix H. Risk Assessment Supplement
- Appendix I: Mitigation Strategy Supplement
- Appendix J: NJOEM Planning Standards
- Appendix K: Linkage Procedures

Content Overview: Volume I

1. Introduction
2. Planning Process
3. County Profile
4. Risk Assessment
5. Capability Assessment
6. Mitigation Strategy
7. Plan Maintenance

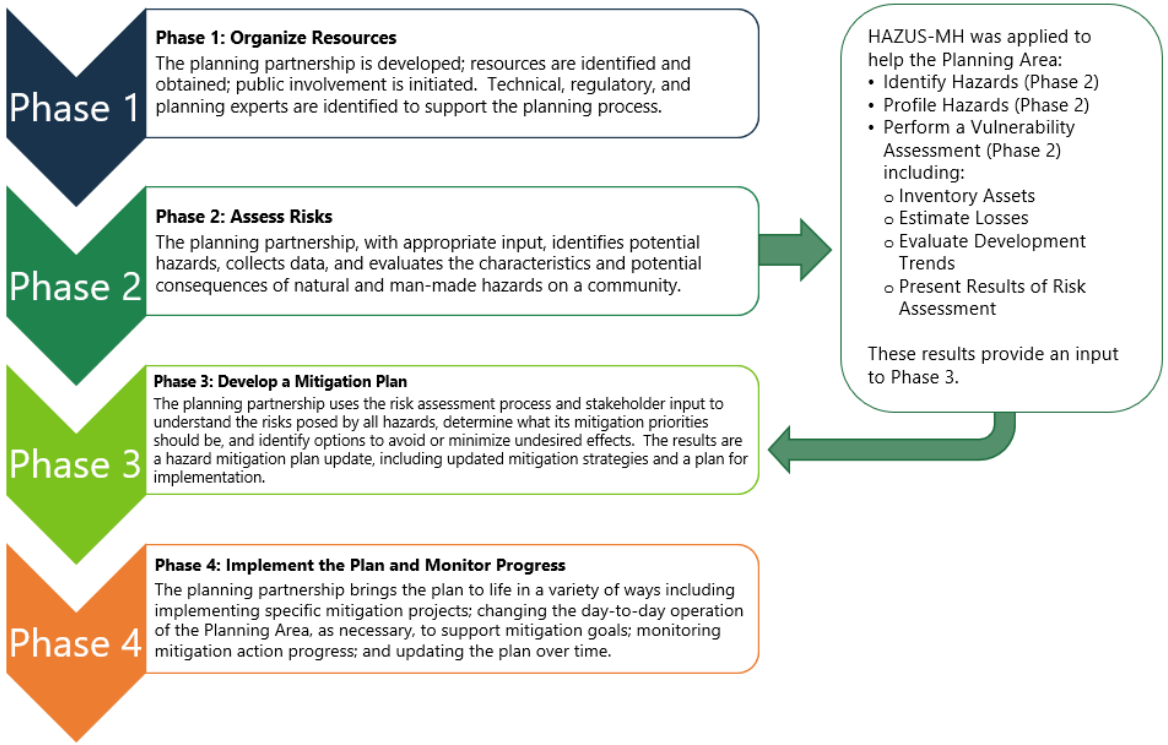
- ✓ Mitigation planning overview
- ✓ Participating jurisdictions
- ✓ Summary of changes since last plan
- ✓ Committees, stakeholders, and other participants
- ✓ Activities
- ✓ Ongoing processes

Volume I
Executive Summary

- Provides an overview of how the plan is laid out by describing the various chapters within the plan
  - Light summaries of key components of the HMP
    - Hazard Mitigation Overview
    - Planning Process
    - Involvement by Stakeholders and the Public
    - Risk Assessment for Local Hazards of Concern
    - Capability Assessment and Plan Integration
    - Mitigation Strategy

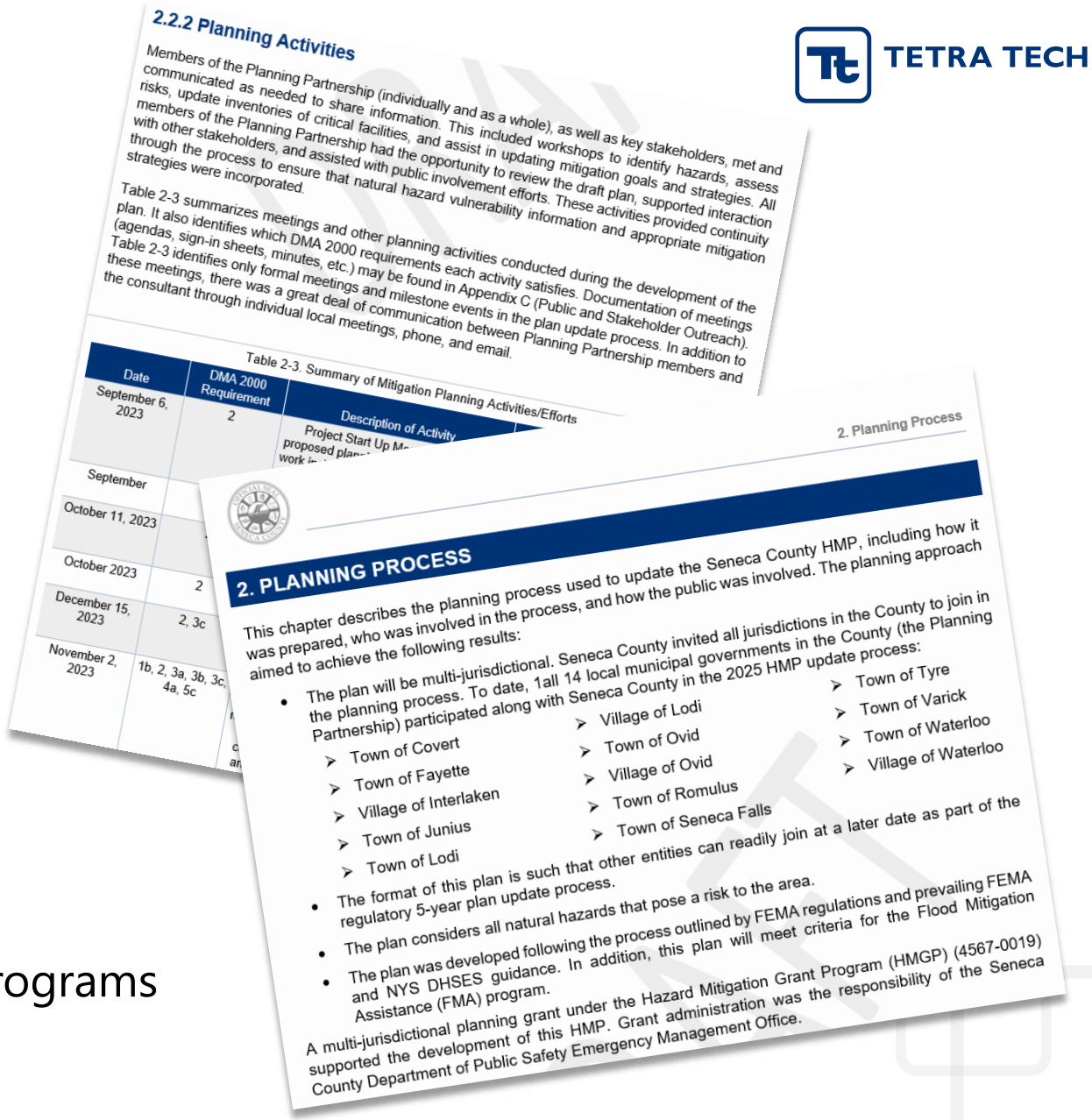
Volume I
1. Introduction

- Plan Purpose
- Background of the plan
- Plan Organization
- Planning Differences – 2020 HMP vs. 2025 HMP



Volume I
2. Planning Process

- Introduction
- Organization of the Planning Process
  - Organization of the Planning Partnership
  - Planning Activities
- Stakeholder Outreach and Involvement
  - Federal, State, and County Agencies
  - Regional and Local Stakeholders
  - Stakeholder and Neighbor Survey Summaries
- Public Participation – Public Involvement
  - Public Survey Summary
- Plan Integration
- Integration with Planning Mechanisms and Programs
- Continued Public Involvement



Content Overview: Volume I

1. Introduction
2. Planning Process
3. County Profile
4. Risk Assessment
5. Capability Assessment
6. Mitigation Strategy
7. Plan Maintenance

- ✓ History & topography
- ✓ Hazard event history
- ✓ Demographics & population trends
- ✓ Building stock
- ✓ Critical facilities/lifelines

- ✓ Hazards of concern
- ✓ Hazard ranking
- ✓ Hazard profiles

Volume I
3. County Profile

- General Information
- Major Past Hazard Events
- Physical Setting
  - Location
  - Hydrography and Hydrology
  - Topography and Geography
  - Climate
  - Land Use and Land Cover
- Population and Demographics
  - General Population Characteristics
  - Vulnerable Populations
  - Population Trends
- General Building Stock
  - Development Trends and New Development
- Lifeline Facilities
  - Formerly discussed as Critical Facilities

Volume I
4. Risk Assessment Methodology

- Describes the various procedures and tools used to complete the risk assessment
- Steps to do so included:
  - Identifying and profiling each hazard of concern
  - Determine exposure to each hazard
  - Assess the vulnerability of exposed population/buildings/economy

Volume I
5. Hazard of Concern Identification

- Describes the process to review all potential hazards and identify the hazards that have the potential to impact the Planning Area.



Volume 1
6 – 13. Hazard Profiles

TETRA TECH

Hazard Description

Defines and outlines the characteristics of the hazard.

Location

Describes the geographical location where the hazard may occur. If the hazard has a physical location a map is included.

Extent

Describes the strength of the hazard, including the minimum and maximum levels of severity.

Previous Occurrences

A compilation of historical impacts from the hazard.

Probability of Future Occurrence

Likelihood of the hazard occurring in terms of frequency.

Cascading Impacts on Other Hazards

Describes how the hazard of concern may exacerbate other hazards in the community.

Vulnerability Assessment

Includes loss estimates and potential effects on people, property, infrastructure, the economy, and the environment.

Future Changes that May Affect Risk

Assess how projected changes in development, population, and climate change may affect the hazard.

Volume I
14. Hazard Ranking

- Provides a preliminary ranking (high, medium, low) of each hazard to show the Planning Area's hazards of greatest risk
- Provides information on the methodology used to determine the preliminary hazard rankings

Content Overview: Volume I

1. Introduction
2. Planning Process
3. County Profile
4. Risk Assessment
5. **Capability Assessment**
6. **Mitigation Strategy**
7. Plan Maintenance

- ✓ Planning, regulatory, technical/administrative and fiscal capabilities
- ✓ Available plans, resources at local, state, and federal levels

- ✓ Mitigation approach
- ✓ Problem and solution identification
- ✓ Update goals and objectives

Content Overview: Volume I

1. Introduction
2. Planning Process
3. County Profile
4. Risk Assessment
5. Capability Assessment
6. Mitigation Strategy
7. **Plan Maintenance**

- ✓ HMP Coordinator
- ✓ Planning Partnership annual meeting schedule
- ✓ Continuous monitoring and evaluation
- ✓ Plan integration
- ✓ Continued public involvement

Content Overview: Volume II

8 Planning Partnership

- Participating jurisdictions
- Introduction to jurisdictional annexes

9 Jurisdictional Annexes

- Points of Contact and Who Participated
- Municipal Profile
- Capabilities
- NFIP Participation
- Risk Assessment
- Critical Facilities
- Status of Past Mitigation Actions
- Current Mitigation Actions

Content Overview: Appendices

A. Adoptions
B. Participation Matrix
C. Meeting Documentation and Materials
D. Public and Stakeholder Outreach Documentation
E. Mitigation Strategy Support Materials
F. Plan Maintenance Tools
G. Critical Facility Inventory
H. Risk Assessment Supplementary Data
I. NJOEM Planning Guidance
J. Linkage Procedures
K. High Hazard Potential Dams

Volume 1
6 – 13. Hazard Profiles

TETRA TECH

Hazard Description

Defines and outlines the characteristics of the hazard.

Location

Describes the geographical location where the hazard may occur. If the hazard has a physical location a map is included.

Extent

Describes the strength of the hazard, including the minimum and maximum levels of severity.

Previous Occurrences

A compilation of historical impacts from the hazard.

Probability of Future Occurrence

Likelihood of the hazard occurring in terms of frequency.

Cascading Impacts on Other Hazards

Describes how the hazard of concern may exacerbate other hazards in the community.

Vulnerability Assessment

Includes loss estimates and potential effects on people, property, infrastructure, the economy, and the environment.

Future Changes that May Affect Risk

Assess how projected changes in development, population, and climate change may affect the hazard.

Volume I
15. Capability Assessment

- What is currently available at the federal, state, and county level to support mitigation in Passaic County
  - Available plans, programs, & resources
  - Administrative and technical capabilities
  - Fiscal capabilities
  - Education and outreach



Volume I
16. Mitigation Strategy

Mitigation Strategy: the County's roadmap to reduce the risk of hazards

Based on hazard impacts, asset vulnerability, and the County's capabilities.

Mitigation Actions: specific activities that stakeholders implement to reduce risk

Actions included in the plan are eligible for certain types of FEMA funding.

Volume I
16. Mitigation Strategy

- Goals
  - What outcomes do you want to achieve?
- Actions
  - What specific actions will be taken to reduce hazard risk?
- Action Plan
  - How will the actions be prioritized and implemented?



Volume I
17. Plan Maintenance

- Ongoing Planning Partnership – meet annually to discuss HMP
- Monitoring
- Continuous evaluation and progress reports
- Updating
- Integrating the HMP with existing and future programs
- Continued public involvement

Volume II

- **Chapter 1 – Introduction**
  - Participating jurisdictions
  - Introduction to jurisdictional annexes
- **Chapters 2-18 – Jurisdictional Annexes**
  - Points of Contact and Who Participated
  - Jurisdictional Profile
  - Capabilities
  - Risk Assessment
  - Status of Past Mitigation Actions
  - Current Mitigation Actions



Appendices

- Appendix A. Adoptions
- Appendix B. Participation
- Appendix C. Meeting Documentation
- Appendix D. Outreach
- Appendix E. Action Worksheet
- Appendix F. Plan Maintenance
- Appendix G. Critical Facilities
- Appendix H. Risk Assessment Supplement
- Appendix I: Mitigation Strategy Supplement
- Appendix J: NJOEM Planning Standards
- Appendix K: Linkage Procedures



Draft Plan Review Process

Draft Plan Review Process

- The plan will be uploaded to Passaic HMP website by next week. Individual annexes will be sent to each OEM coordinator for review on **Monday March 24, 2025**.
- Input requested on additional/specific information and corrections/omissions.
- Draft plan available for comment until **Wednesday April 30, 2025**
- Public feedback will be incorporated as appropriate prior to submittal to NJOEM/FEMA for their review.

Review and Approval

NJOEM Review

- NJOEM will have approximately 30-days to review the plan and ensure it meets State and FEMA requirements and guidance. Tetra Tech will address required comments.

FEMA Review

- FEMA will have approximately 45-days to review the plan and ensure it meets FEMA requirements and guidance. Tetra Tech will address required comments to obtain FEMA's 'Approvable Pending Adoption' status.

County Adoption

- Once the County adopts the plan by resolution FEMA will provide a formal approval letter. The plan will be active for the next 5-years making the County eligible to apply for certain FEMA funding.

Public Review and Comment Period

- The plan will be published and made available on the project's website for a 30-day public review and comment period starting on **Monday March 31, 2025.**
- Comments may be provided through the survey available on the project website.
- The project team will review comments and revise the plan as applicable.

https://www.passaiccountynjhmp.com/

Providing Feedback

- What material do you find the most relevant?
- Do the results align with your experiences within the community?
- What new insights are you gaining?
- Are there any aspects that you find unexpected?
- Do the mitigation actions meet community needs and priorities?
  - What, if anything, can be done to improve the proposed actions?
- What do you think are the strengths of the plan?
- What areas do you think need improvement?
- General suggestions and comments.

Next Steps

- Draft Plan Review Meeting – March 20
- Public Review Period (30 days) – March 31 through April 30
- NJOEM Review will start once Public Review Period is concluded in April
- Submit Draft Plan for FEMA Review by May/June 2025
- FEMA approves plan (July – August 2025); begin adoption
- BATool Tutorial and Adoptions Meeting Overview (July 2025)
- Implement Projects and Maintain the Plan → Increase Resilience!



Questions?



Passaic County Project Contact

Maria Dombayci, Office of Emergency Management
mariado@passaiccountynj.org

Tetra Tech Project Contacts

Karen Montes-Berrios, Project Manager
karen.montesberrios@tetratech.com

Emily Vassallo, Lead Planner
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Thank You!

APPENDIX C: PUBLIC AND STAKEHOLDER OUTREACH

This appendix provides documentation of public and stakeholder outreach. Stakeholder involvement in this planning process was broad and productive as discussed and further documented in Chapter 2 (Planning Process). Public and stakeholder input has been incorporated throughout this HMP as appropriate, as identified in Chapter 2 and the References section, as well as within specific mitigation initiatives identified within the jurisdictional annexes (Volume II). Respondent feedback filtered by jurisdiction is included in each jurisdictional annex as available to provide an indication of community resident concerns related to natural hazards.

PASSAIC COUNTY PUBLIC SURVEY RESULTS

This section contains information and results gathered from the Passaic County Public Survey. The main objective of this survey was to gather information from citizens regarding their level of knowledge regarding hazard vulnerability and knowledge of hazard mitigation information for their local communities. The survey was available on Passaic County website and the HMP website at: https://www.passaiccountynjhmp.com/. The survey results are provided in the following pages, with personal information redacted.

STAKEHOLDER SURVEYS

In addition to collecting information from residents of Passaic County, surveys were developed for the agencies and stakeholders in the County. Unlike steering committee or planning partnership members, stakeholders may not be involved in all stages of the planning process, but they may have information or input to provide. In order to gather that information, the surveys were sent to the following stakeholders: law enforcement, firefighters, emergency medical services, highway and public works, business and commerce, hospitals and health care providers, and utilities. Results of the surveys are provided in the following pages, with personal information redacted.

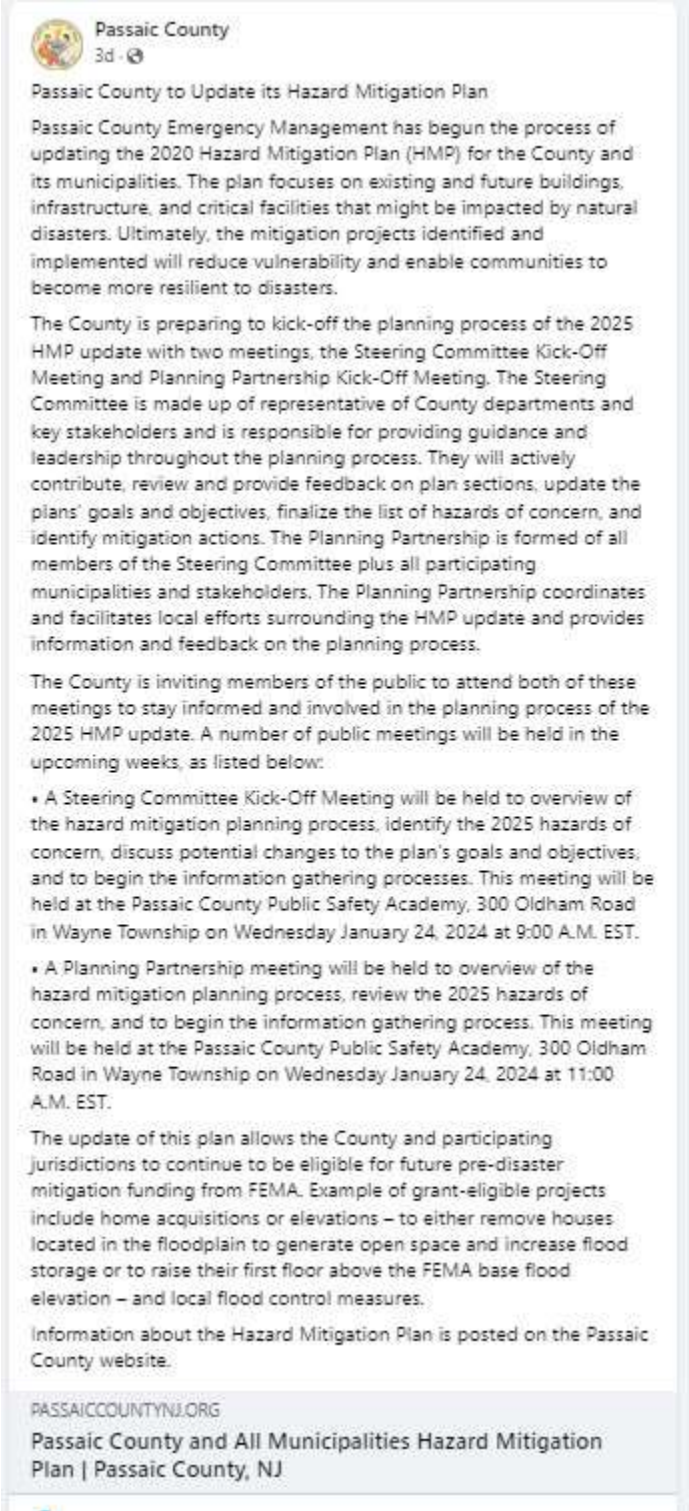
NEIGHBORING COMMUNITY SURVEY

A neighboring community survey was sent to the surrounding communities of Passaic due to their proximity to the County and because the effects of hazard events that impact Passaic County would be similar to that of their neighbors. A summary of the results are included on the following pages.

WEBSITE AND SOCIAL MEDIA POSTS

The following provides screenshots of websites, news articles, and social media posts

SOCIAL MEDIA GRAPHICS



Passaic County
3d ·

Passaic County to Update its Hazard Mitigation Plan

Passaic County Emergency Management has begun the process of updating the 2020 Hazard Mitigation Plan (HMP) for the County and its municipalities. The plan focuses on existing and future buildings, infrastructure, and critical facilities that might be impacted by natural disasters. Ultimately, the mitigation projects identified and implemented will reduce vulnerability and enable communities to become more resilient to disasters.

The County is preparing to kick-off the planning process of the 2025 HMP update with two meetings, the Steering Committee Kick-Off Meeting and Planning Partnership Kick-Off Meeting. The Steering Committee is made up of representative of County departments and key stakeholders and is responsible for providing guidance and leadership throughout the planning process. They will actively contribute, review and provide feedback on plan sections, update the plans' goals and objectives, finalize the list of hazards of concern, and identify mitigation actions. The Planning Partnership is formed of all members of the Steering Committee plus all participating municipalities and stakeholders. The Planning Partnership coordinates and facilitates local efforts surrounding the HMP update and provides information and feedback on the planning process.

The County is inviting members of the public to attend both of these meetings to stay informed and involved in the planning process of the 2025 HMP update. A number of public meetings will be held in the upcoming weeks, as listed below:

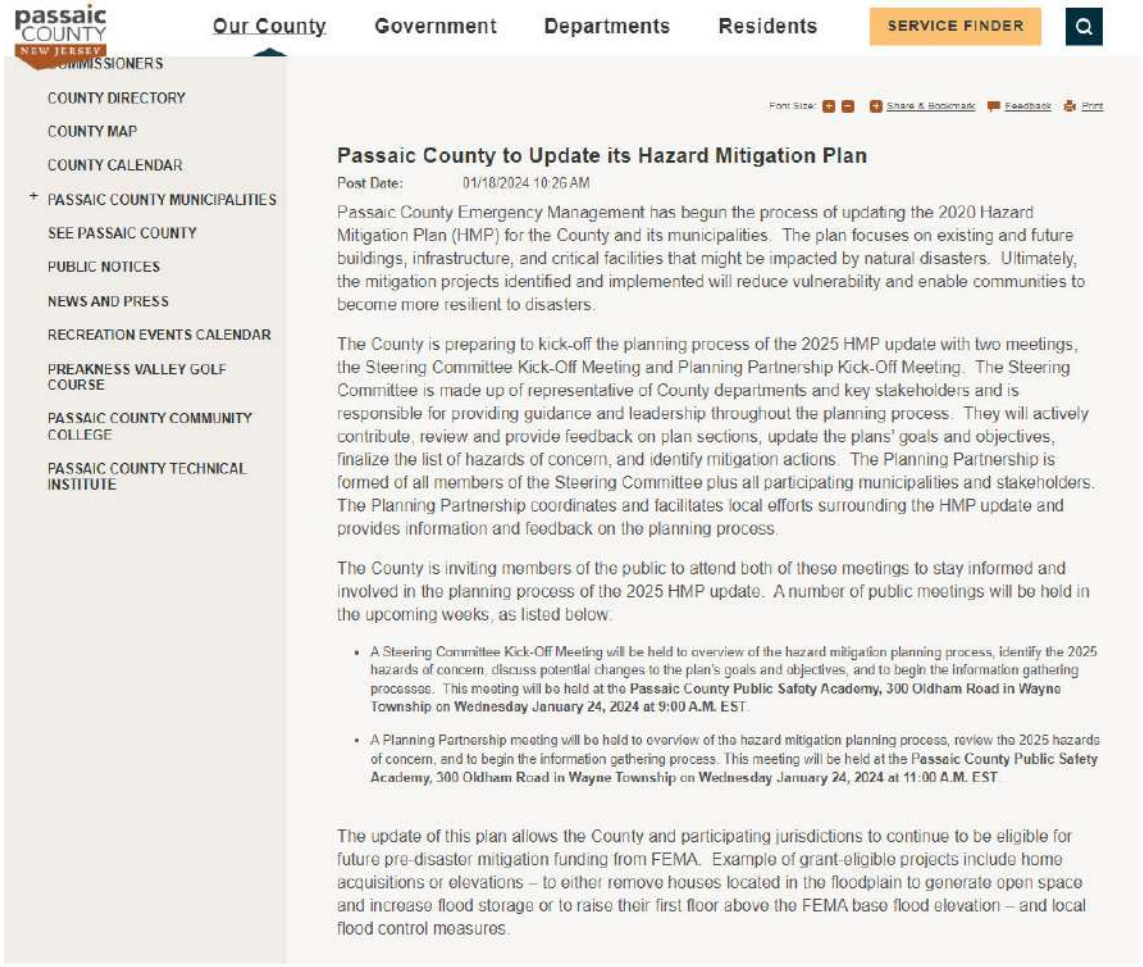
• A Steering Committee Kick-Off Meeting will be held to overview of the hazard mitigation planning process, identify the 2025 hazards of concern, discuss potential changes to the plan's goals and objectives, and to begin the information gathering processes. This meeting will be held at the Passaic County Public Safety Academy, 300 Oldham Road in Wayne Township on Wednesday January 24, 2024 at 9:00 A.M. EST.

• A Planning Partnership meeting will be held to overview of the hazard mitigation planning process, review the 2025 hazards of concern, and to begin the information gathering process. This meeting will be held at the Passaic County Public Safety Academy, 300 Oldham Road in Wayne Township on Wednesday January 24, 2024 at 11:00 A.M. EST.

The update of this plan allows the County and participating jurisdictions to continue to be eligible for future pre-disaster mitigation funding from FEMA. Example of grant-eligible projects include home acquisitions or elevations – to either remove houses located in the floodplain to generate open space and increase flood storage or to raise their first floor above the FEMA base flood elevation – and local flood control measures.

Information about the Hazard Mitigation Plan is posted on the Passaic County website.

PASSAICCOUNTYNJ.ORG
Passaic County and All Municipalities Hazard Mitigation Plan | Passaic County, NJ



passaic COUNTY NEW JERSEY

Our County | Government | Departments | Residents | SERVICE FINDER

- COMMISSIONERS
- COUNTY DIRECTORY
- COUNTY MAP
- COUNTY CALENDAR
- + PASSAIC COUNTY MUNICIPALITIES
- SEE PASSAIC COUNTY
- PUBLIC NOTICES
- NEWS AND PRESS
- RECREATION EVENTS CALENDAR
- PREAKNESS VALLEY GOLF COURSE
- PASSAIC COUNTY COMMUNITY COLLEGE
- PASSAIC COUNTY TECHNICAL INSTITUTE

Font Size: Share & Bookmark Feedback Print

Passaic County to Update its Hazard Mitigation Plan

Post Date: 01/18/2024 10:26 AM

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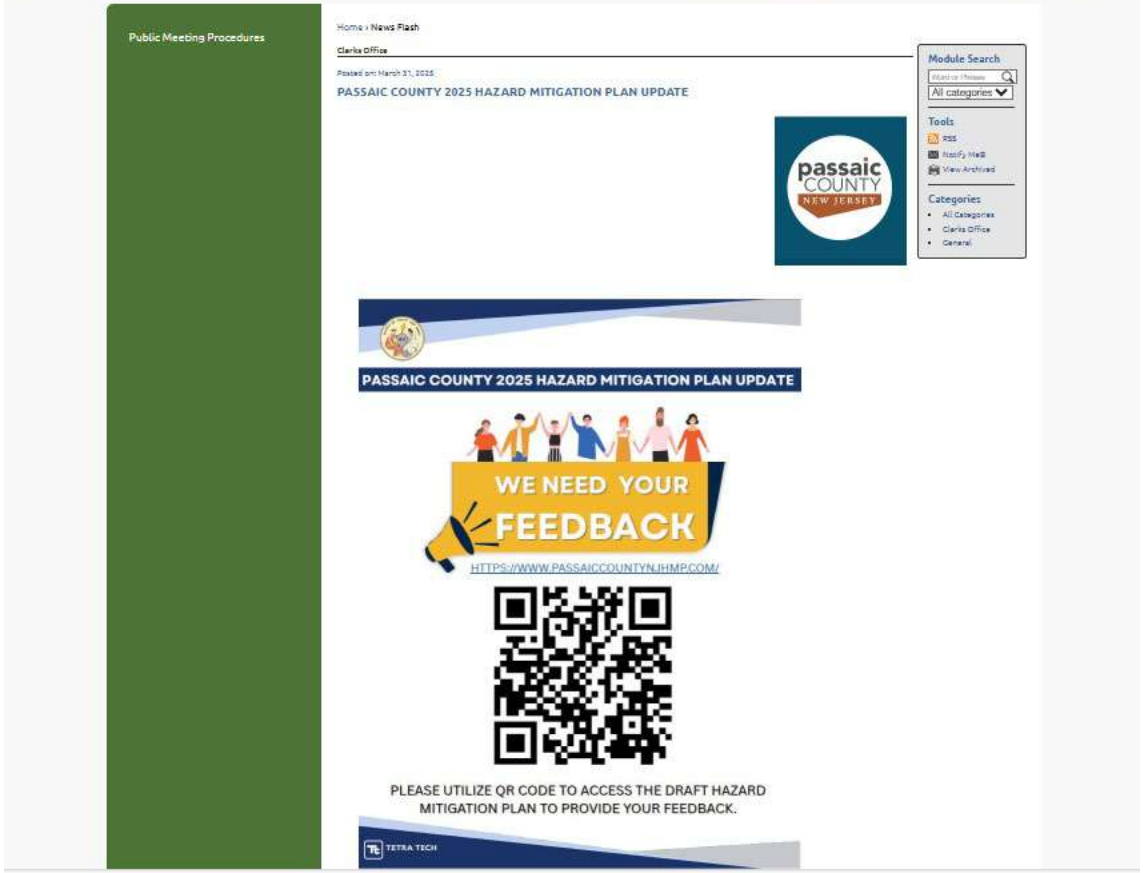
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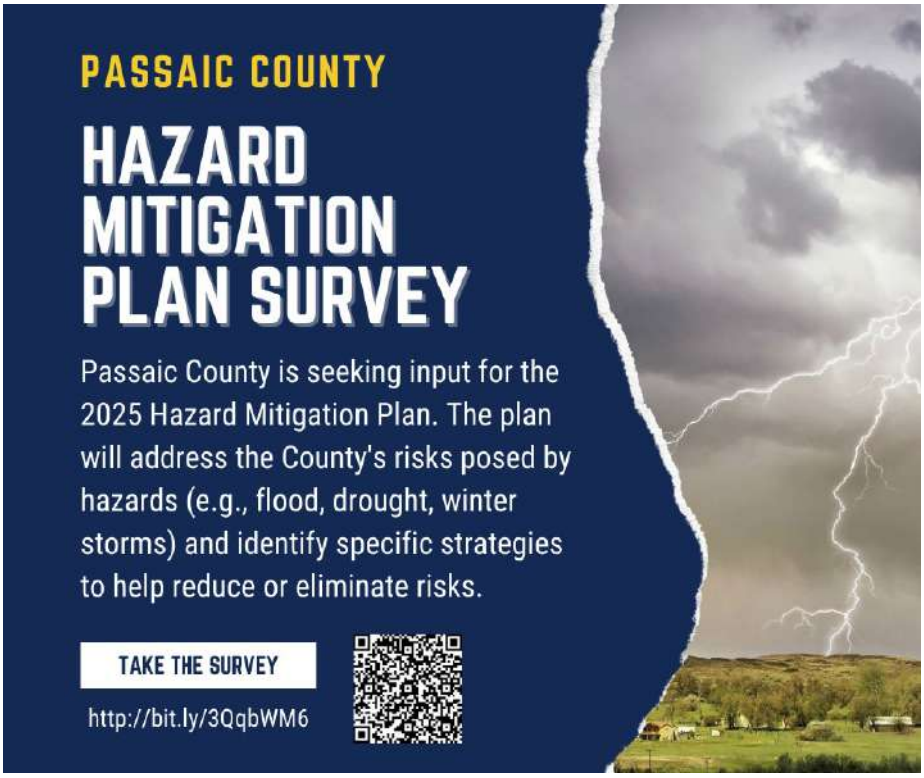
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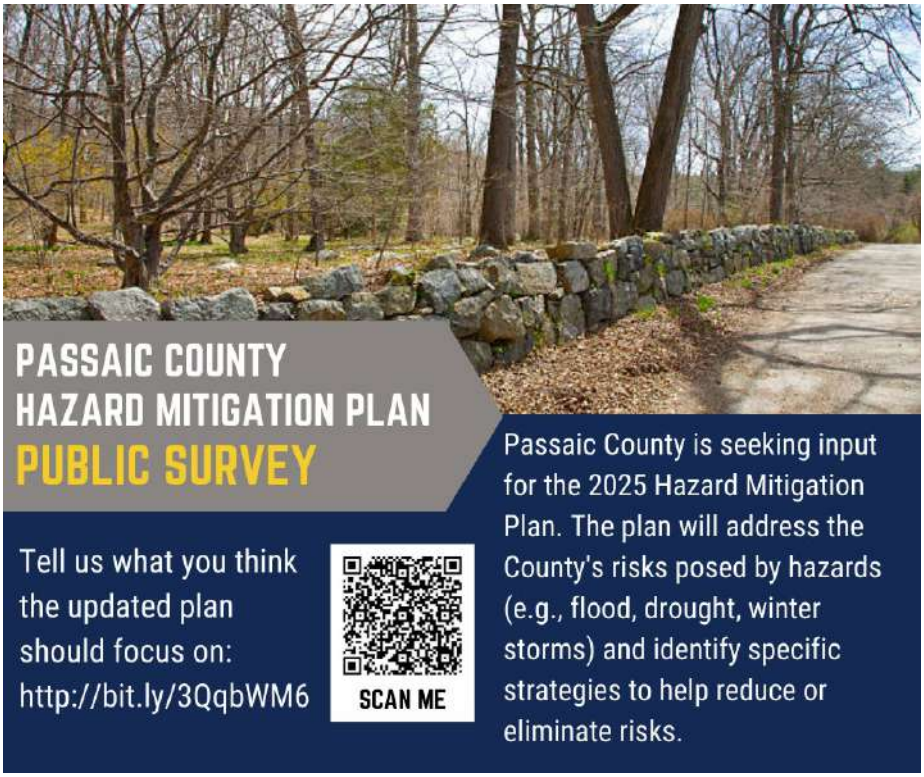

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This information may be in a PDF printable format for printing only.
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Passaic County Hazard Mitigation Plan Update
Release Date: April 02, 2025
Passaic Hazard Mitigation Plan Update

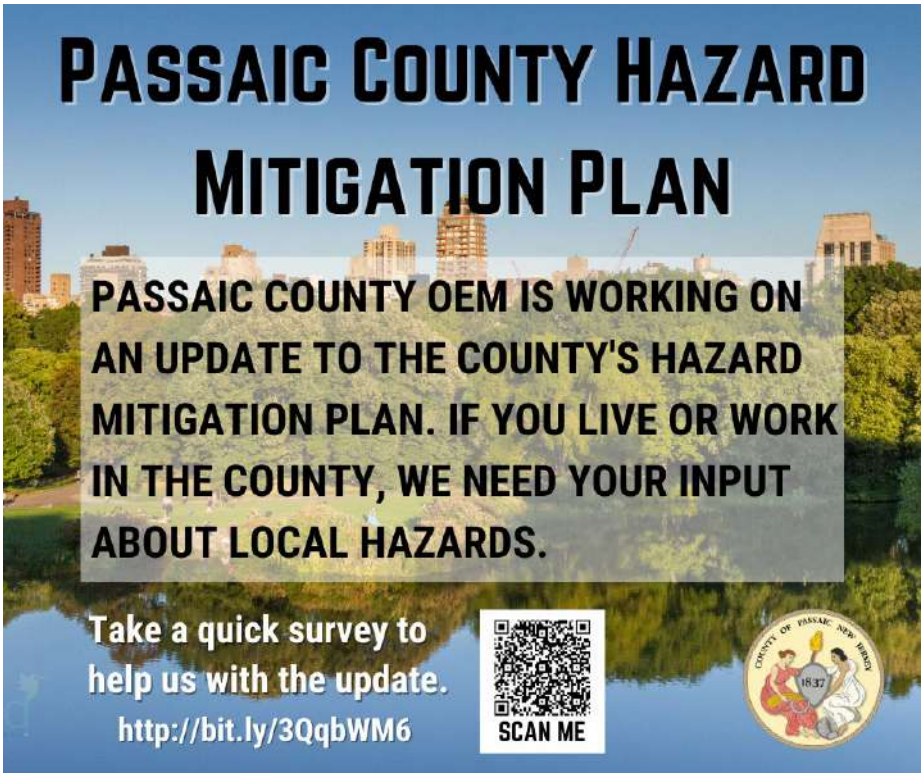

BOROUGH OF
WANAQUE
New Jersey
579 Ringwood Ave
Wanaque, NJ 07465 Passaic County
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Search
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In Emergency Services:
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First Aid Squad
Hazard Mitigation Plan
Passaic County Mitigation Plan
We understand this is a very challenging time. The County is updating its hazard mitigation plan – see attached brochure. Please help us plan for future disasters, including pandemics like COVID-19, by taking this survey to inform future preparedness and decision making. Thank you and be well.
Passaic County HMP Brochure
Passaic County Resident? Take our survey. Click this link
For more information about this process, please contact:
Passaic County Office of Emergency Management (973) 904-3621
pcoem@passaiccountynj.org
Official Website of Borough of Wanaque, New Jersey


PASSAIC COUNTY
HAZARD MITIGATION PLAN SURVEY
Passaic County is seeking input for the 2025 Hazard Mitigation Plan. The plan will address the County's risks posed by hazards (e.g., flood, drought, winter storms) and identify specific strategies to help reduce or eliminate risks.
TAKE THE SURVEY
http://bit.ly/3QqbWM6


WE NEED YOUR HELP
Passaic County is updating the Hazard Mitigation Plan and we want to hear from you.
Tell us what you think the updated plan should focus on by taking a quick survey:
http://bit.ly/3QqbWM6


PASSAIC COUNTY
HAZARD MITIGATION PLAN
PUBLIC SURVEY
Tell us what you think the updated plan should focus on:
http://bit.ly/3QqbWM6
SCAN ME
Passaic County is seeking input for the 2025 Hazard Mitigation Plan. The plan will address the County's risks posed by hazards (e.g., flood, drought, winter storms) and identify specific strategies to help reduce or eliminate risks.


WE NEED YOUR HELP TO UPDATE PASSAIC COUNTY'S HAZARD MITIGATION PLAN
Passaic County is a beautiful place to live, but it is also at risk for natural disasters including flooding, winter storms, and drought.
The County is currently updating the Hazard Mitigation Plan. The plan will assess the County's risk to hazards and disasters and develop a blueprint to reduce impacts and protect our county and residents.
TELL US WHAT YOU THINK THE UPDATED PLAN SHOULD FOCUS ON:
http://bit.ly/3QqbWM6
SCAN ME


PASSAIC COUNTY HAZARD MITIGATION PLAN
PASSAIC COUNTY OEM IS WORKING ON AN UPDATE TO THE COUNTY'S HAZARD MITIGATION PLAN. IF YOU LIVE OR WORK IN THE COUNTY, WE NEED YOUR INPUT ABOUT LOCAL HAZARDS.
Take a quick survey to help us with the update.
http://bit.ly/3QqbWM6
SCAN ME

BROCHURES



PASSAIC COUNTY HAZARD MITIGATION PLAN

2025 Update

WHAT IS A HAZARD MITIGATION?

Hazard mitigation is an action to help reduce long-term risks caused by hazards or disasters, such as flooding, earthquakes, or wildfires. The purpose of hazard mitigation is to protect people and structures, and minimize the costs of disaster response and recovery. Hazard mitigation can take many forms: capital projects, policies, education, and environmental protection.

Proactive mitigation leads to more cost-effective projects. By contrast, reactive mitigation, tends to lead to severe damage and often more costly fixes; it simply costs too much to address the effects of disasters only after they happen. A surprising amount of damage can be prevented if we can anticipate where and how disasters occur, and take steps to prevent those damages.

WHAT IS A HAZARD MITIGATION PLAN?

Hazard Mitigation Plans (HMP) are prepared and adopted by counties and municipalities with the primary purpose of identifying, assessing, and reducing the long-term risk to life and property from hazard events. HMPs are most effective when they are based on a comprehensive, long-term plans developed before a disaster occurs.

Effective mitigation planning can break the cycle of disaster damage, reconstruction, and repeated damage. There are four key elements of an HMP: 1) a risk assessment, 2) capability assessment, 3) mitigation strategy, and 4) plan maintenance procedures.

The purpose of mitigation planning is to identify local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards. These mitigation policies and actions are identified based on an assessment of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process.

PURPOSE

The Passaic County Office of Emergency Management is leading the update of the Seneca County HMP. This plan is an opportunity to detail a variety of potential hazards that could affect some or all of the residents and will also allow the county and participating municipalities to be eligible for future mitigation funding from the Federal Emergency Management Agency (FEMA).

The goal of the plan is to identify projects that can reduce damages from future hazards. The plan will include a risk assessment and a hazard mitigation strategy. The primary hazards of concern in the county include: Coastal Hazards, Dam Failure, Drought, Earthquake, Extreme Temperature, Flood, Geological Hazards, Severe Weather, Severe Winter Weather, and Wildfire.

The study will focus on existing buildings and potential future development, infrastructure, and lifelines that might be impacted. Lifelines include but are not limited to municipal buildings and infrastructure such as power-generation facilities, water utilities, roadways, railroads and communication systems.



What are the benefits of Hazard Mitigation?

Mitigation planning will help the county and the participating jurisdictions prepare for disasters, before they happen, to reduce impacts when a disaster occurs. Benefits include:

- Identifying actions for risk reduction that are agreed upon by stakeholders and the public,
- Focusing resources on the greatest risks and vulnerabilities,
- Building partnerships by involving citizens, organizations, and businesses,
- Increasing education and awareness of threats and hazards, as well as their risks,
- Communicating priorities to state and federal officials, and
- Aligning risk reduction with other community objectives.

What is required in a Hazard Mitigation Plan?

FEMA regulations require that the public must be engaged in all phases of the plan's development. The HMP should review and incorporate existing plans and programs that can support or enhance hazard mitigation. The plan must assess the risk to natural hazards that may impact the planning area and identify and prioritize mitigation actions that can be taken. The HMP must also include a strategy for maintaining the plan, which must be updated every 5 years.

FAQs

What is mitigation? Any sustained action taken to reduce/ eliminate long-term risk to life and property from a hazard event.

How can you reduce/eliminate risk? Identify mitigation actions/ projects/activities or processes that can include 1) Local plans and regulations; 2) Structure and infrastructure projects; 3) Natural systems protection; 4) Education and awareness programs.

What grant funding is available? FEMA Hazard Mitigation Assistance grant funding is available with a FEMA-approved Hazard Mitigation Plan (annual and post-disaster opportunities).

How can I support the plan? Take the public survey! This will help us obtain input and get a better understanding of public preparedness for hazard events.

Where can I see the 2024 plan? Sections of the draft plan will be available in 2024 for download, review and comment on the Seneca County HMP website at: www.senecacountynyhmp.com

Planning Process



For more information, please visit our website:

www.passaiccountynjhmp.com

If you have questions, contact:

Sheriff Richard H. Berdnik, OEM Coordinator
Passaic County
Office of Emergency Management
rberdnik@pcsheriff.org

Live or work in Seneca County? Take our Public Survey!

bit.ly/3QqbWM6

-or-

scan the QR code

Can't access the survey? Contact Jessica Stokes at Jessica.Stokes@tetratech.com or (973) 630-8017

WEBSITE

PASSAIC COUNTY HAZARD MITIGATION PLAN UPDATE

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About the Project

Purpose

Passaic County Office of Emergency Management is leading the update of the Passaic County Hazard Mitigation Plan (HMP) for the County and its jurisdictions. This plan is an opportunity to detail a variety of potential hazards that could affect some or all of our residents and will also allow the County and the participating jurisdictions to be eligible for future pre-disaster mitigation funding from the Federal Emergency Management Agency (FEMA). The goal of this plan is to identify projects that can reduce damages from future natural and non-natural hazards. The plan will include a risk assessment and a hazard mitigation strategy. The study will focus on existing buildings and potential future development, infrastructure, and critical facilities that might be impacted. Critical Facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard. Critical facilities include essential facilities, transportation systems, lifeline utility systems, high potential loss facilities, and hazardous material facilities.

Scope

During the planning process, the Planning Partnership will actively be involving private sector, non-profit, and other community partners in the planning process. The approach is consistent with the "Whole Community Approach," which seeks to involve the entire community in disaster and hazard planning.

Objectives

The objectives of the Passaic County HMP planning process are:

- Provide the public opportunities throughout the plan development and drafting process to provide input.
- Conduct a thorough risk assessment using the most recent disaster data and information.
- Formulate hazard mitigation goals, objectives, and actions as they relate to reducing loss of life and property from natural and human-caused hazards.
- Obtain state and federal approval of the HMP.

Hazard Mitigation Planning Process Summary

This hazard mitigation planning process involves eight phases:

PASSAIC COUNTY HAZARD MITIGATION PLAN UPDATE

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What Is Hazard Mitigation?

Hazard mitigation is an action to help reduce long-term risks caused by hazards or disasters, such as flooding, earthquakes, or wildfires. The purpose of hazard mitigation is to protect people and structures, and minimize the costs of disaster response and recovery. Hazard mitigation can take many forms: capital projects, policies, education, and environmental protection.

Proactive mitigation leads to more cost-effective projects. By contrast, reactive mitigation, tends to lead to severe damage and often more costly fixes; it simply costs too much to address the effects of disasters only after they happen. A surprising amount of damage can be prevented if we can anticipate where and how disasters occur, and take steps to prevent those damages.

What is a Hazard Mitigation Plan?

A hazard mitigation plan (HMP) is "the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards" (44 CFR 201.6). HMPs establish and maintain eligibility for grant funds. The planning process is as important as the plan itself because it creates a framework for governments to reduce the negative impacts from future disasters on lives, property, and the economy.

Hazard mitigation planning can significantly reduce the physical, financial, and emotional losses caused by disasters. The Disaster Mitigation Act of 2000 is federal legislation that establishes a pre-disaster hazard mitigation program and new requirements for the national post disaster Hazard Mitigation Grant Program (HMGP). It encourages and rewards state and local pre-disaster planning and promotes sustainability. Completion of an HMP will result in more effective risk reduction projects and in a faster and more efficient allocation of funding.

Hazard Mitigation Breaks the Cycle

When recurrent disasters, such as riverine flooding, take place, repeated damage and reconstruction can occur. This reconstruction becomes more expensive as the years go by. Hazard mitigation breaks this expensive cycle of repetitive damage and increasing reconstruction costs by taking a long-term view of rebuilding and recovering from disasters.



What Are the Benefits?

There are numerous benefits to participating in the HMP, including:


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SURVEYS

Passaic County Hazard Mitigation Plan Update - Public Survey

Passaic County has assembled a team to update our hazard mitigation plan which addresses hazards that impact our county and municipalities. Please help us plan for future disasters by completing this survey regarding hazards in Passaic County.

This survey is designed to gather information from around Passaic County to help us better coordinate activities and reduce the risk of injury or property damage. These questions are for information-gathering only and do not necessarily reflect any intent or future priorities of any governing body. This information will be shared with municipal, state, federal, and county entities for planning purposes only.

Please help us be more resilient to future disasters by completing this survey.

Passaic County Hazard Mitigation Plan Update - Public Survey

Natural Hazard Information

In this section, we are looking for your input on the types of natural hazards that impact Passaic County and its residents. Please answer the following questions to help us understand the concerns throughout the counties.

1. In the last five years, which of the following hazard events have you experienced in Passaic County? Check all that apply.

- [ ] Coastal Hazards (Hurricane, Tropical Storm, Nor'easter)
- [ ] Dam Failure
- [ ] Disease/Pandemic Outbreak
- [ ] Drought
- [ ] Earthquake
- [ ] Extreme Temperature (heat and cold)
- [ ] Extreme Wind
- [ ] Flooding - Street/Land
- [ ] Flooding - Stormwater
- [ ] Flooding - Basement
- [ ] Other (please specify)
- [ ] Flooding - 1st floor or above
- [ ] Hazardous Materials
- [ ] Ice Jam
- [ ] Landslide
- [ ] Lightning
- [ ] Severe Storms (thunderstorm, hail)
- [ ] Tornado
- [ ] Wildfire
- [ ] Winter Storm
- [ ] None

2. How concerned are you about the following hazards in Passaic County? Please check one for each hazard.

	Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned
Coastal Hazards (Hurricane, Tropical Storm, Nor'easter)	☐	☐	☐	☐	☐
Dam Failure	☐	☐	☐	☐	☐
Disease/Pandemic Outbreak	☐	☐	☐	☐	☐
Drought	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐
Extreme Temperatures (heat and cold)	☐	☐	☐	☐	☐
Extreme Wind	☐	☐	☐	☐	☐
Flooding - Street/Property	☐	☐	☐	☐	☐
Flooding - Stormwater	☐	☐	☐	☐	☐
Flooding - Basement	☐	☐	☐	☐	☐
Flooding - 1st Floor or above	☐	☐	☐	☐	☐
Hazardous Materials	☐	☐	☐	☐	☐
Ice Jam	☐	☐	☐	☐	☐
Land Slide	☐	☐	☐	☐	☐
Lightning	☐	☐	☐	☐	☐
Severe Storms (thunderstorms, hail)	☐	☐	☐	☐	☐
Tornado	☐	☐	☐	☐	☐
Wildfire	☐	☐	☐	☐	☐
Winter Storm	☐	☐	☐	☐	☐
Other Hazard	☐	☐	☐	☐	☐

Other (please specify)

3. How do you receive your information concerning a disaster? Check all that apply.

- [ ] County Website
- [ ] Municipal Websites
- [ ] Newspaper
- [ ] Municipal E-Mail
- [ ] Police, Fire, EMS, 9-1-1
- [ ] Mass Notification System (e.g., NY Alert)
- [ ] Telephone Book
- [ ] Informational Brochures
- [ ] Public Meetings, Workshops, Public Awareness Events
- [ ] Schools
- [ ] TV News
- [ ] Other (please specify)
- [ ] TV Advertising
- [ ] Radio News
- [ ] Radio Advertisements
- [ ] Outdoor Advertisements
- [ ] Internet
- [ ] Social Media
- [ ] Chamber of Commerce
- [ ] Academic Institutions
- [ ] Books
- [ ] Public Library

4. In the past, has your home been damaged by a hazard event (i.e., flood waters entering the first floor of your home or pipes freezing during periods of cold temperatures).

- ◯ Yes
- ◯ No

Please explain the type of damage sustained and when it occurred.

5. If you answered 'yes' above, did you report the damages to your local police or fire departments or to an emergency management agency?

- ◯ Yes
- ◯ No

6. To the best of your knowledge, is your property located in a designated floodplain? If you do not know, click here to find out.

- ◯ Yes
- ◯ No

7. If your property is in the floodplain, do you have flood insurance?

- ◯ Yes
- ◯ No
- ◯ N/A

8. If your property is located outside of the floodplain, do you have flood insurance?

- ◯ Yes
- ◯ No
- ◯ N/A

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which critical facilities and community lifelines could be vulnerable to natural hazards in Passaic County. These types of facilities are essential to the community and provide resources. The next set of questions will focus on critical facilities and community lifelines in your community and your thoughts on mitigating risk to those facilities.

9. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. Please check the box that best represents your opinion on the following strategies to reduce the risk and loss associated with natural hazards in Passaic County.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Sure
Regulatory approach to reducing risk	○	○	○	○	○	○
Non-regulatory approach to reducing risk	○	○	○	○	○	○
Combination of regulatory and non-regulatory approaches to reducing risk	○	○	○	○	○	○
Policies that prohibit development in areas subject to natural hazards	○	○	○	○	○	○
Use of local tax dollars to reduce risks and losses from natural hazards	○	○	○	○	○	○
Protect historical and cultural assets	○	○	○	○	○	○
Making your home more disaster-resilient	○	○	○	○	○	○
Implement steps to safeguard the local economy following a disaster	○	○	○	○	○	○
Improve disaster preparedness of local schools	○	○	○	○	○	○
Develop local inventory of at-risk buildings and infrastructure	○	○	○	○	○	○
Enforce the disclosure of natural hazard risks during real estate transactions	○	○	○	○	○	○

Other (please specify)

10. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help us determine the priorities of our residents regarding planning for natural hazards in Passaic County. Please tell us how important each one is to you.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	○	○	○	○	○
Protecting critical facilities and community lifelines	○	○	○	○	○
Preventing development in hazard areas (e.g., restrict building in the floodplain)	○	○	○	○	○
Enhance the functions of natural features (e.g., streams, wetlands)	○	○	○	○	○
Protecting historical and cultural landmarks	○	○	○	○	○
Protecting and reducing damages to utilities	○	○	○	○	○
Strengthening emergency services (e.g., police, fire, EMS)	○	○	○	○	○
Disclosing natural hazard risks during real estate transactions	○	○	○	○	○
Promoting cooperation among public agencies, residents, non-profit organizations, and local businesses	○	○	○	○	○

Other (please specify)

11. Please identify any specific vulnerabilities that you are aware of in your city/town/village (e.g., flood-prone areas or specific properties, critical facilities that lack backup power, etc.). Please list street names and other specific identifiers if possible.

12. Please identify any specific vulnerabilities that you are aware of in Passaic County outside of your city/town/village (e.g., flood-prone areas or specific properties, critical facilities that lack backup power, etc.). Please list the city/town/village, street names, and other specific identifiers if possible.

13. Do you have any other comments, questions, or concerns regarding hazard mitigation in Passaic County?

You can mitigate and prepare for natural hazards in order to reduce or prevent damages to your property, injuries, and loss of life. The precautions you take now can make a big difference when natural disasters or emergencies occur. Access to basic services, like electricity, gas, and water, may be cut off temporarily, or you may have to leave your home at a moment's notice. The following question will help us understand your household's preparedness for disaster events.

14. In the following list, please check those activities that you have done in your home, plan to do in the near future, have not done, or are unable to do. Please check one answer for each activity that you or someone in your household have done.

	Have Done	Not Done Yet, But Started	Not Started Yet, But Plan To Do	Do Not Plan To Do
Attend meetings or received information on natural disasters or emergency preparedness	○	○	○	○
Talked with members in your home about what to do in case of a natural disaster or emergency	○	○	○	○
Developed an emergency plan for your home and family in order to decide what everyone will do in the event of a disaster or emergency	○	○	○	○
Prepared a disaster supply kit with extra food, water, batteries, etc.	○	○	○	○
Become trained in first aid and/or CPR	○	○	○	○
Installed smoke detectors throughout home	○	○	○	○
Discussed or created a utility shutoff procedure in the event of a natural disaster	○	○	○	○

Other (please specify)

15. Do you have any relevant questions or comments for Passaic County?

General Household Information

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan. Please note that individual answers will not be published in the plan.

16. Please indicate the municipality in which you live:

- [ ] Bloomingdale (B)
- [ ] Clifton (C)
- [ ] Haledon (B)
- [ ] Hawthorne (B)
- [ ] Little Falls (Twp)
- [ ] North Haledon (B)
- [ ] Passaic (C)
- [ ] Paterson (C)
- [ ] Pompton Lakes (B)
- [ ] Prospect Park (B)
- [ ] Ringwood (B)
- [ ] Totowa (B)
- [ ] Wanaque (B)
- [ ] Wayne (Twp)
- [ ] West Milford (Twp)
- [ ] Woodland Park (B)
- [ ] Other (please specify)

17. How long have you lived here?

- ◯ Less than 1 year
- ◯ 1 to 5 years
- ◯ 6 to 9 years
- ◯ 10 to 19 years
- ◯ 20 years or more

18. Do you own or rent your place of residence?

- ◯ Own
- ◯ Rent

19. What type of residence do you live in?

- ◯ Single-family detached
- ◯ Multi-family detached
- ◯ Town Home
- ◯ Other (please specify)
- ◯ Condominium
- ◯ Apartment Complex
- ◯ Commercial

20. What street is your property on? (optional, will be kept confidential - only used to identify hazard areas such as flood prone areas).

21. Please indicate your age range:

- ◯ Under 18
- ◯ 18 to 30
- ◯ 31 to 40
- ◯ 41 to 50
- ◯ 51 to 60
- ◯ 61+

Passaic County Hazard Mitigation Plan - Stakeholder Survey

Passaic County and its municipalities are in the process of updating the County's Hazard Mitigation Plan (HMP) in order to be eligible for federal grant funding for public and private mitigation projects. The HMP provides a "blueprint" by which participating jurisdictions can make coordinated, cost-effective efforts toward reducing losses from natural and human-caused disasters.

The following survey is designed to help identify general needs for hazard mitigation and resiliency within Passaic County from your perspective, as well as to identify specific projects that may be included in the mitigation plan.

Please take a few minutes to answer the following questions and provide feedback on potential mitigation that affects your assets, infrastructure, and/or services within Passaic County. Provide as much detail as possible to support your choice in the comments box. Where possible, identify specific areas that need to be improved and your suggestions for possible improvements, especially if there are other important issues that you feel are not covered by this survey.

The Passaic County HMP Planning Partnership thanks you for taking the time to participate in this information-gathering process.

Passaic County Hazard Mitigation Plan - Stakeholder Survey

General Information

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan. Please note that individual answers will not be published in the plan.

1. Contact Information

Name

Department/Agency

Primary Responsibility

Phone Number

Email Address

2. Which of the following sectors and areas of expertise do you represent? Mark all that apply.

- [ ] Climate Change
- [ ] Emergency Management
- [ ] Economic Development
- [ ] Health and Social Services
- [ ] Housing, Food, Water, Shelter
- [ ] Infrastructure
- [ ] Land Use and Development
- [ ] Natural and Cultural Resources
- [ ] Social and Cultural Equity
- [ ] Socially Vulnerable and Underserved Populations
- [ ] Other (please specify)

3. What category does your facility operation/service fall under?

Other (please specify)

4. Based on the above category, please provide additional description and information as to what your organization does or offers (please explain)

5. Please identify the location of your facility(ies) and/or primary service area. You may choose more than one if your service area covers multiple communities, or "*Passaic County (entire area)*" if your service area is county-wide:

- [ ] Passaic County (entire area)
- [ ] Bloomingdale (B)
- [ ] Clifton (C)
- [ ] Haledon (B)
- [ ] Hawthorne (B)
- [ ] Little Falls (Twp)
- [ ] North Haledon (B)
- [ ] Passaic (C)
- [ ] Paterson (C)
- [ ] Pompton Lakes (B)
- [ ] Prospect Park (B)
- [ ] Ringwood (B)
- [ ] Totowa (B)
- [ ] Wanaque (B)
- [ ] Wayne (Twp)
- [ ] West Milford (Twp)
- [ ] Woodland Park (B)
- [ ] Other (please specify)

6. Does your organization maintain or manage any of the following within your designated service area? If not, answer "No" at the bottom, otherwise check all that apply.

- [ ] Buildings
- [ ] Roads
- [ ] Bridges
- [ ] Other (please specify)
- [ ] Water/Sewer
- [ ] Stormwater
- [ ] No

7. Does your organization work with or help support socially vulnerable populations that may be at higher risk for hazard impacts? Socially vulnerable populations may be considered "socially vulnerable" because of a variety of factors like socioeconomic status, household composition, minority status, limited proficiency to read or speak English, housing type, and transportation.

- ( ) Yes
- ( ) No

If you answered yes, please describe how your organization works with or supports socially vulnerable populations.

Passaic County Hazard Mitigation Plan - Stakeholder Survey

Risk Overview

A risk assessment is conducted as part of the HMP update. This is done to determine the potential impacts of hazards to the population, economy, built environment, and natural environment. To help us understand the hazards of greatest concern in Passaic County, please answer the questions below.

8. For which hazard(s) do you feel that you or your organization have a special interest and/or expertise? Check all that apply.

- [ ] Dam Failure
- [ ] Disease/Pandemic Outbreak
- [ ] Drought
- [ ] Earthquake
- [ ] Extreme Temperature (heat/cold)
- [ ] Extreme Wind
- [ ] Flood (inland, flash, urban/stormwater)
- [ ] Hazardous Materials
- [ ] Hurricane and Tropical Storm
- [ ] Ice Jam
- [ ] Landslide
- [ ] Lightning
- [ ] Nor'easter
- [ ] Severe Storms
- [ ] Tornado
- [ ] Wildfire
- [ ] Winter Storm
- [ ] Other (please specify)

9. Looking back at previous hazard events, have buildings/facilities/structures you have worked in and/or are responsible for been impacted by a hazard (ex. damage/closures/etc.)?

- ◯ Yes
- ◯ No
- ◯ Don't Know

10. If you answered “Yes” to the above question, please describe the event that caused or is causing (if recurring) damage and loss of service/property. If quantifiable data is available, please provide that as well (number of damaged structures, monetary loss, etc.) (please explain)

11. Looking at where your facilities or services are located in Passaic County, what areas do you believe to be the most vulnerable to hazards? What are these hazards? (please explain).

12. What are your agency's primary concerns regarding hazards?

- [ ] Vulnerability of specific facilities
- [ ] Response capabilities
- [ ] Likelihood of specific hazard events
- [ ] Other (please specify)

13. What challenges or barriers to reducing vulnerability in Passaic County do you see?

Passaic County Hazard Mitigation Plan - Stakeholder Survey

Facility Information

Critical facilities/infrastructure and community lifelines are part of the risk assessment of the HMP update. Facilities and infrastructure that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities often include but are not limited to: shelters, police and fire stations, hospitals, schools, etc.

14. Does your agency own or lease facilities?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Other (please specify)

15. Of those facilities that your agency owns or leases, are any viewed as critical facilities or community lifelines?

- ◯ No
- ◯ Yes (please specify which facilities)

16. Are your facilities susceptible to impacts from hazards, such as your fire department being in a flood prone area?

- ◯ Yes
- ◯ No
- ◯ Don't Know

If yes, please specify the facilities and damages sustained.

17. What support does your organization need from Passaic County to help reduce vulnerabilities to your facilities?

Passaic County Hazard Mitigation Plan - Stakeholder Survey

Capabilities and Mitigation Strategies

Counties, communities, agencies, and stakeholders all have different sets of capabilities, including authorities, policies, programs, staff, funding, and other resources available to accomplish mitigation. To help us understand your agency's capabilities, please answer the following questions.

18. Is your organization covered by any of the following plans? Check all that apply

- [ ] Continuity of Operations Plan
- [ ] Business Continuity Plan
- [ ] Continuity of Government Plan
- [ ] None
- [ ] Emergency Operations Plan
- [ ] Don't Know
- [ ] Other (please specify)

19. What capabilities does your agency have to help address hazards?

20. What plans or studies has your agency developed that relate to hazards, the climate, new or existing facilities, vulnerable populations, or other areas related to hazard mitigation?

21. Is your agency currently involved in conducting any studies or developing any programs which would further support Passaic County's hazard mitigation program? Studies can include hazard-specific information, data gathering which supports risk assessments, including economic data, or statistical data of other types.

- ◯ Yes
- ◯ No
- ◯ Don't Know

If yes, please briefly describe the type of study underway, and list the anticipated year of completion.

Project Identification

22. Please list any projects or programs that you have recently implemented that you believe will reduce your facility's/organization's vulnerability, damage, and losses (including loss of operation/service) due to hazard events.

23. Does your agency currently have any mitigation projects or activities underway? If so, please describe.

24. Please provide a list of any new projects or programs that your facility or organization would like to complete in order to reduce your vulnerability to damages and losses, including loss of operation/service, to hazard events.

Passaic County Hazard Mitigation Plan - Stakeholder Survey

Social Vulnerability and Underserved Communities

Social vulnerability is understood as the potential for loss within an individual or social group, recognizing that some characteristics influence an individual's or group's ability to prepare, respond, cope or recover from an event. These characteristics can overlap within populations to create heightened vulnerability, which may be compounded by infrastructure deficiencies within communities and historic or existing discriminatory government policies.

Underserved Communities refer to populations sharing a particular characteristic, as well as geographic communities that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. The barriers to opportunity and participation these communities face have been occurring throughout history and continue today.

25. Are you aware of the number and location of vulnerable populations in your community/operating area?

- ◯ Yes
- ◯ No
- ◯ Yes, but need better information
- ◯ Other (please specify)

26. Does your agency provide assistance to any socially vulnerable or underserved populations in Passaic County?

- ◯ Yes
- ◯ No
- ◯ Not Sure

Other (please specify)

27. If yes, what types of services do you provide?

- [ ] Establishing Personal Services
- [ ] Funding/Financial
- [ ] Human Rights
- [ ] Regulatory Oversight
- [ ] Other (please specify)

28. Please provide a list of the populations or communities served by your agency.

29. Do you provide these services during times of disaster?

- ( ) Yes
- ( ) No
- ( ) Don't Know
- ( ) Other (please specify)

30. What barriers and community characteristics exist within Passaic County that may create additional vulnerabilities to hazards? This may include but is not limited to access to transportation, broadband access, economic disadvantages, physical health (chronic diseases), limited physical mobility, age (older adults and children), and rural communities.

Final Thoughts

31. Do you have any questions or comments for Passaic County?

Passaic County Hazard Mitigation Plan - Neighboring Community Survey

Passaic County and its municipalities are in the process of updating the Hazard Mitigation Plan (HMP). The HMP provides a "blueprint" by which participating jurisdictions can coordinate efforts to reduce losses from natural hazards. It is required by the Federal Emergency Management Agency (FEMA) in order to be eligible for federal grant funding for public and private mitigation projects.

Due to your proximity to Passaic County, the effects of many of these disasters would be similar in your community, and your involvement in this process could reap mutual benefits. By participating in the review of this plan, you will be engaging in the regional coordination of disaster mitigation planning, which is one of the intents of the Mitigation Planning Regulations (44 CFR 201).

The following survey is designed to help Passaic County gain a better understanding of how their neighboring communities operate day-to-day and during an emergency and allows our neighbors to be included in the planning process.

The Passaic County HMP Planning Partnership thanks you for taking the time to participate in this information-gathering process.

Passaic County Hazard Mitigation Plan - Neighboring Community Survey

General Information

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan. Please note that individual answers will not be published in the plan.

* 1. Contact Information

Name	
Department/Agency	
City/Town	
Email Address	
Phone Number	

* 2. Please indicate the community in which you represent

- ◯ City of East Rutherford
- ◯ City of Hackensack
- ◯ Township of Parsippany
- ◯ Township of Pequannock
- ◯ Town of Ramapo
- ◯ Township of Jefferson
- ◯ Township of Rockaway
- ◯ Borough of Kinnelon
- ◯ Township of Butler
- ◯ Borough of Riverdale
- ◯ Township of Lincoln Park
- ◯ Borough of Franklin Lakes
- ◯ Borough of Ramsey
- ◯ Borough of Midland Park
- ◯ Town of Allendale
- ◯ Borough of Stanhope
- ◯ Borough of Hopatcong
- ◯ Town of Sparta
- ◯ Borough of Ogdensburg
- ◯ Township of Hardyston
- ◯ Township of Vernon
- ◯ Township of Fairfield
- ◯ Borough of North Caldwell
- ◯ Township of Cedar Grove
- ◯ Township of Montclair
- ◯ Township of Bloomfield
- ◯ Township of Nutley
- ◯ City of Port Jervis
- ◯ Town of Greenville
- ◯ Town of Warwick
- ◯ Town of Tuxedo
- ◯ Town of Minisink
- ◯ Town of Clarkson
- ◯ Town of Orangetown
- ◯ Other (please specify)

Passaic County Hazard Mitigation Plan - Neighboring Community Survey

Emergency Operations and Continuity of Operations Planning

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan.

3. Do you have any shared service agreements or mutual aid agreements in place with Passaic County or any Passaic municipalities for the following?

- [ ] Equipment and staff for debris cleanup and removal
- [ ] Emergency staff for evacuations/disaster response
- [ ] Damage assessments
- [ ] Sheltering
- [ ] Other
- [ ] If you checked any of the above, please explain.

4. Do you include Passaic County or any Passaic municipalities in your comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Other (please specify)

5. Do you participate in Passaic County's comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ Other (please specify)

6. Do you include Passaic County or any Passaic municipalities in your Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of your community's essential functions for a period of time?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ Other (please specify)

7. Do you participate in Passaic County or any Passaic municipality's Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of Seneca County's essential functions for a period of time?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ Other (please specify)

8. Thinking about emergency operations and disaster response, please explain how these actions are communicated between your staff and Passaic County.

Passaic County Hazard Mitigation Plan - Neighboring Community Survey

Information Sharing

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan.

9. Do your emergency officials have access to contact information for Passaic County's emergency operation center?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ If yes, please explain.

10. Do you share risk and vulnerability assessments (e.g., flood mapping, GIS, Hazus, etc.) with Passaic County?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A

If yes, please explain.

11. Is information regarding mitigation shared during the planning and implementation phases of the projects?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A

If yes, please explain.

12. Please describe any situations or hazards that are of concern to both your community and Passaic County. For example, would flooding along a particular waterway impact both jurisdictions, or are there any facilities or infrastructure that would affect both jurisdictions if it/they failed?

13. Please explain how information is shared between your jurisdiction and Passaic County and any Passaic municipalities regarding mitigation projects.

Passaic County Hazard Mitigation Plan - Neighboring Community Survey

Projects, Grants, Education, and Outreach

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan.

14. Are you aware of any projects for the following that requires cross-collaboration between jurisdictional boundaries?

- [ ] Stormwater projects
- [ ] Watershed projects or planning
- [ ] Floodplain projects or planning
- [ ] Connected roadway improvements
- [ ] Natural infrastructure restoration
- [ ] Outreach (education and outreach campaigns, programs for public information, etc.)
- [ ] Other

If you selected anything above, please explain.

15. Has your jurisdiction and Passaic County or any Passaic municipalities collaborated on grant applications?

- ( ) Yes
- ( ) No
- ( ) Don't Know
- ( ) N/A

If yes, please explain.

16. Are you aware of any organizations that carry out education and outreach regarding hazards in both your community and Passaic County?

- ( ) Yes
- ( ) No
- ( ) Don't Know
- ( ) N/A
- ( ) If yes, please explain.

17. Are you aware of any organizations that support socially vulnerable or underserved populations in both your community and Passaic County?

- ◯ No
- ◯ Yes. Please describe the organization(s)

18. What are opportunities or ideas to optimize cooperation with Passaic County on emergency management operations and hazard mitigation projects?

Passaic County Hazard Mitigation Plan - Neighboring Community Survey

Evacuation and Sheltering

The answers provided in this section will be treated as CONFIDENTIAL and will be used solely for the purpose of preparing this plan.

19. Do you collaborate with Passaic County or any Passaic municipalities on establishing evacuation routes and alternate evacuation routes?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ If yes, please explain.

20. Do you and Passaic County or any Passaic municipalities consult with one another before making evacuation decisions that would impact one another (recommending evacuation routes into neighboring jurisdictions)?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ If yes, please explain

21. Are evacuation routes maintained to the same level of protection across jurisdictional lines?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ Other (please specify)

22. Do you collaborate with Passaic County or any Passaic municipalities on establishing shelters?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ If yes, please explain.

23. Do you and Passaic County or any Passaic municipalities consult with one another before making sheltering decisions that would impact one another (recommending shelters in neighboring communities)?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ If yes, please explain.

24. Do you and Passaic County share any spaces suitable for temporary housing? This includes locations suitable to place temporary housing units to house residents displaced by a disaster.

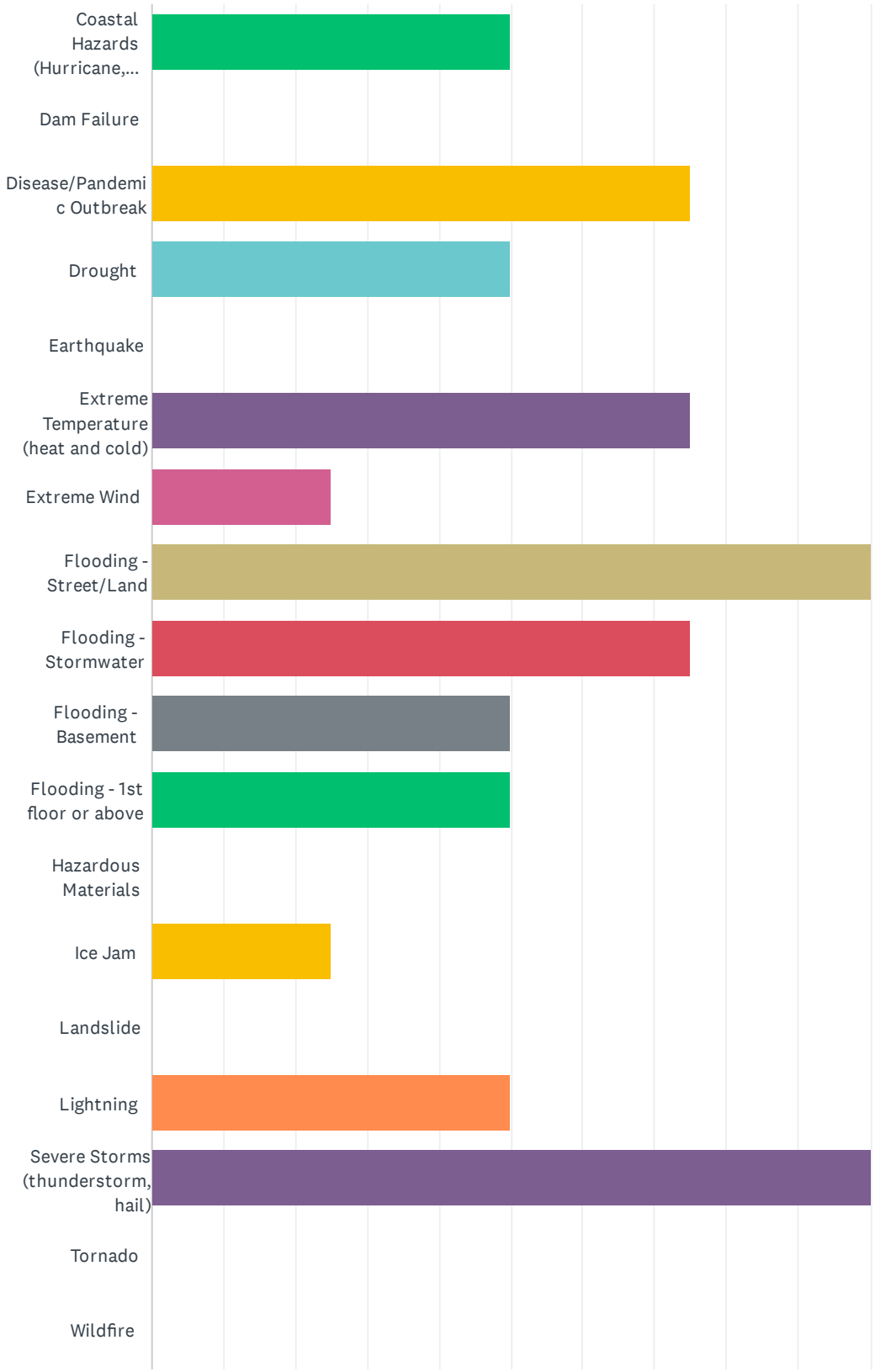
- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ N/A
- ◯ If yes, please explain.

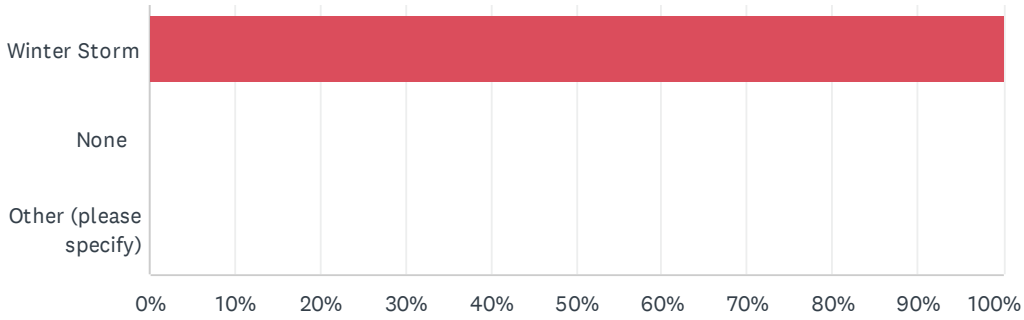
Final Thoughts

25. Do you have any relevant questions or comments for Passaic County?

Q1 In the last five years, which of the following hazard events have you experienced in Passaic County? Check all that apply.

Answered: 4 Skipped: 0



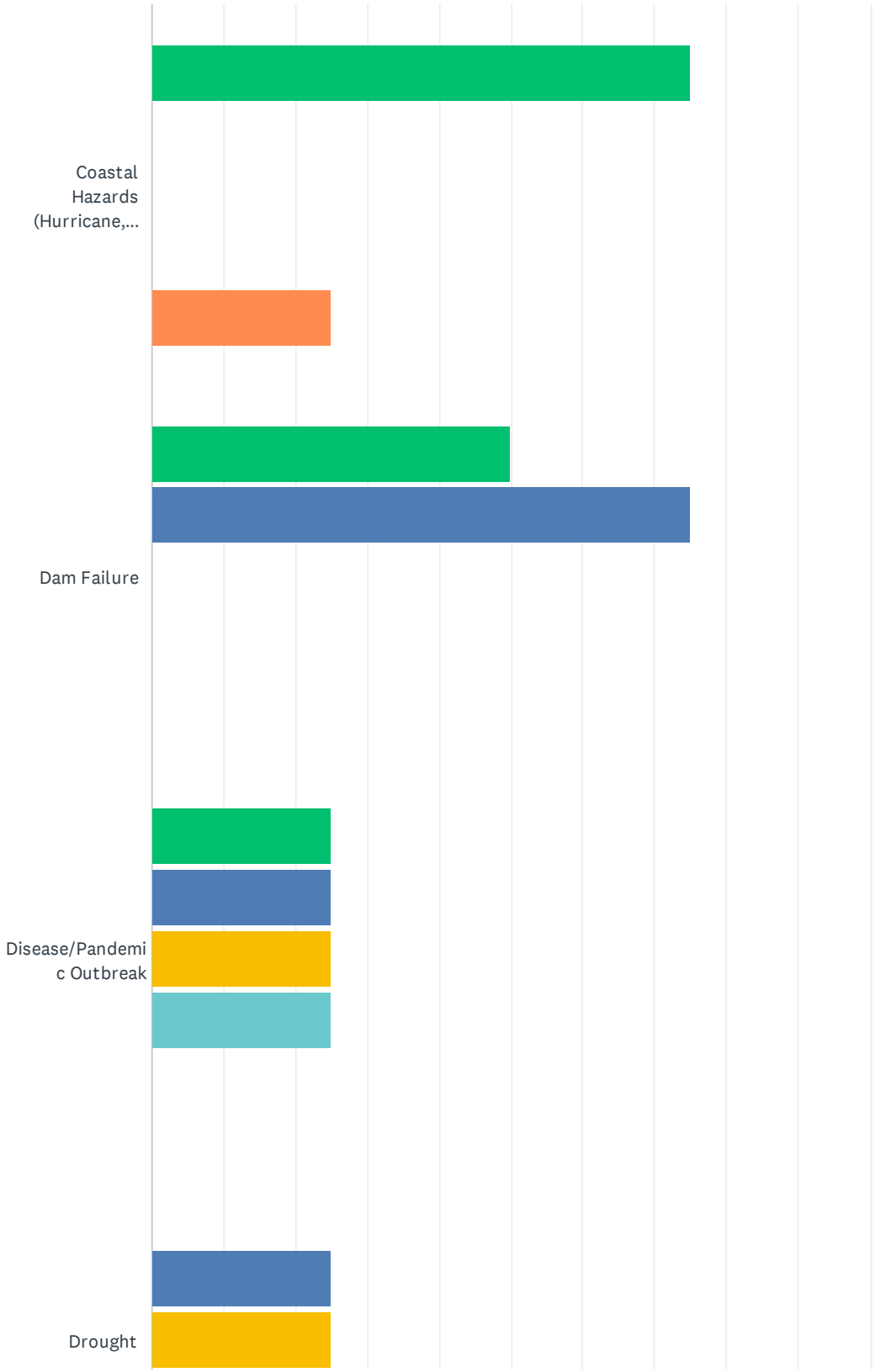


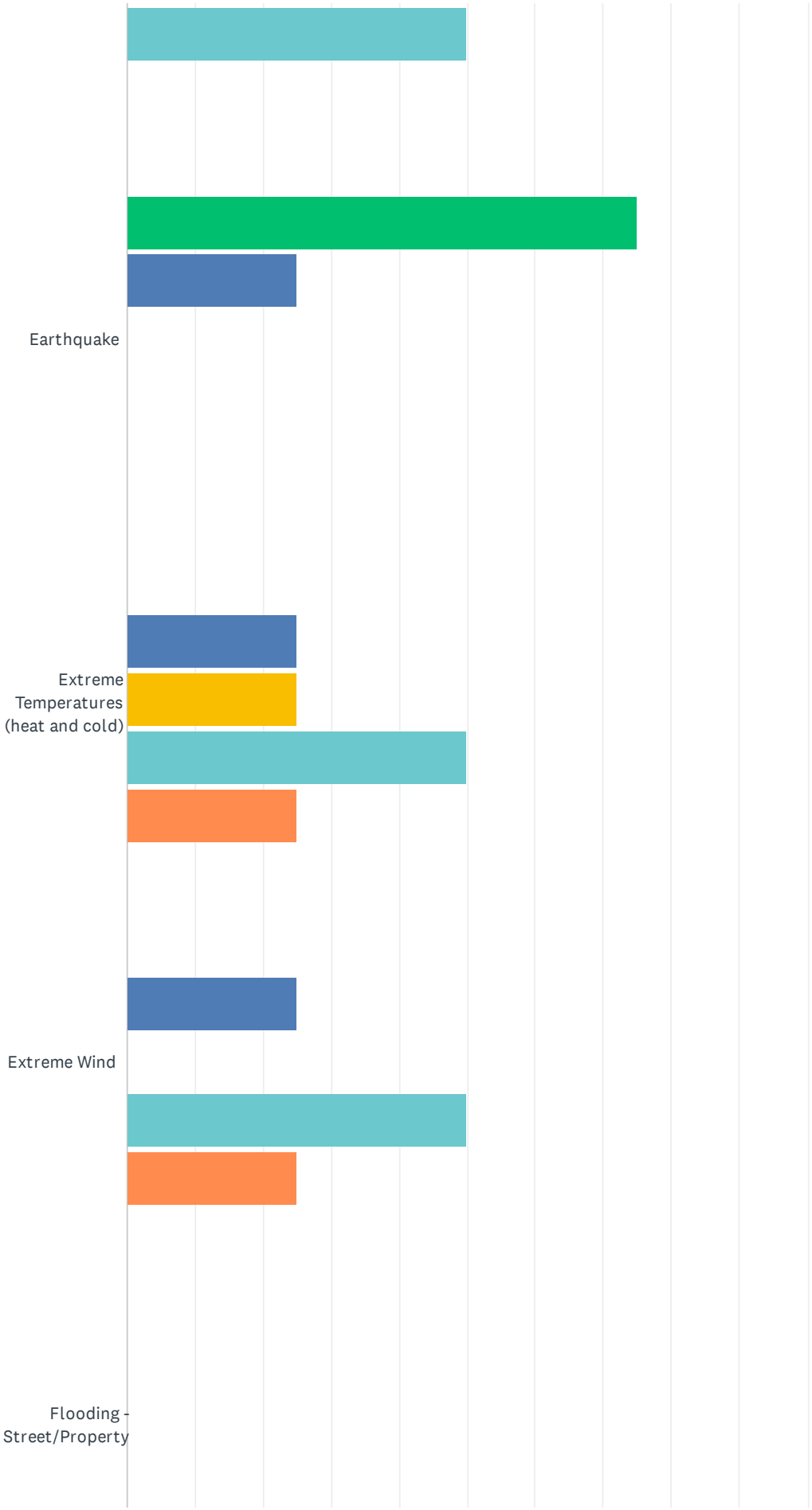
ANSWER CHOICES	RESPONSES	
Coastal Hazards (Hurricane, Tropical Storm, Nor'easter)	50.00%	2
Dam Failure	0.00%	0
Disease/Pandemic Outbreak	75.00%	3
Drought	50.00%	2
Earthquake	0.00%	0
Extreme Temperature (heat and cold)	75.00%	3
Extreme Wind	25.00%	1
Flooding - Street/Land	100.00%	4
Flooding - Stormwater	75.00%	3
Flooding - Basement	50.00%	2
Flooding - 1st floor or above	50.00%	2
Hazardous Materials	0.00%	0
Ice Jam	25.00%	1
Landslide	0.00%	0
Lightning	50.00%	2
Severe Storms (thunderstorm, hail)	100.00%	4
Tornado	0.00%	0
Wildfire	0.00%	0
Winter Storm	100.00%	4
None	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 4		

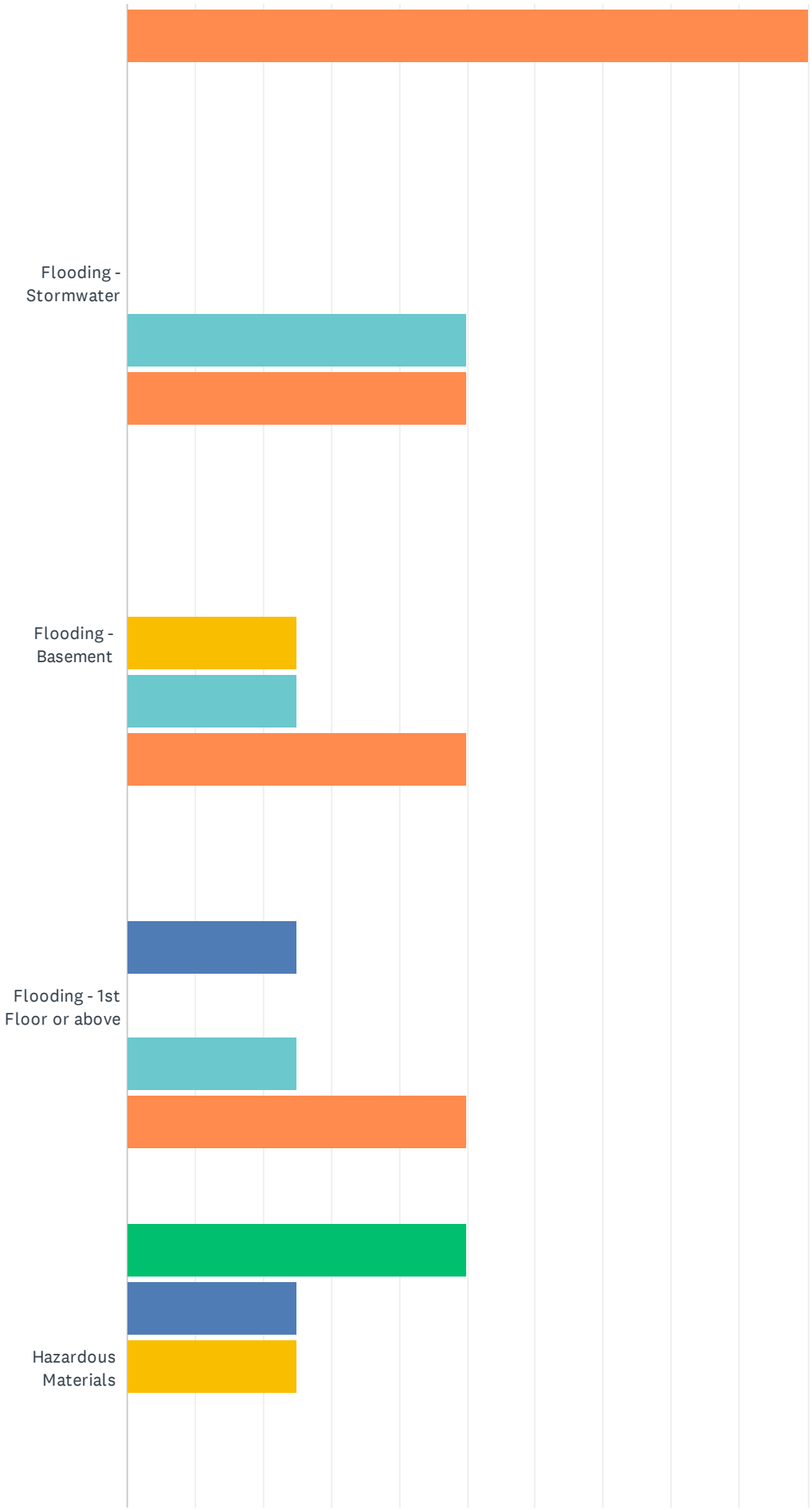
#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

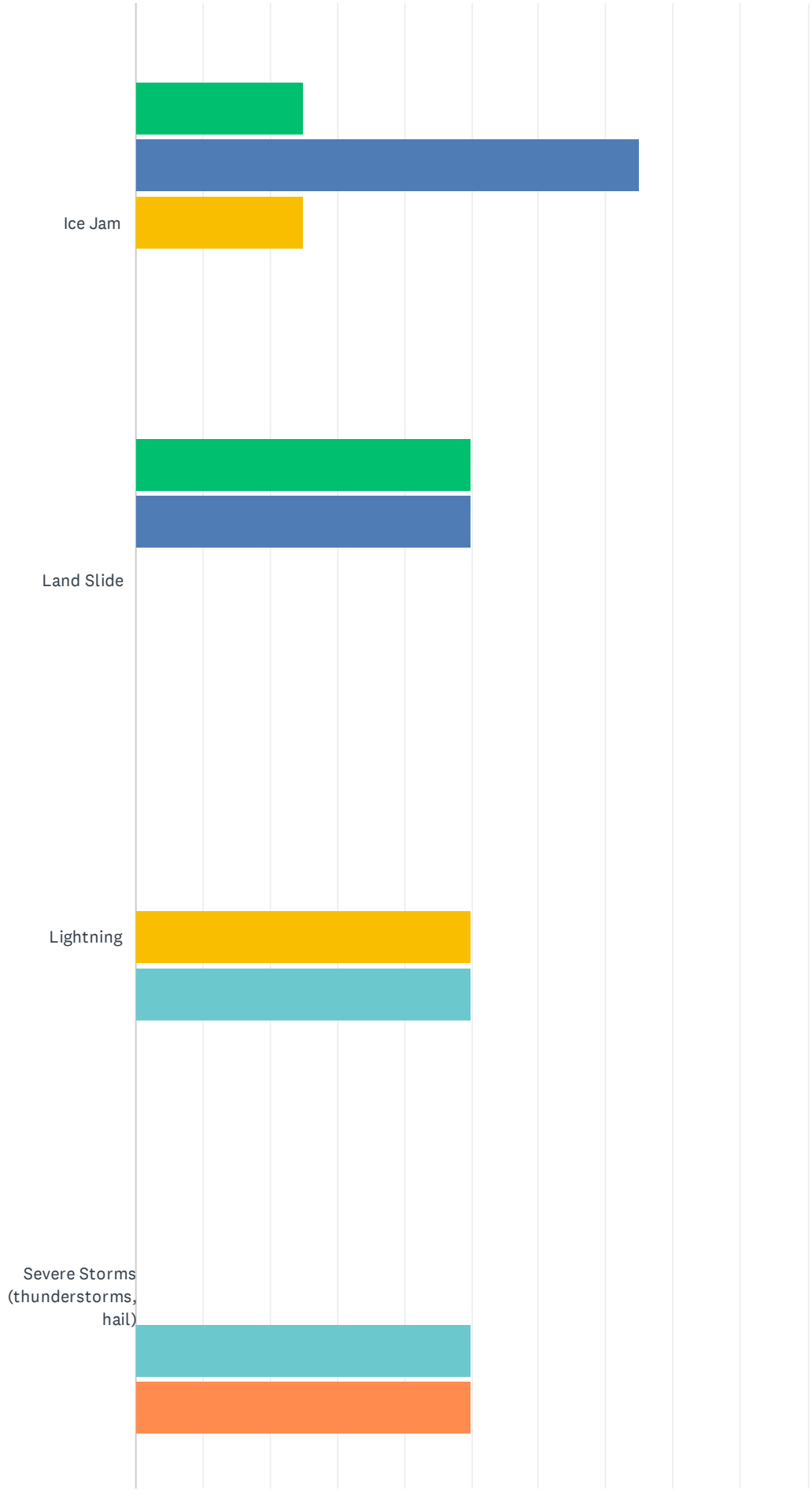
Q2 How concerned are you about the following hazards in Passaic County? Please check one for each hazard.

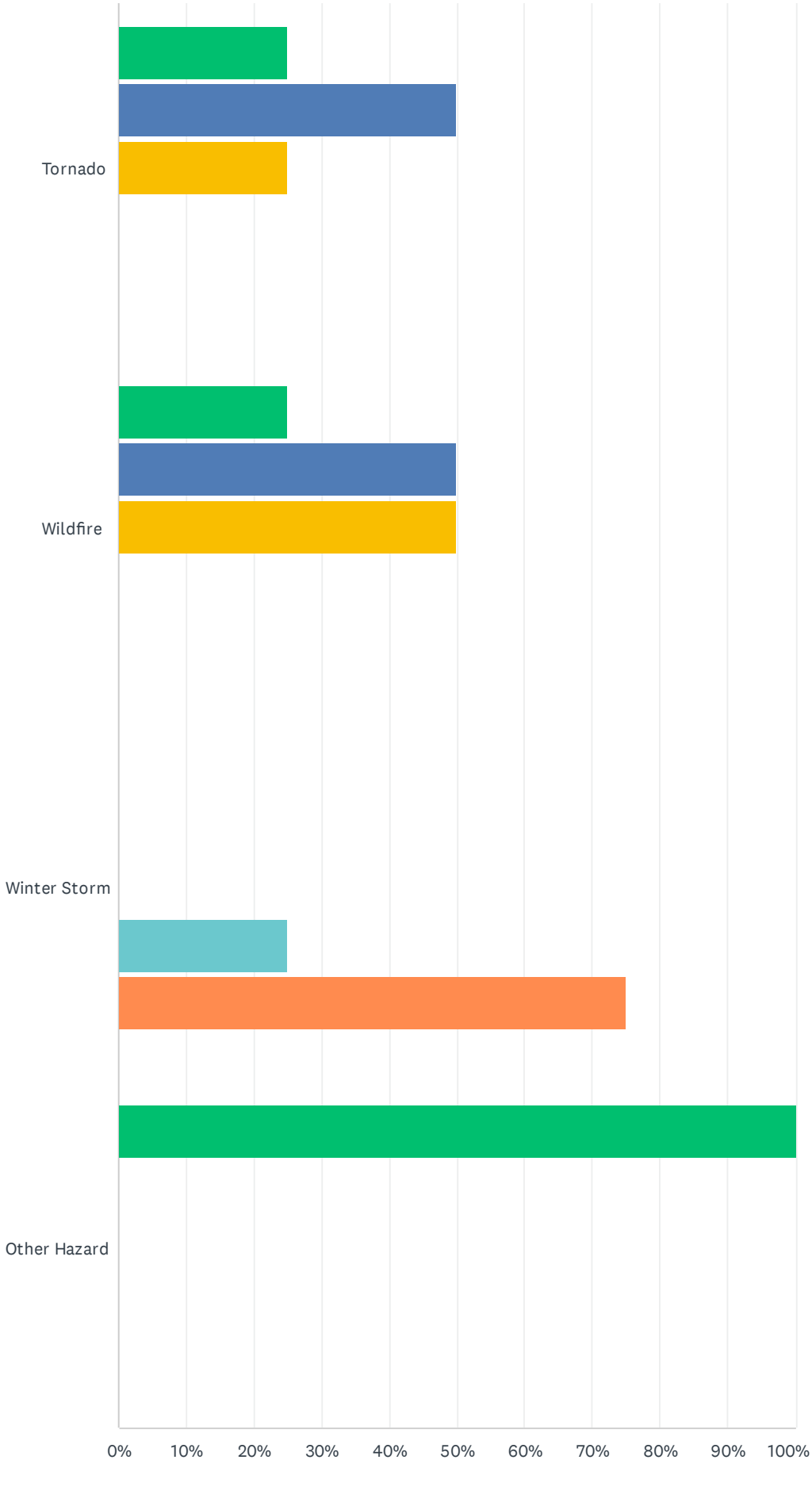
Answered: 4 Skipped: 0




Earthquake
Extreme Temperatures (heat and cold)
Extreme Wind
Flooding - Street/Property


Flooding - Stormwater
Flooding - Basement
Flooding - 1st Floor or above
Hazardous Materials


Ice Jam
Land Slide
Lightning
Severe Storms (thunderstorms, hail)

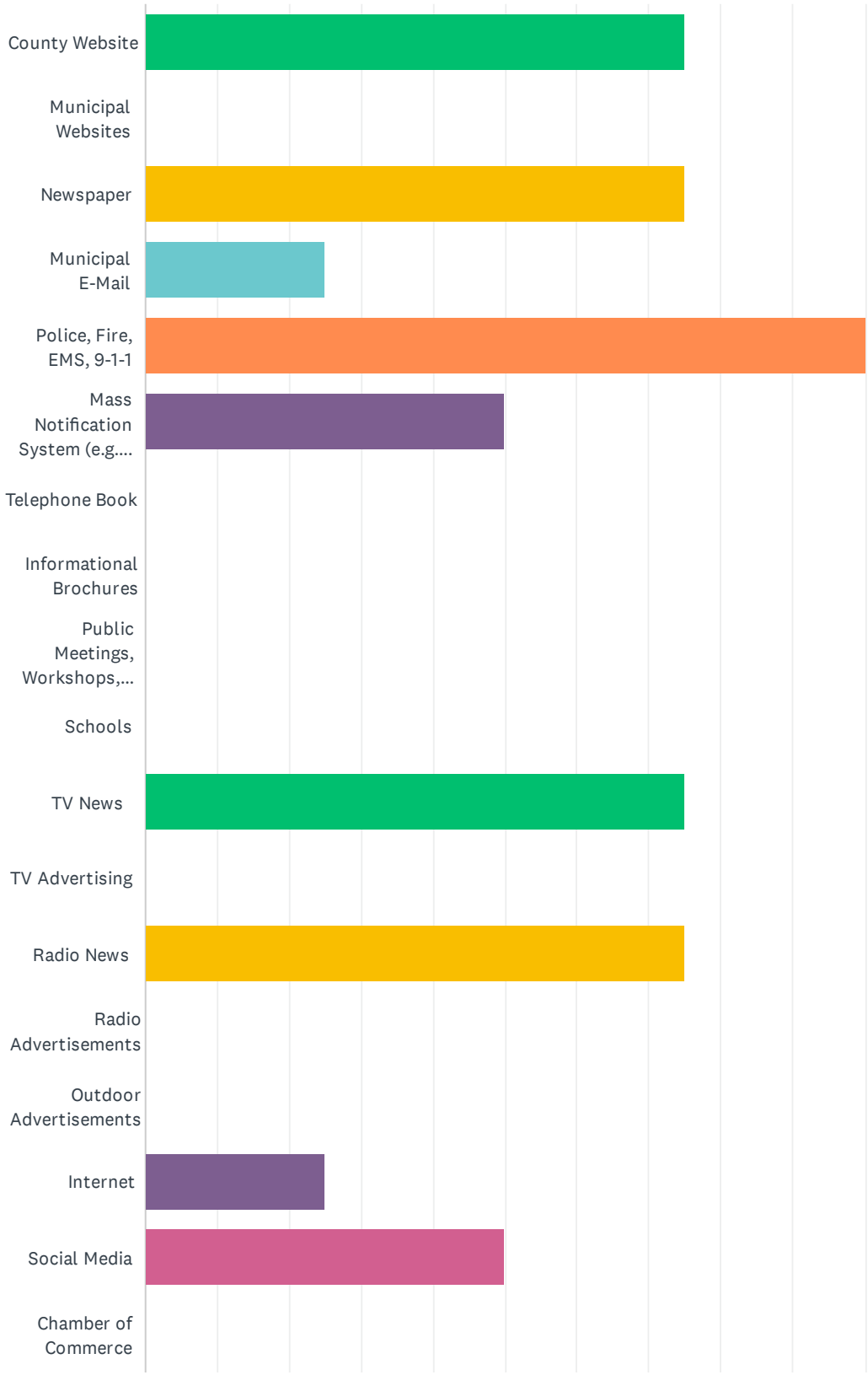

Tornado
Wildfire
Winter Storm
Other Hazard
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

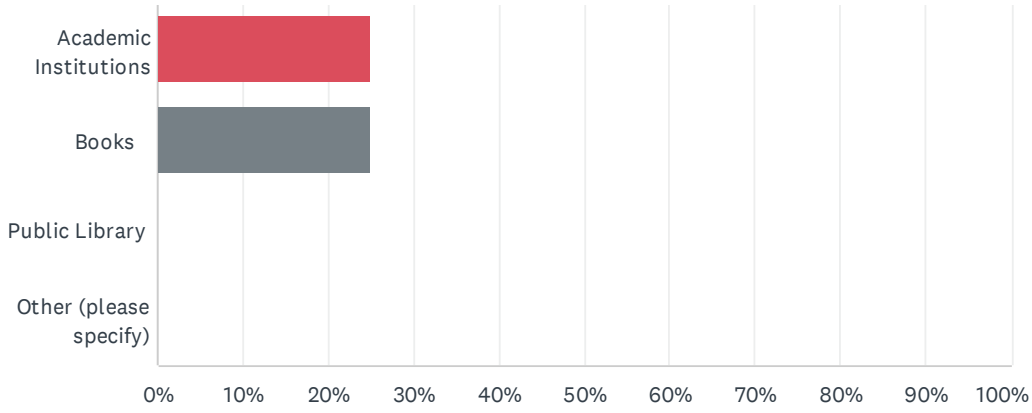


	NOT CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	EXTREMELY CONCERNED	TOTAL RESPONDENTS
Coastal Hazards (Hurricane, Tropical Storm, Nor'easter)	75.00% 3	0.00% 0	0.00% 0	0.00% 0	25.00% 1	4
Dam Failure	50.00% 2	75.00% 3	0.00% 0	0.00% 0	0.00% 0	4
Disease/Pandemic Outbreak	25.00% 1	25.00% 1	25.00% 1	25.00% 1	0.00% 0	4
Drought	0.00% 0	25.00% 1	25.00% 1	50.00% 2	0.00% 0	4
Earthquake	75.00% 3	25.00% 1	0.00% 0	0.00% 0	0.00% 0	4
Extreme Temperatures (heat and cold)	0.00% 0	25.00% 1	25.00% 1	50.00% 2	25.00% 1	4
Extreme Wind	0.00% 0	25.00% 1	0.00% 0	50.00% 2	25.00% 1	4
Flooding - Street/Property	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 4	4
Flooding - Stormwater	0.00% 0	0.00% 0	0.00% 0	50.00% 2	50.00% 2	4
Flooding - Basement	0.00% 0	0.00% 0	25.00% 1	25.00% 1	50.00% 2	4
Flooding - 1st Floor or above	0.00% 0	25.00% 1	0.00% 0	25.00% 1	50.00% 2	4
Hazardous Materials	50.00% 2	25.00% 1	25.00% 1	0.00% 0	0.00% 0	4
Ice Jam	25.00% 1	75.00% 3	25.00% 1	0.00% 0	0.00% 0	4
Land Slide	50.00% 2	50.00% 2	0.00% 0	0.00% 0	0.00% 0	4
Lightning	0.00% 0	0.00% 0	50.00% 2	50.00% 2	0.00% 0	4
Severe Storms (thunderstorms, hail)	0.00% 0	0.00% 0	0.00% 0	50.00% 2	50.00% 2	4
Tornado	25.00% 1	50.00% 2	25.00% 1	0.00% 0	0.00% 0	4
Wildfire	25.00% 1	50.00% 2	50.00% 2	0.00% 0	0.00% 0	4
Winter Storm	0.00% 0	0.00% 0	0.00% 0	25.00% 1	75.00% 3	4
Other Hazard	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3

Q3 How do you receive your information concerning a disaster? Check all that apply.

Answered: 4 Skipped: 0



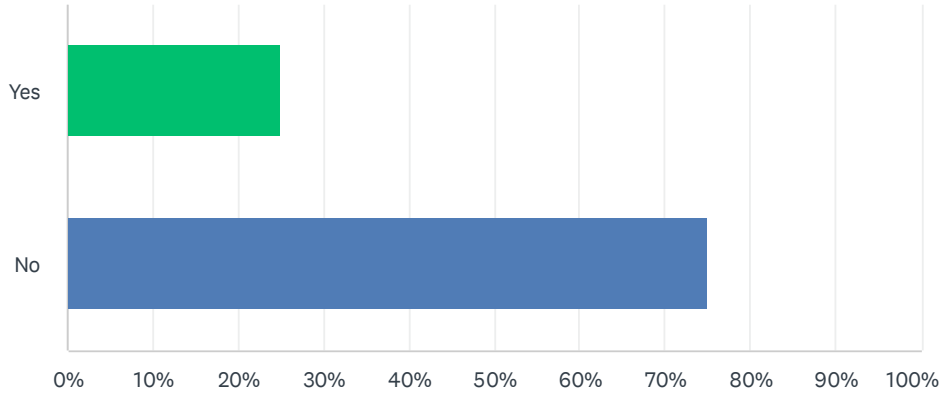


ANSWER CHOICES	RESPONSES	
County Website	75.00%	3
Municipal Websites	0.00%	0
Newspaper	75.00%	3
Municipal E-Mail	25.00%	1
Police, Fire, EMS, 9-1-1	100.00%	4
Mass Notification System (e.g., NY Alert)	50.00%	2
Telephone Book	0.00%	0
Informational Brochures	0.00%	0
Public Meetings, Workshops, Public Awareness Events	0.00%	0
Schools	0.00%	0
TV News	75.00%	3
TV Advertising	0.00%	0
Radio News	75.00%	3
Radio Advertisements	0.00%	0
Outdoor Advertisements	0.00%	0
Internet	25.00%	1
Social Media	50.00%	2
Chamber of Commerce	0.00%	0
Academic Institutions	25.00%	1
Books	25.00%	1
Public Library	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 4		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q4 In the past, has your home been damaged by a hazard event (i.e., flood waters entering the first floor of your home or pipes freezing during periods of cold temperatures).

Answered: 4 Skipped: 0

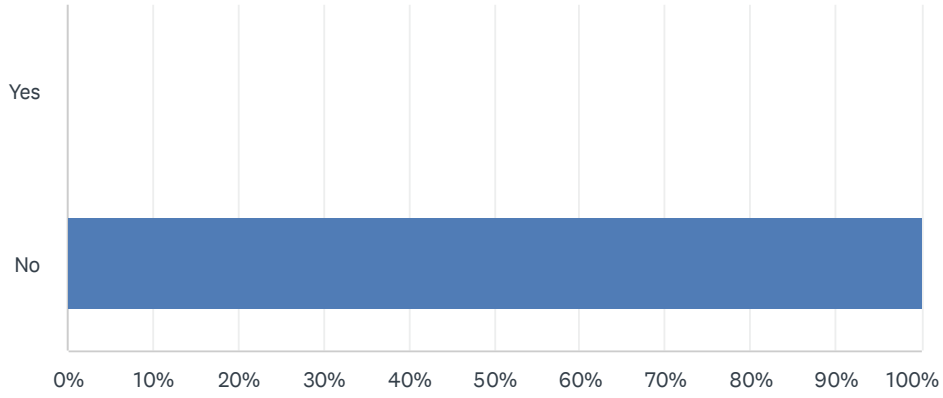


ANSWER CHOICES	RESPONSES	
Yes	25.00%	1
No	75.00%	3
TOTAL		4

#	PLEASE EXPLAIN THE TYPE OF DAMAGE SUSTAINED AND WHEN IT OCCURRED.	DATE
1	frozen pipes	6/6/2024 1:20 PM

Q5 If you answered 'yes' above, did you report the damages to your local police or fire departments or to an emergency management agency?

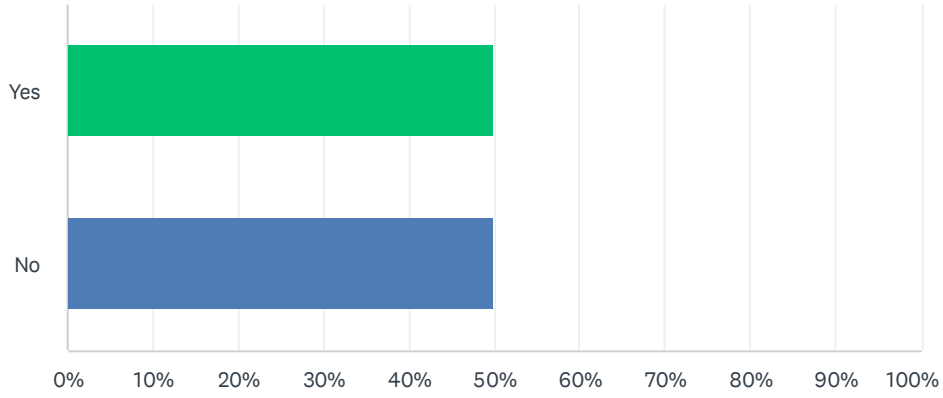
Answered: 4 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	4
TOTAL		4

Q6 To the best of your knowledge, is your property located in a designated floodplain? If you do not know, click here to find out.

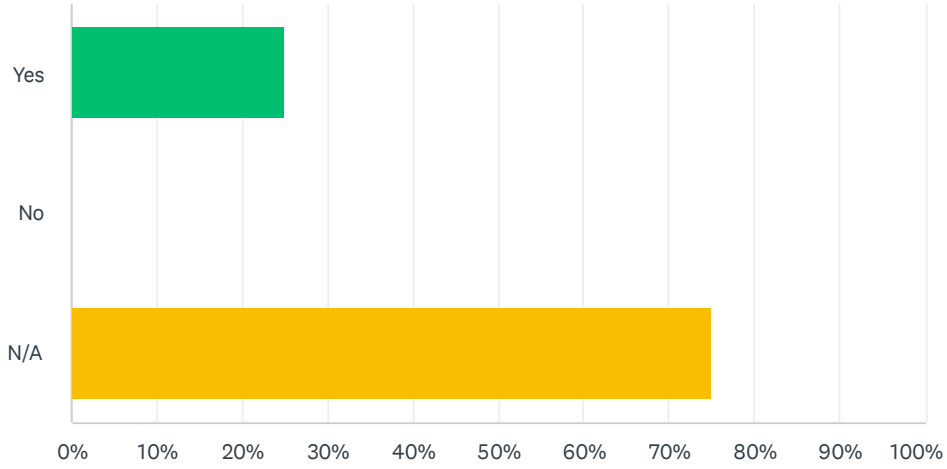
Answered: 4 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	50.00%	2
No	50.00%	2
TOTAL		4

Q7 If your property is in the floodplain, do you have flood insurance?

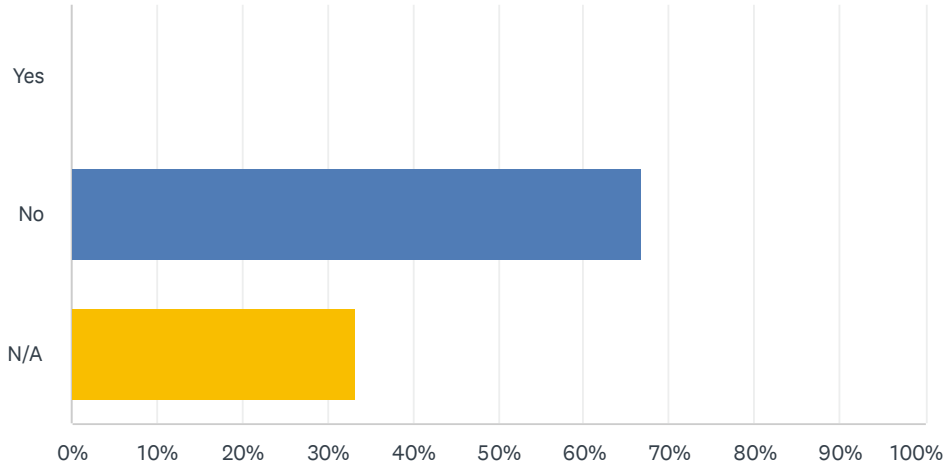
Answered: 4 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	25.00%	1
No	0.00%	0
N/A	75.00%	3
TOTAL		4

Q8 If your property is located outside of the floodplain, do you have flood insurance?

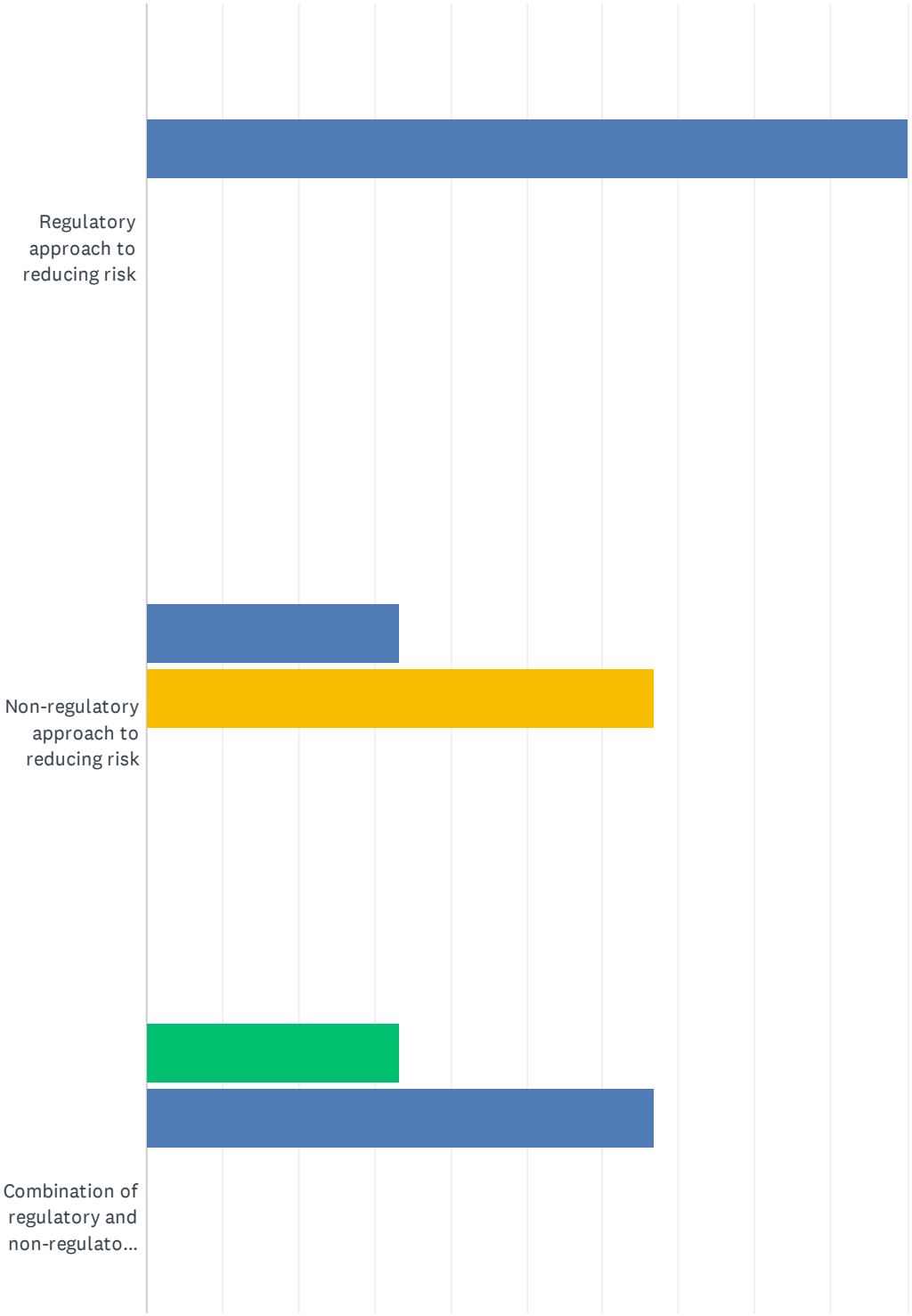
Answered: 3 Skipped: 1

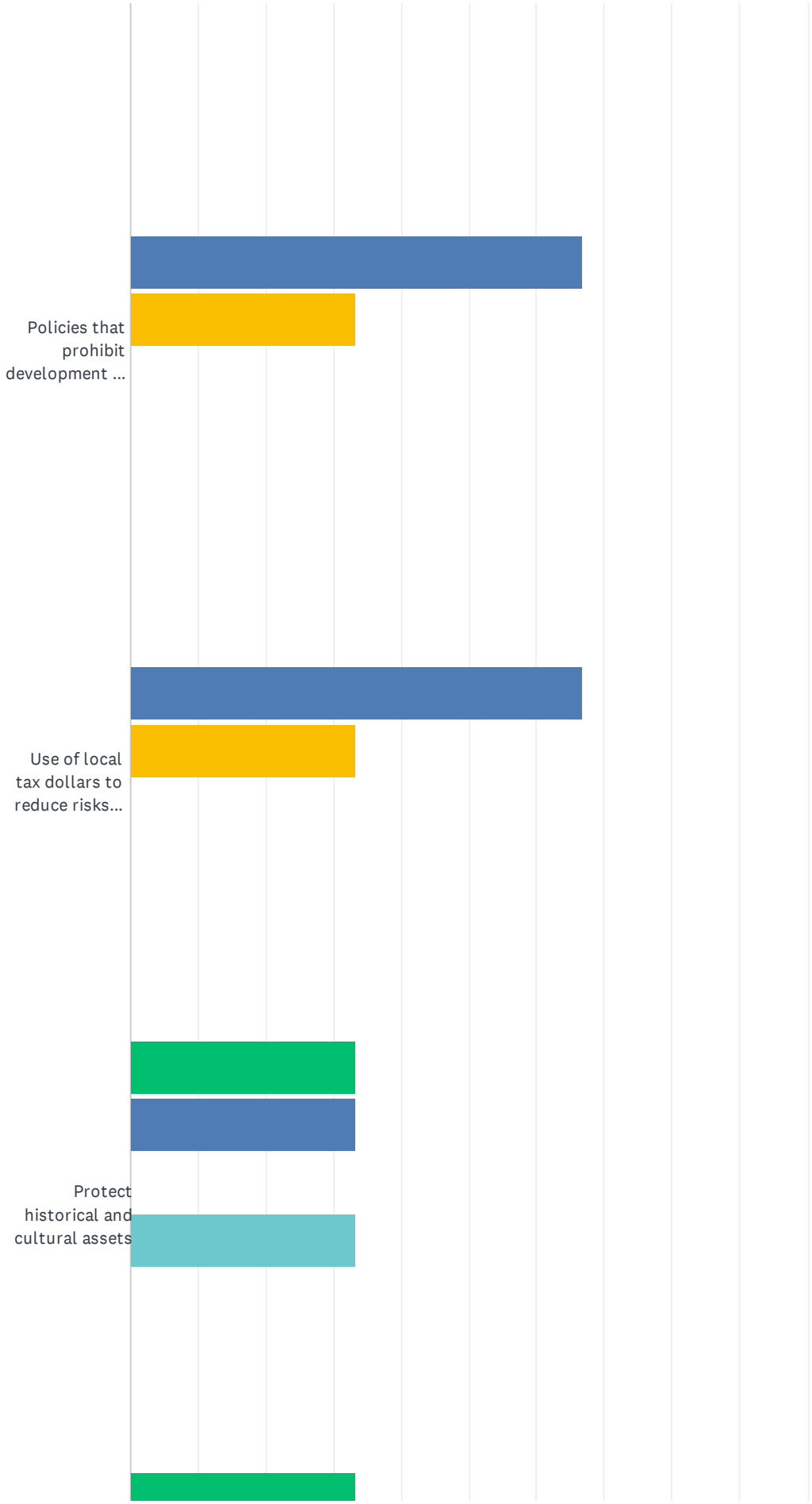


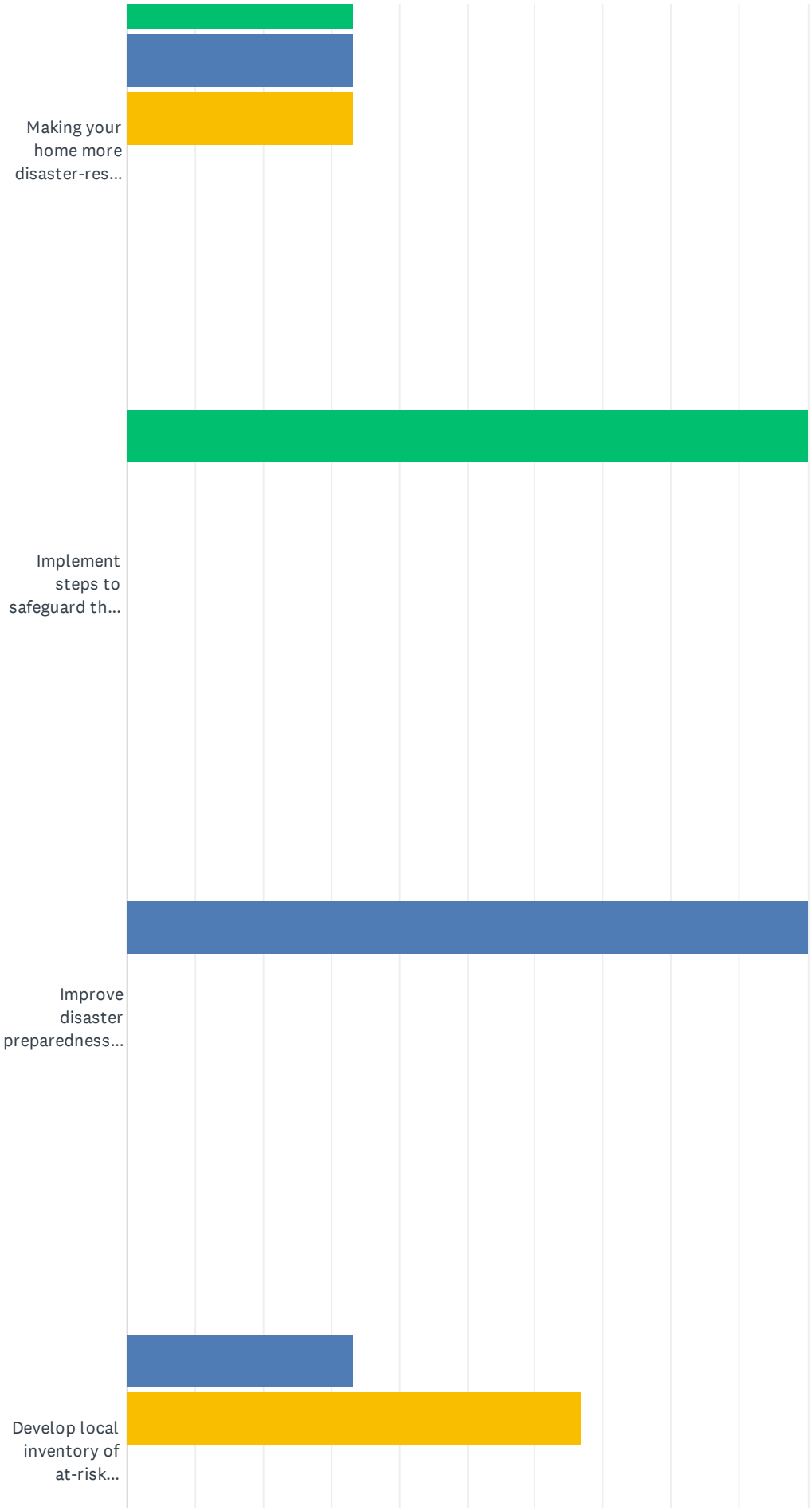
ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	66.67%	2
N/A	33.33%	1
TOTAL		3

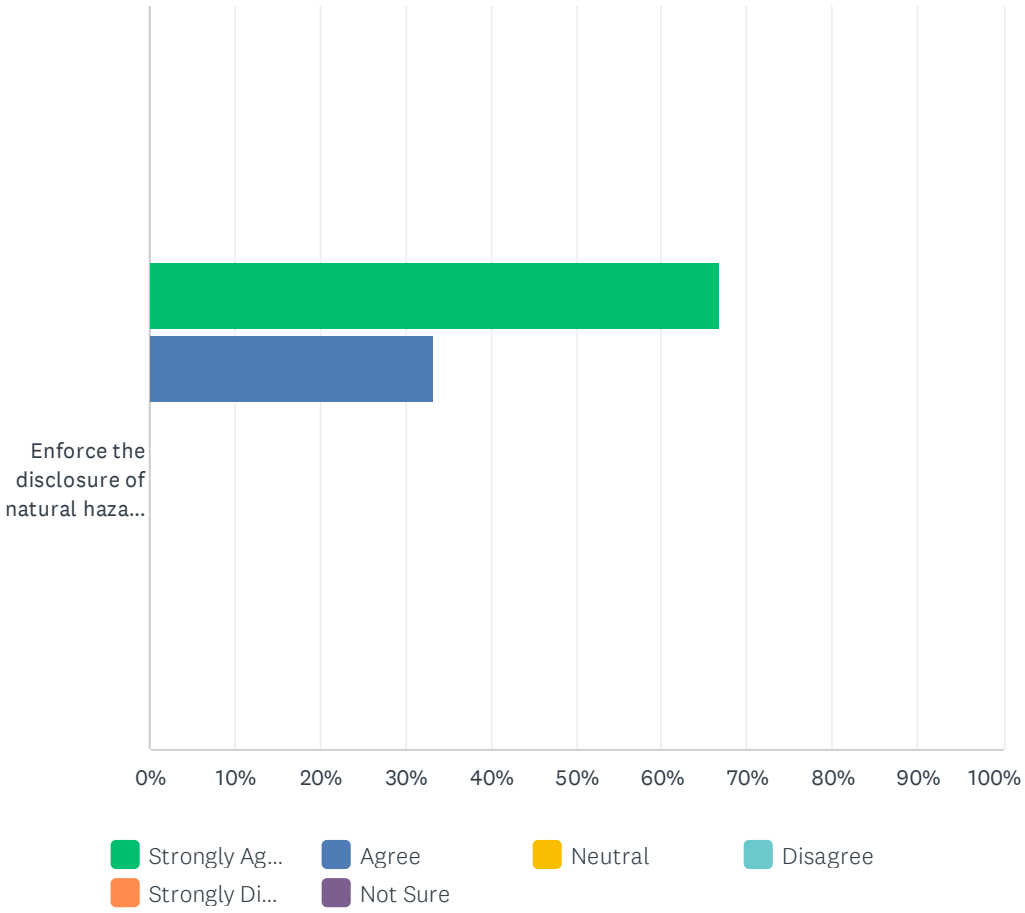
Q9 A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. Please check the box that best represents your opinion on the following strategies to reduce the risk and loss associated with natural hazards in Passaic County.

Answered: 3 Skipped: 1




Policies that prohibit development ...
Use of local tax dollars to reduce risks...
Protect historical and cultural assets

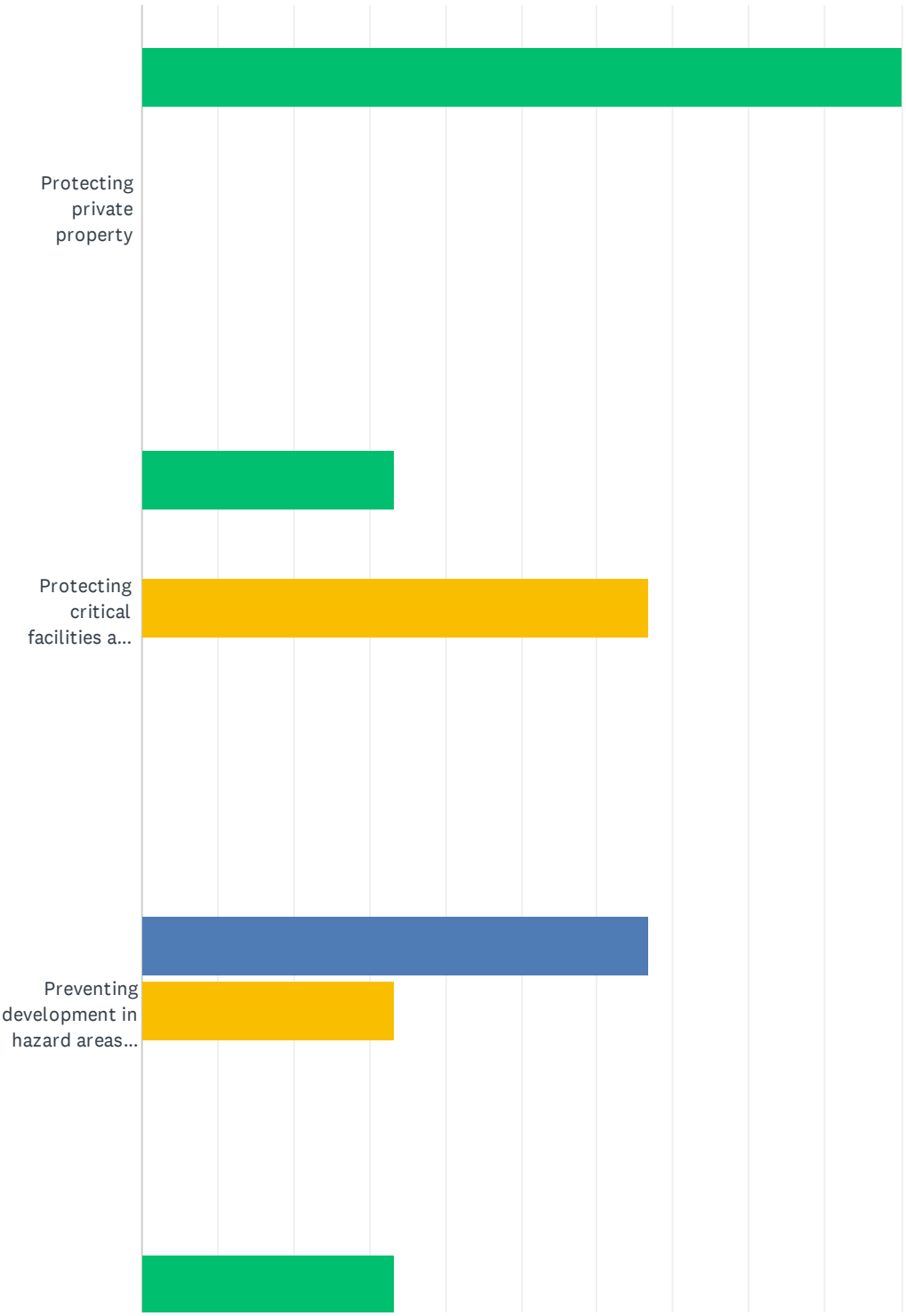

Making your home more disaster-res...
Implement steps to safeguard th...
Improve disaster preparedness...
Develop local inventory of at-risk...

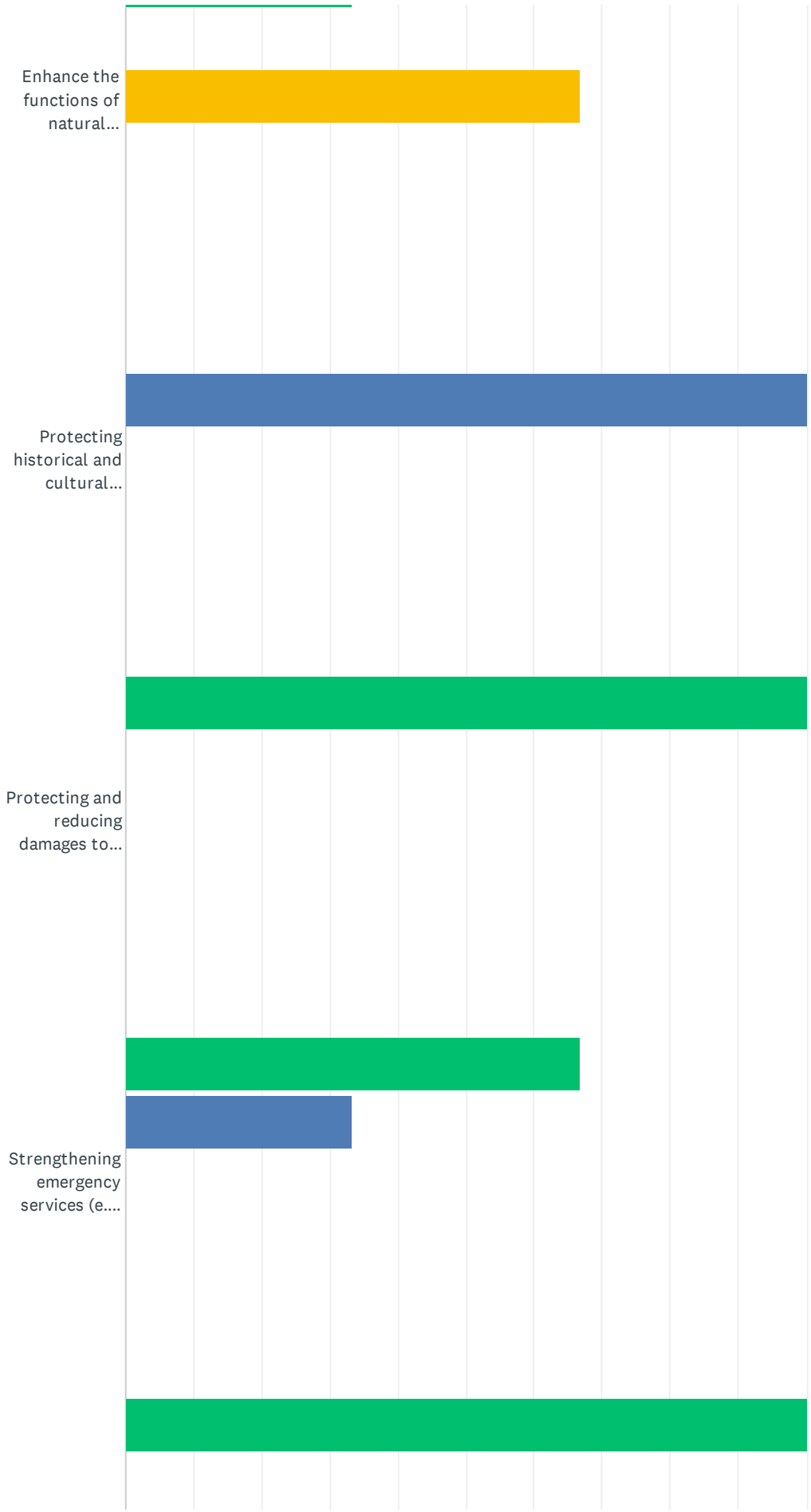

Enforce the disclosure of natural haza...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Strongly Ag...
Agree
Neutral
Disagree
Strongly Di...
Not Sure

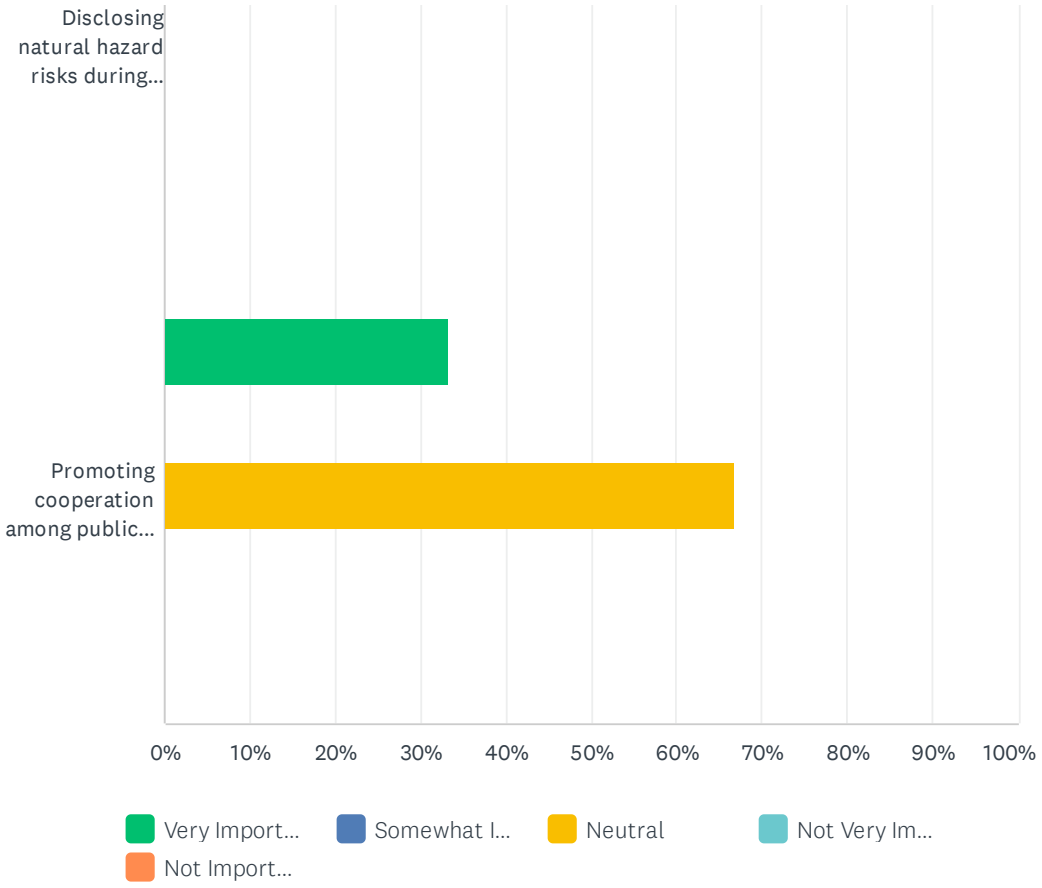
	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	NOT SURE	TOTAL
Regulatory approach to reducing risk	0.00% 0	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Non-regulatory approach to reducing risk	0.00% 0	33.33% 1	66.67% 2	0.00% 0	0.00% 0	0.00% 0	3
Combination of regulatory and non-regulatory approaches to reducing risk	33.33% 1	66.67% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Policies that prohibit development in areas subject to natural hazards	0.00% 0	66.67% 2	33.33% 1	0.00% 0	0.00% 0	0.00% 0	3
Use of local tax dollars to reduce risks and losses from natural hazards	0.00% 0	66.67% 2	33.33% 1	0.00% 0	0.00% 0	0.00% 0	3
Protect historical and cultural assets	33.33% 1	33.33% 1	0.00% 0	33.33% 1	0.00% 0	0.00% 0	3
Making your home more disaster-resilient	33.33% 1	33.33% 1	33.33% 1	0.00% 0	0.00% 0	0.00% 0	3
Implement steps to safeguard the local economy following a disaster	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Improve disaster preparedness of local schools	0.00% 0	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Develop local inventory of at-risk buildings and infrastructure	0.00% 0	33.33% 1	66.67% 2	0.00% 0	0.00% 0	0.00% 0	3
Enforce the disclosure of natural hazard risks during real estate transactions	66.67% 2	33.33% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3

Q10 Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help us determine the priorities of our residents regarding planning for natural hazards in Passaic County. Please tell us how important each one is to you.

Answered: 3 Skipped: 1




Enhance the functions of natural...
Protecting historical and cultural...
Protecting and reducing damages to...
Strengthening emergency services (e....



	VERY IMPORTANT	SOMEWHAT IMPORTANT	NEUTRAL	NOT VERY IMPORTANT	NOT IMPORTANT	TOTAL
Protecting private property	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Protecting critical facilities and community lifelines	33.33% 1	0.00% 0	66.67% 2	0.00% 0	0.00% 0	3
Preventing development in hazard areas (e.g., restrict building in the floodplain)	0.00% 0	66.67% 2	33.33% 1	0.00% 0	0.00% 0	3
Enhance the functions of natural features (e.g., streams, wetlands)	33.33% 1	0.00% 0	66.67% 2	0.00% 0	0.00% 0	3
Protecting historical and cultural landmarks	0.00% 0	100.00% 3	0.00% 0	0.00% 0	0.00% 0	3
Protecting and reducing damages to utilities	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Strengthening emergency services (e.g., police, fire, EMS)	66.67% 2	33.33% 1	0.00% 0	0.00% 0	0.00% 0	3
Disclosing natural hazard risks during real estate transactions	100.00% 3	0.00% 0	0.00% 0	0.00% 0	0.00% 0	3
Promoting cooperation among public agencies, residents, non-profit organizations, and local businesses	33.33% 1	0.00% 0	66.67% 2	0.00% 0	0.00% 0	3

Q11 Please identify any specific vulnerabilities that you are aware of in your city/town/village (e.g., flood-prone areas or specific properties, critical facilities that lack backup power, etc.). Please list street names and other specific identifiers if possible.

Answered: 3 Skipped: 1

#	RESPONSES	DATE
1	Wayne and Patterson flood too often during any event	3/7/2025 12:38 PM
2	Paterson and Wayne get direct flooding from the Passaic river.	3/5/2025 3:26 PM
3	Local flooding through Wayne	3/5/2025 11:20 AM

Q12 Please identify any specific vulnerabilities that you are aware of in Passaic County outside of your city/town/village (e.g., flood-prone areas or specific properties, critical facilities that lack backup power, etc.). Please list the city/town/village, street names, and other specific identifiers if possible.

Answered: 0 Skipped: 4

#	RESPONSES	DATE
	There are no responses.	

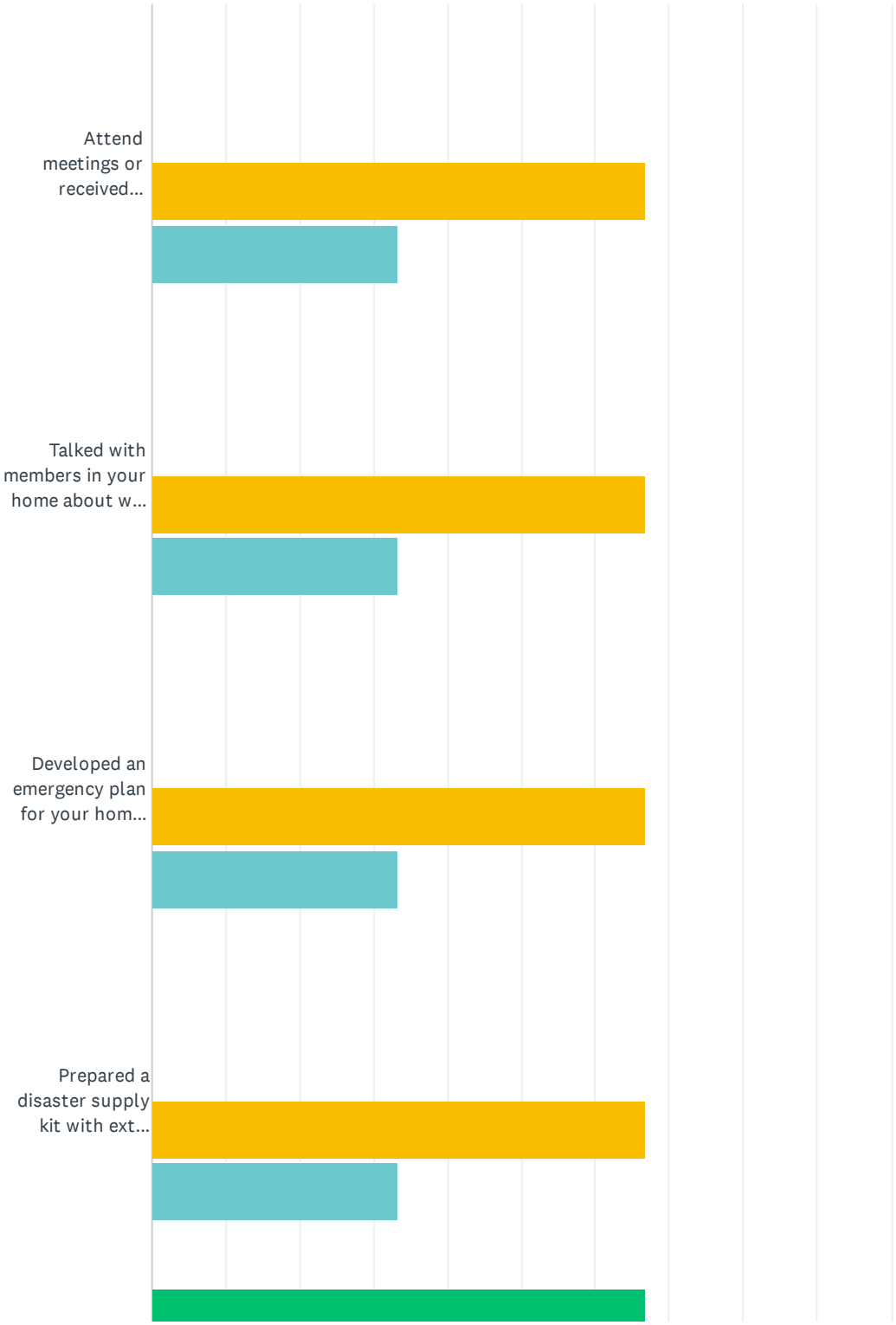
Q13 Do you have any other comments, questions, or concerns regarding hazard mitigation in Passaic County?

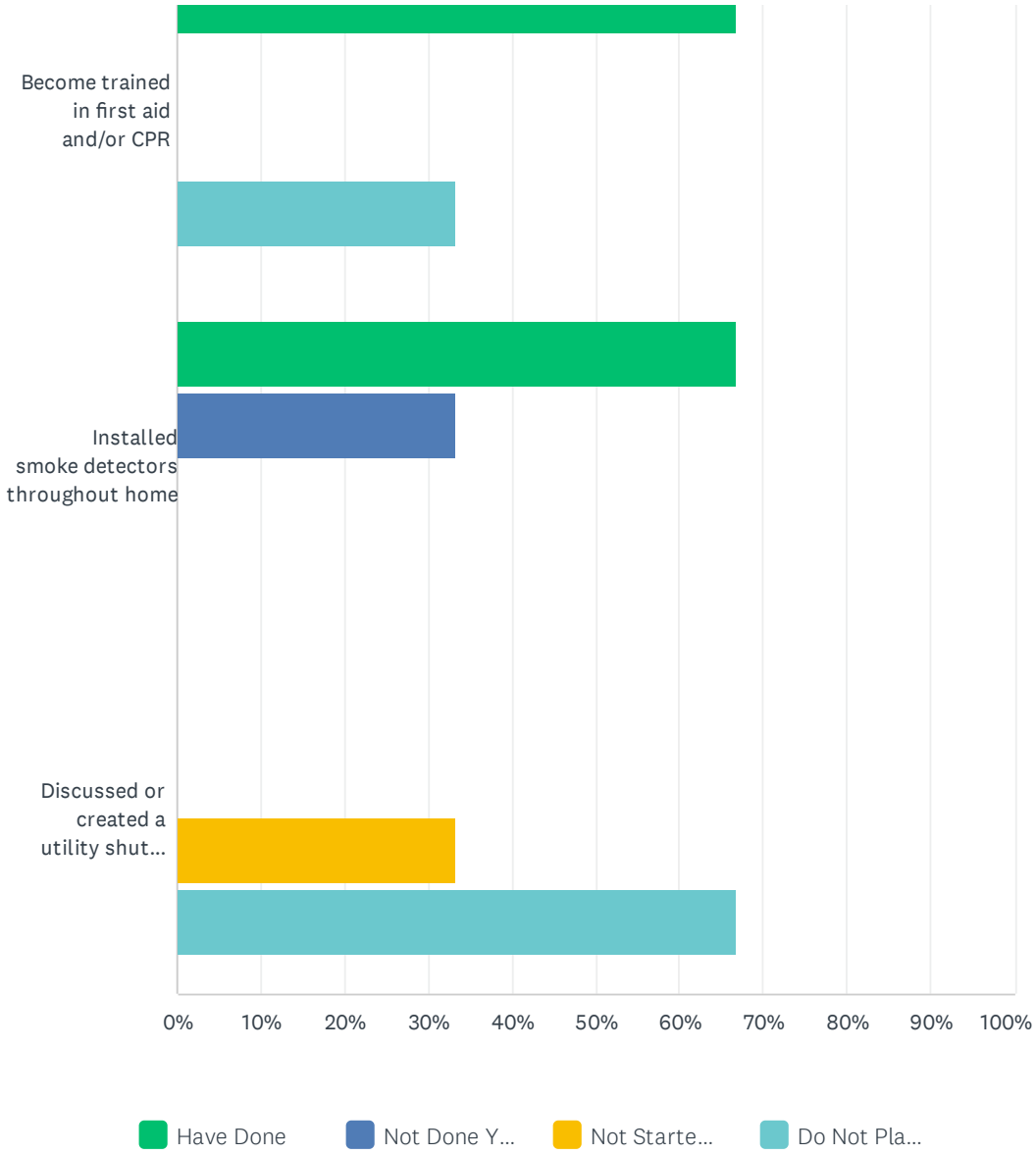
Answered: 0 Skipped: 4

#	RESPONSES	DATE
	There are no responses.	

Q14 In the following list, please check those activities that you have done in your home, plan to do in the near future, have not done, or are unable to do. Please check one answer for each activity that you or someone in your household have done.

Answered: 3 Skipped: 1




Become trained in first aid and/or CPR
Installed smoke detectors throughout home
Discussed or created a utility shut...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Have Done
Not Done Y...
Not Starte...
Do Not Pla...

	HAVE DONE	NOT DONE YET, BUT STARTED	NOT STARTED YET, BUT PLAN TO DO	DO NOT PLAN TO DO	TOTAL
Attend meetings or received information on natural disasters or emergency preparedness	0.00% 0	0.00% 0	66.67% 2	33.33% 1	3
Talked with members in your home about what to do in case of a natural disaster or emergency	0.00% 0	0.00% 0	66.67% 2	33.33% 1	3
Developed an emergency plan for your home and family in order to decide what everyone will do in the event of a disaster or emergency	0.00% 0	0.00% 0	66.67% 2	33.33% 1	3
Prepared a disaster supply kit with extra food, water, batteries, etc.	0.00% 0	0.00% 0	66.67% 2	33.33% 1	3
Become trained in first aid and/or CPR	66.67% 2	0.00% 0	0.00% 0	33.33% 1	3
Installed smoke detectors throughout home	66.67% 2	33.33% 1	0.00% 0	0.00% 0	3
Discussed or created a utility shutoff procedure in the event of a natural disaster	0.00% 0	0.00% 0	33.33% 1	66.67% 2	3

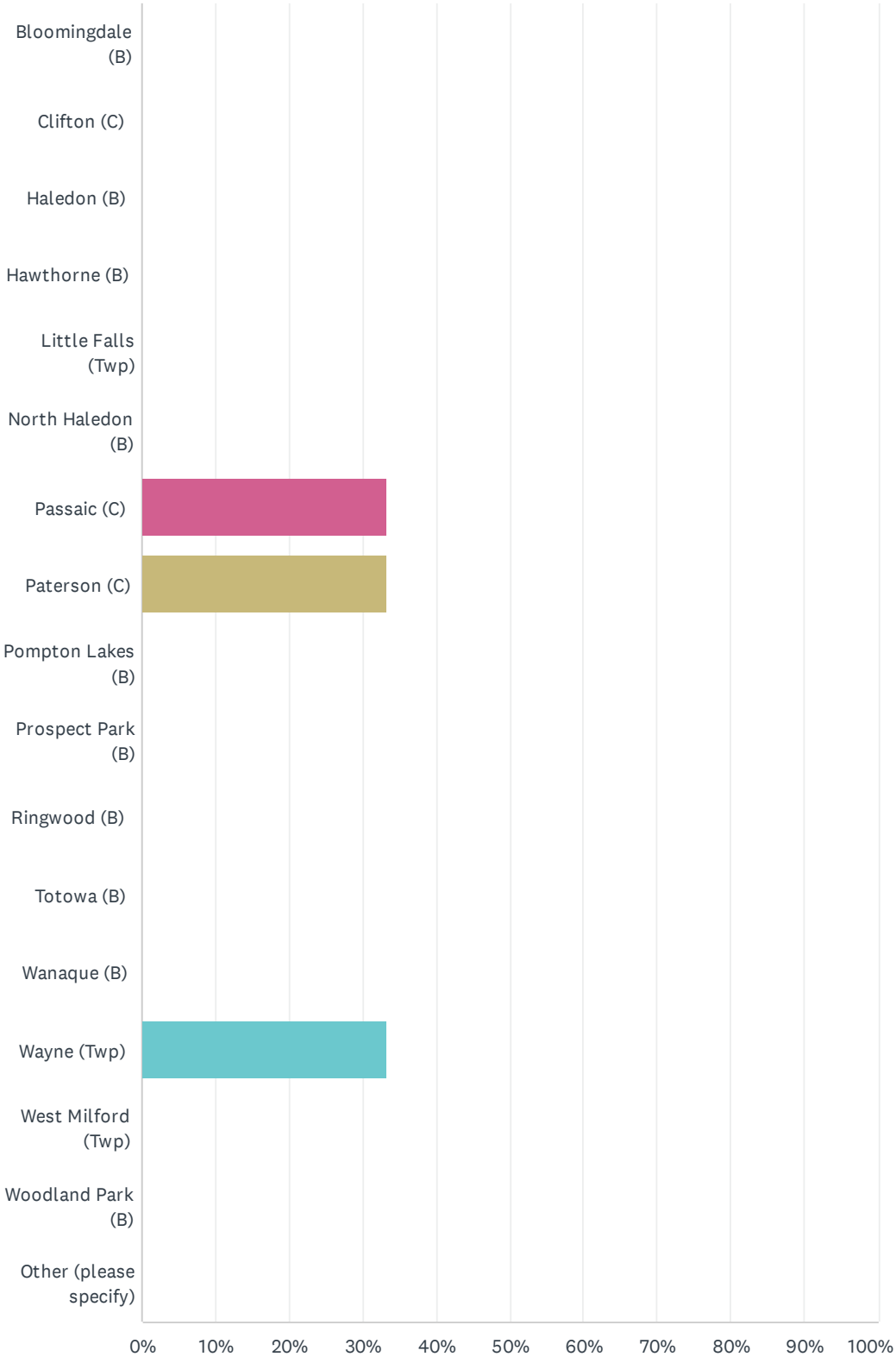
Q15 Do you have any relevant questions or comments for Passaic County?

Answered: 0 Skipped: 4

#	RESPONSES	DATE
	There are no responses.	

Q16 Please indicate the municipality in which you live:

Answered: 3 Skipped: 1

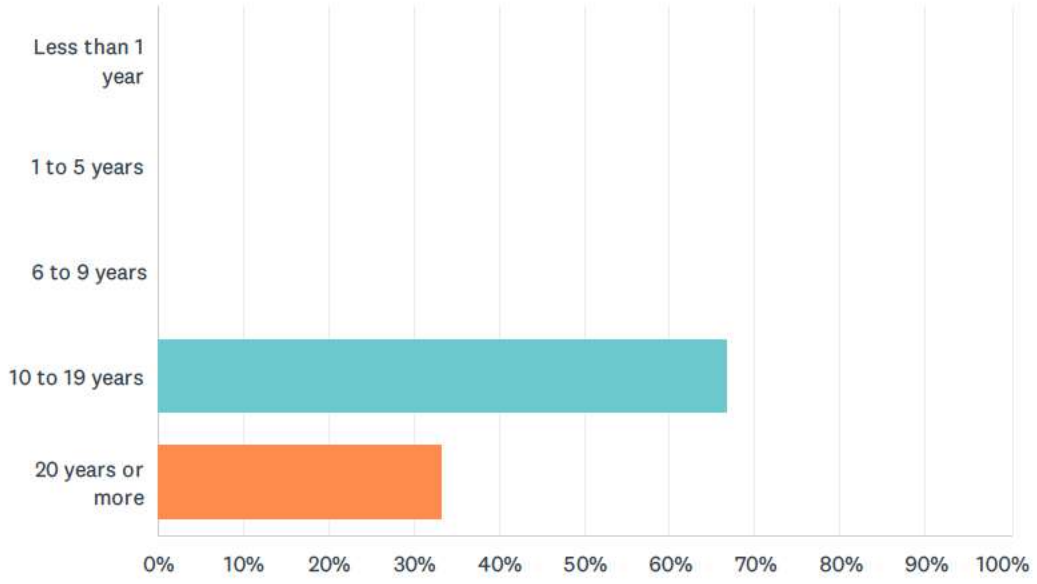


ANSWER CHOICES	RESPONSES	
Bloomingdale (B)	0.00%	0
Clifton (C)	0.00%	0
Haledon (B)	0.00%	0
Hawthorne (B)	0.00%	0
Little Falls (Twp)	0.00%	0
North Haledon (B)	0.00%	0
Passaic (C)	33.33%	1
Paterson (C)	33.33%	1
Pompton Lakes (B)	0.00%	0
Prospect Park (B)	0.00%	0
Ringwood (B)	0.00%	0
Totowa (B)	0.00%	0
Wanaque (B)	0.00%	0
Wayne (Twp)	33.33%	1
West Milford (Twp)	0.00%	0
Woodland Park (B)	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 3		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q17 How long have you lived here?

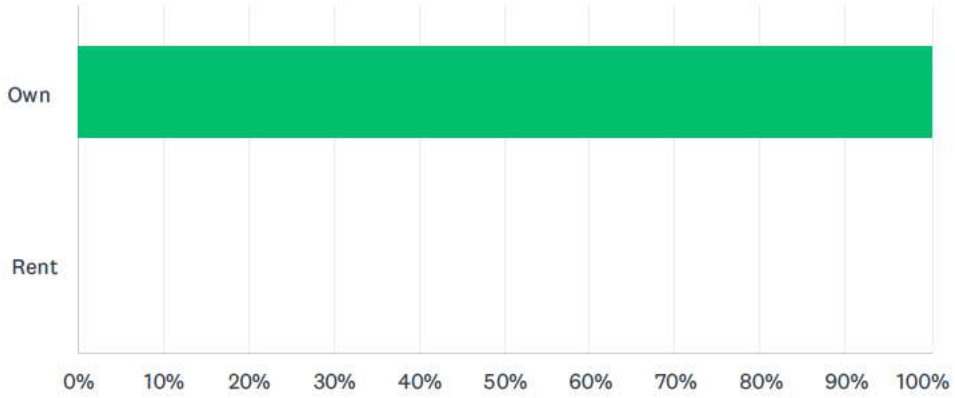
Answered: 3 Skipped: 1



ANSWER CHOICES	RESPONSES	
Less than 1 year	0.00%	0
1 to 5 years	0.00%	0
6 to 9 years	0.00%	0
10 to 19 years	66.67%	2
20 years or more	33.33%	1
TOTAL		3

Q18 Do you own or rent your place of residence?

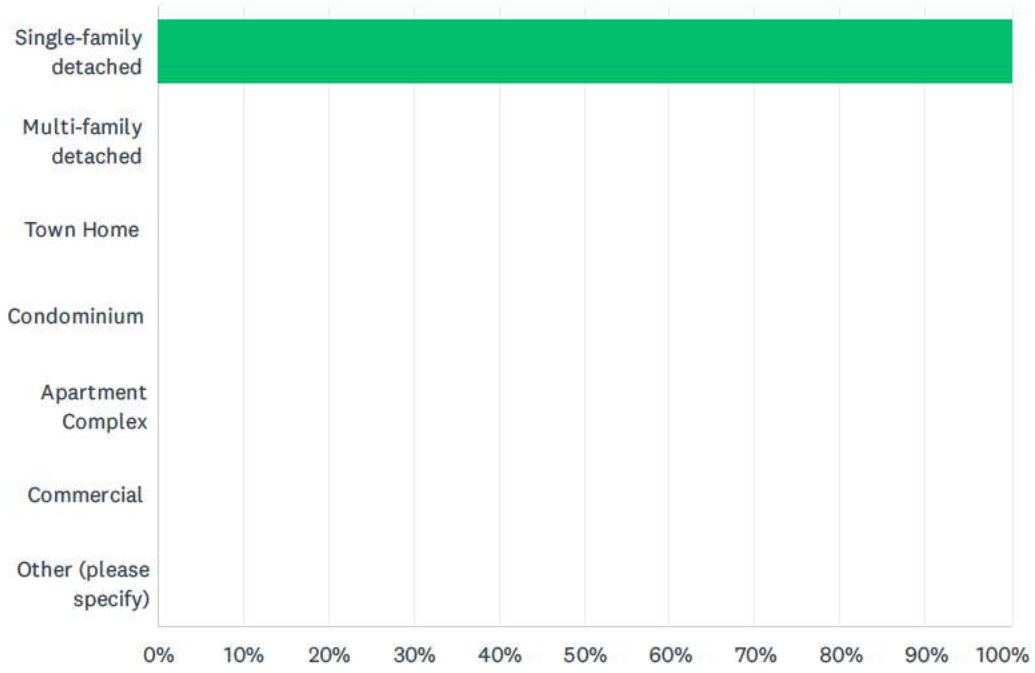
Answered: 3 Skipped: 1



ANSWER CHOICES	RESPONSES	
Own	100.00%	3
Rent	0.00%	0
TOTAL		3

Q19 What type of residence do you live in?

Answered: 3 Skipped: 1



ANSWER CHOICES	RESPONSES	
Single-family detached	100.00%	3
Multi-family detached	0.00%	0
Town Home	0.00%	0
Condominium	0.00%	0
Apartment Complex	0.00%	0
Commercial	0.00%	0
Other (please specify)	0.00%	0
TOTAL		3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

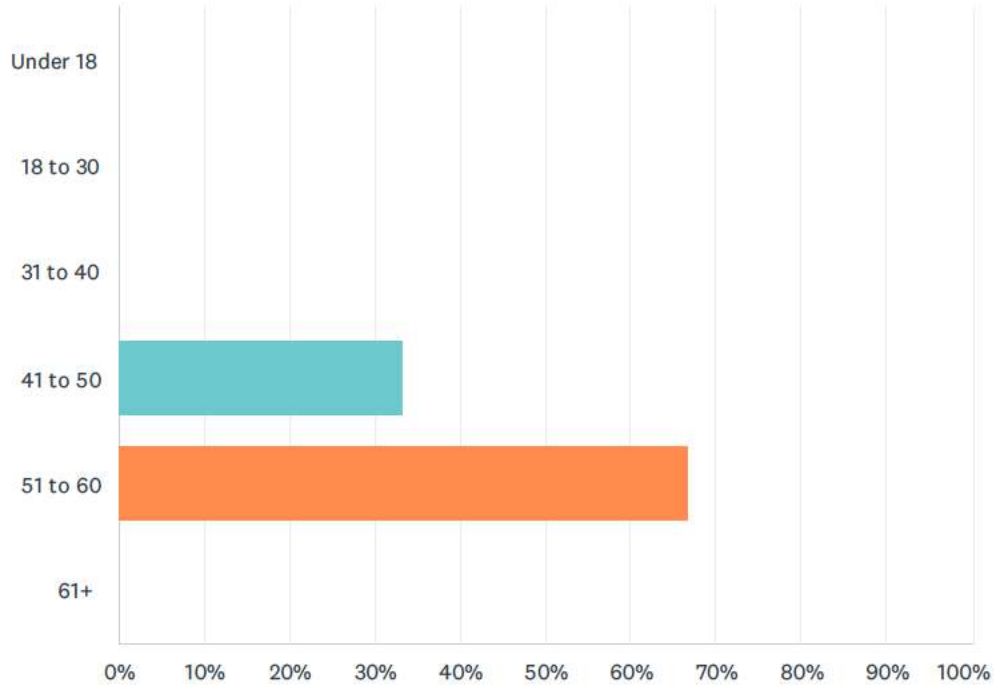
Q20 What street is your property on? (optional, will be kept confidential - only used to identify hazard areas such as flood prone areas).

Answered: 0 Skipped: 4

#	RESPONSES	DATE
	There are no responses.	

Q21 Please indicate your age range:

Answered: 3 Skipped: 1



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18 to 30	0.00%	0
31 to 40	0.00%	0
41 to 50	33.33%	1
51 to 60	66.67%	2
61+	0.00%	0
TOTAL		3

Q1 Contact Information

Answered: 1 Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	100.00%	1
Department/Agency	100.00%	1
Primary Responsibility	100.00%	1
Phone Number	100.00%	1
Email Address	100.00%	1

#	NAME	DATE
1		6/6/2024 1:32 PM

#	DEPARTMENT/AGENCY	DATE
1		6/6/2024 1:32 PM

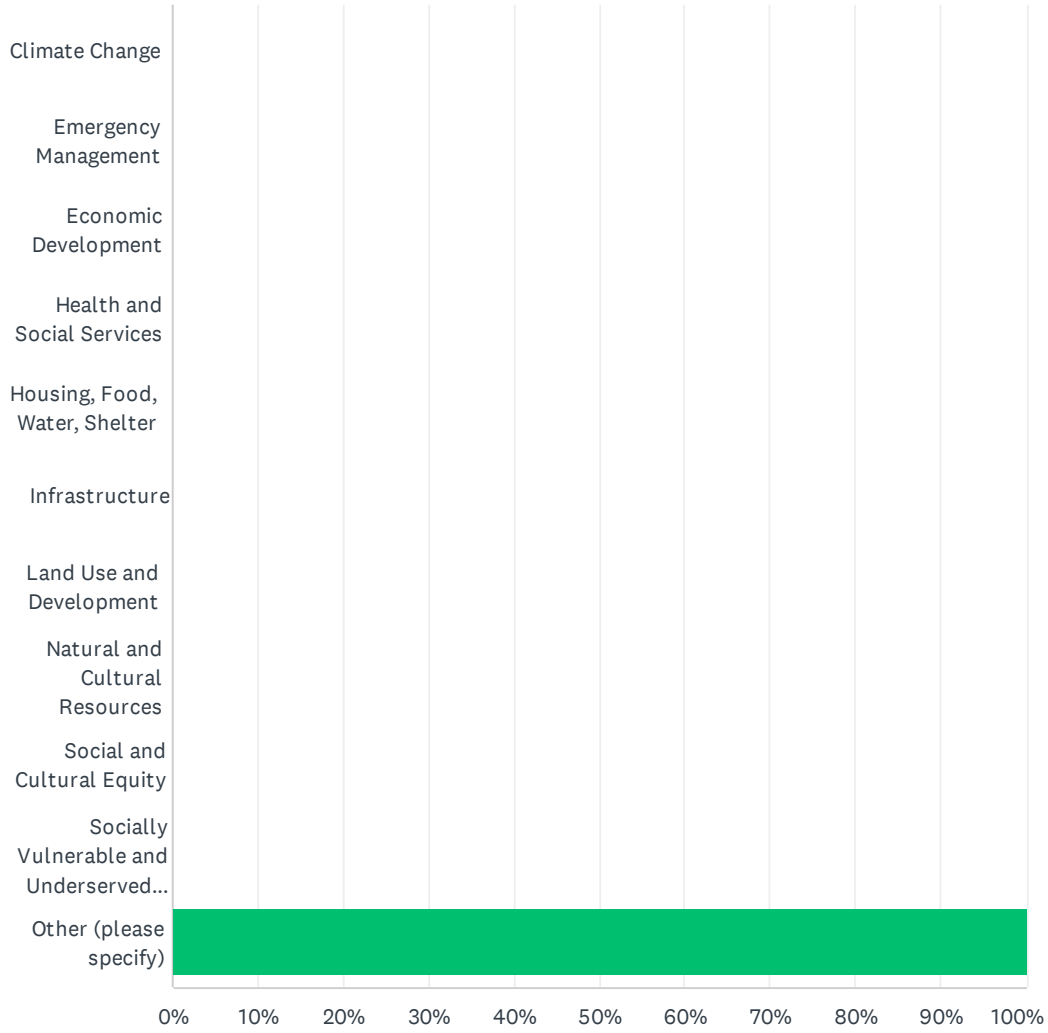
#	PRIMARY RESPONSIBILITY	DATE
1		6/6/2024 1:32 PM

#	PHONE NUMBER	DATE
1		6/6/2024 1:32 PM

#	EMAIL ADDRESS	DATE
1		6/6/2024 1:32 PM

Q2 Which of the following sectors and areas of expertise do you represent? Mark all that apply.

Answered: 1 Skipped: 0

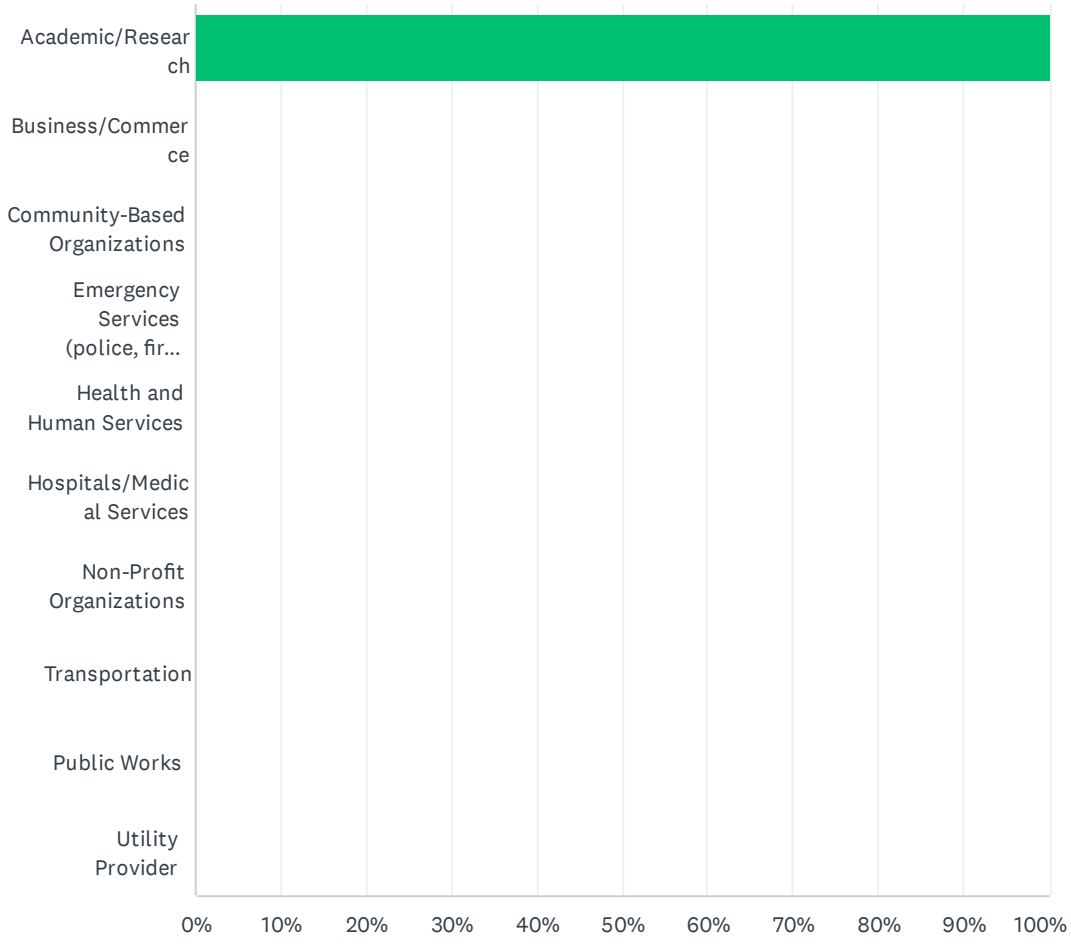


ANSWER CHOICES	RESPONSES	
Climate Change	0.00%	0
Emergency Management	0.00%	0
Economic Development	0.00%	0
Health and Social Services	0.00%	0
Housing, Food, Water, Shelter	0.00%	0
Infrastructure	0.00%	0
Land Use and Development	0.00%	0
Natural and Cultural Resources	0.00%	0
Social and Cultural Equity	0.00%	0
Socially Vulnerable and Underserved Populations	0.00%	0
Other (please specify)	100.00%	1
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
1	Education	6/6/2024 1:32 PM

Q3 What category does your facility operation/service fall under?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Academic/Research	100.00%	1
Business/Commerce	0.00%	0
Community-Based Organizations	0.00%	0
Emergency Services (police, fire, EMS)	0.00%	0
Health and Human Services	0.00%	0
Hospitals/Medical Services	0.00%	0
Non-Profit Organizations	0.00%	0
Transportation	0.00%	0
Public Works	0.00%	0
Utility Provider	0.00%	0
TOTAL		1

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

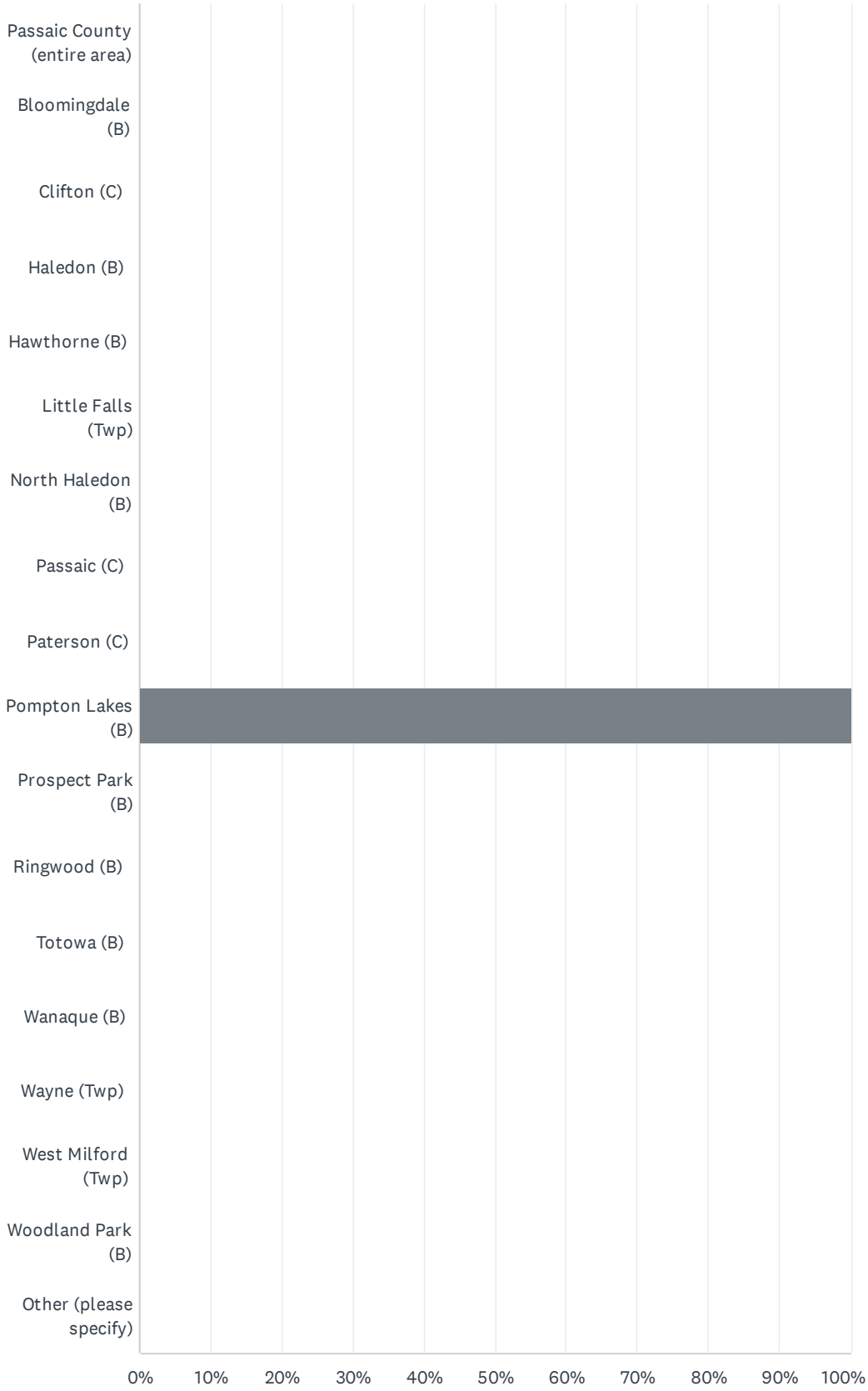
Q4 Based on the above category, please provide additional description and information as to what your organization does or offers (please explain)

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	K-12 school district	6/6/2024 1:32 PM

Q5 Please identify the location of your facility(ies) and/or primary service area. You may choose more than one if your service area covers multiple communities, or “Passaic County (entire area)” if your service area is county-wide:

Answered: 1 Skipped: 0

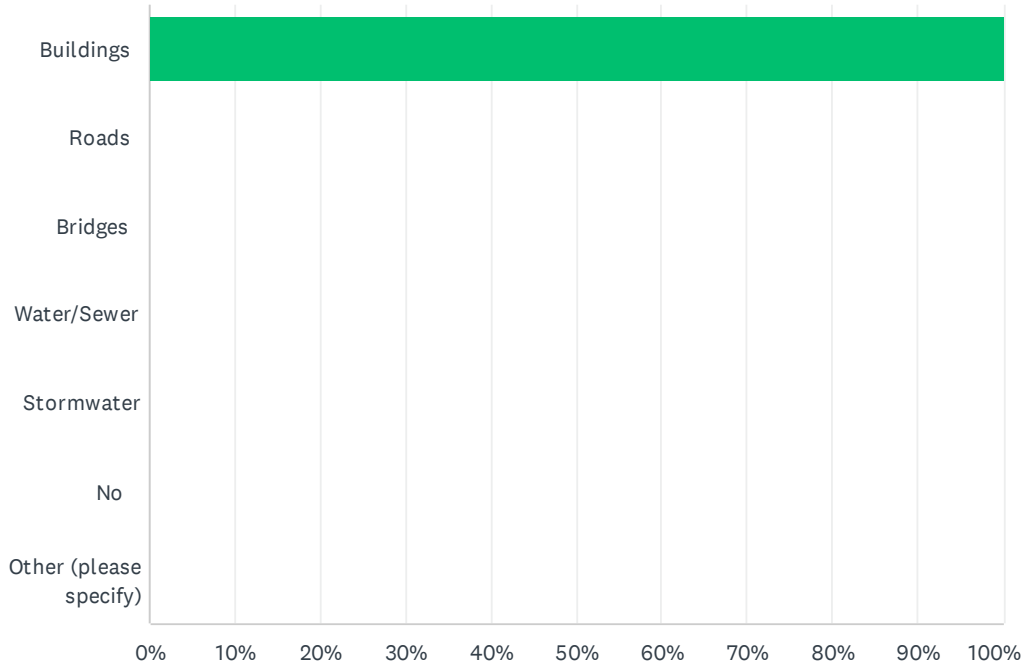

Passaic County (entire area)
Bloomingdale (B)
Clifton (C)
Haledon (B)
Hawthorne (B)
Little Falls (Twp)
North Haledon (B)
Passaic (C)
Paterson (C)
Pompton Lakes (B)
Prospect Park (B)
Ringwood (B)
Totowa (B)
Wanaque (B)
Wayne (Twp)
West Milford (Twp)
Woodland Park (B)
Other (please specify)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
Passaic County (entire area)	0.00%	0
Bloomingdale (B)	0.00%	0
Clifton (C)	0.00%	0
Haledon (B)	0.00%	0
Hawthorne (B)	0.00%	0
Little Falls (Twp)	0.00%	0
North Haledon (B)	0.00%	0
Passaic (C)	0.00%	0
Paterson (C)	0.00%	0
Pompton Lakes (B)	100.00%	1
Prospect Park (B)	0.00%	0
Ringwood (B)	0.00%	0
Totowa (B)	0.00%	0
Wanaque (B)	0.00%	0
Wayne (Twp)	0.00%	0
West Milford (Twp)	0.00%	0
Woodland Park (B)	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q6 Does your organization maintain or manage any of the following within your designated service area? If not, answer “No” at the bottom, otherwise check all that apply.

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Buildings	100.00%	1
Roads	0.00%	0
Bridges	0.00%	0
Water/Sewer	0.00%	0
Stormwater	0.00%	0
No	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q7 Does your organization work with or help support socially vulnerable populations that may be at higher risk for hazard impacts? Socially vulnerable populations may be considered "socially vulnerable" because of a variety of factors like socioeconomic status, household composition, minority status, limited proficiency to read or speak English, housing type, and transportation.

Answered: 0 Skipped: 1

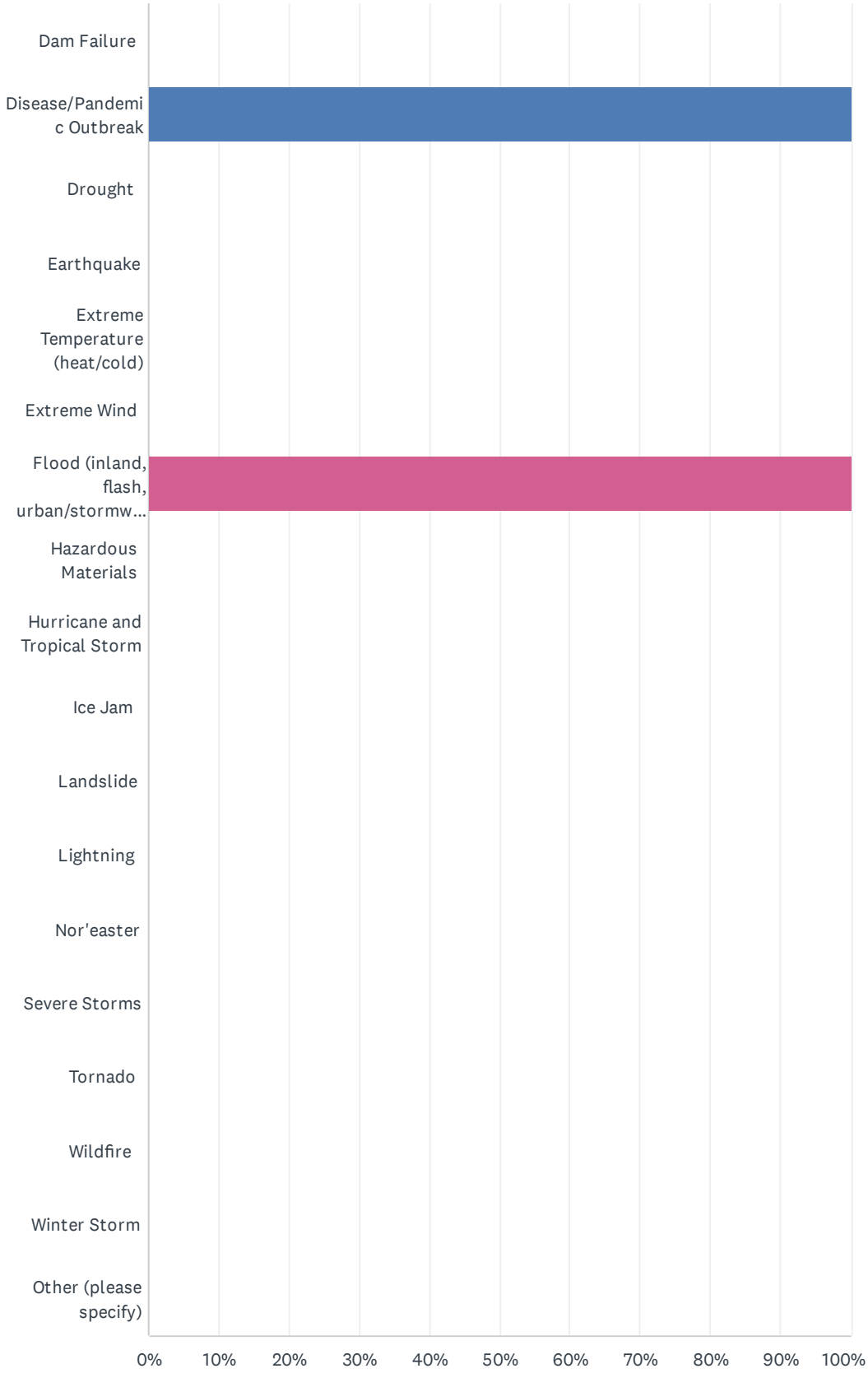
⚠ No matching responses.

ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
TOTAL		0

#	IF YOU ANSWERED YES, PLEASE DESCRIBE HOW YOUR ORGANIZATION WORKS WITH OR SUPPORTS SOCIALLY VULNERABLE POPULATIONS.	DATE
1	Yes, we help to coordinate services for our students and families who might be socially vulnerable.	6/6/2024 1:32 PM

Q8 For which hazard(s) do you feel that you or your organization have a special interest and/or expertise? Check all that apply.

Answered: 1 Skipped: 0

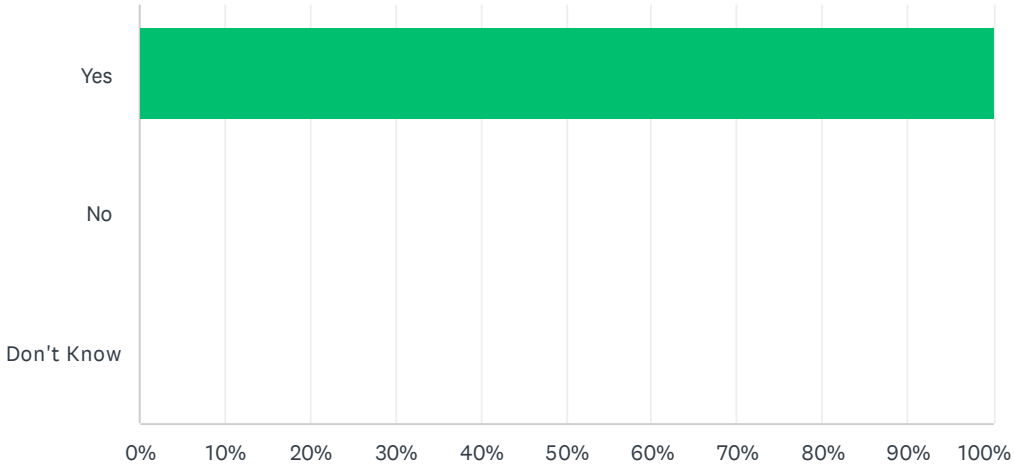

Dam Failure
Disease/Pandemic Outbreak
Drought
Earthquake
Extreme Temperature (heat/cold)
Extreme Wind
Flood (inland, flash, urban/stormw...
Hazardous Materials
Hurricane and Tropical Storm
Ice Jam
Landslide
Lightning
Nor'easter
Severe Storms
Tornado
Wildfire
Winter Storm
Other (please specify)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
Dam Failure	0.00%	0
Disease/Pandemic Outbreak	100.00%	1
Drought	0.00%	0
Earthquake	0.00%	0
Extreme Temperature (heat/cold)	0.00%	0
Extreme Wind	0.00%	0
Flood (inland, flash, urban/stormwater)	100.00%	1
Hazardous Materials	0.00%	0
Hurricane and Tropical Storm	0.00%	0
Ice Jam	0.00%	0
Landslide	0.00%	0
Lightning	0.00%	0
Nor'easter	0.00%	0
Severe Storms	0.00%	0
Tornado	0.00%	0
Wildfire	0.00%	0
Winter Storm	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q9 Looking back at previous hazard events, have buildings/facilities/structures you have worked in and/or are responsible for been impacted by a hazard (ex. damage/closures/etc.)?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
TOTAL		1

Q10 If you answered “Yes” to the above question, please describe the event that caused or is causing (if recurring) damage and loss of service/property. If quantifiable data is available, please provide that as well (number of damaged structures, monetary loss, etc.) (please explain)

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	Our one elementary school flooded in 2011 with Hurricane Irene. We have lost power at our schools from storms.	6/6/2024 1:33 PM

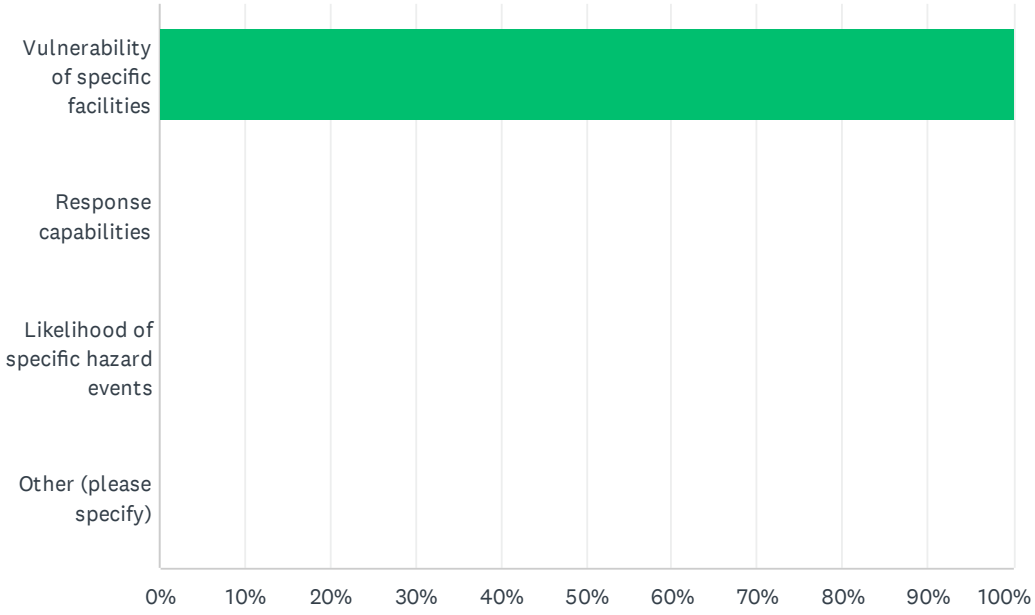
Q11 Looking at where your facilities or services are located in Passaic County, what areas do you believe to be the most vulnerable to hazards? What are these hazards? (please explain).

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	Flooding	6/6/2024 1:33 PM

Q12 What are your agency's primary concerns regarding hazards?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Vulnerability of specific facilities	100.00%	1
Response capabilities	0.00%	0
Likelihood of specific hazard events	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

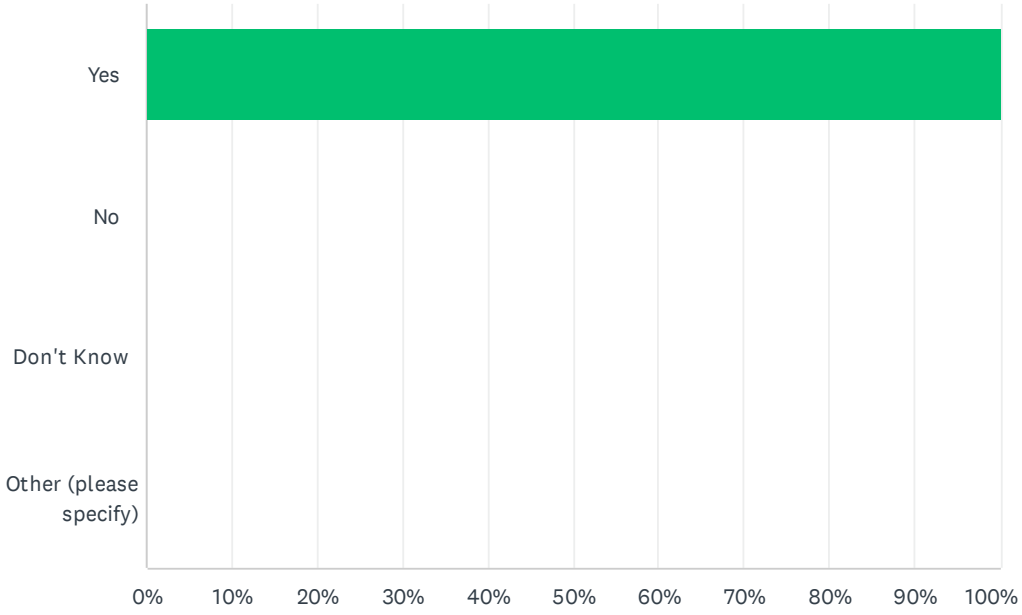
Q13 What challenges or barriers to reducing vulnerability in Passaic County do you see?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q14 Does your agency own or lease facilities?

Answered: 1 Skipped: 0

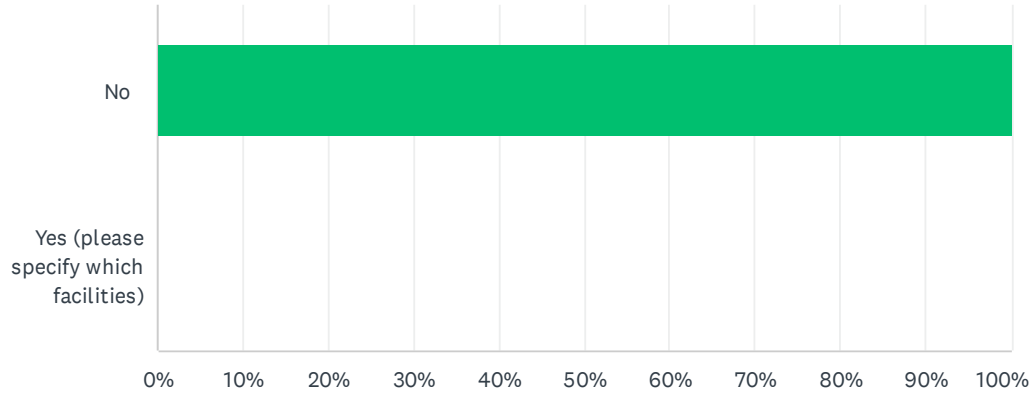


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
Other (please specify)	0.00%	0
TOTAL		1

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q15 Of those facilities that your agency owns or leases, are any viewed as critical facilities or community lifelines?

Answered: 1 Skipped: 0

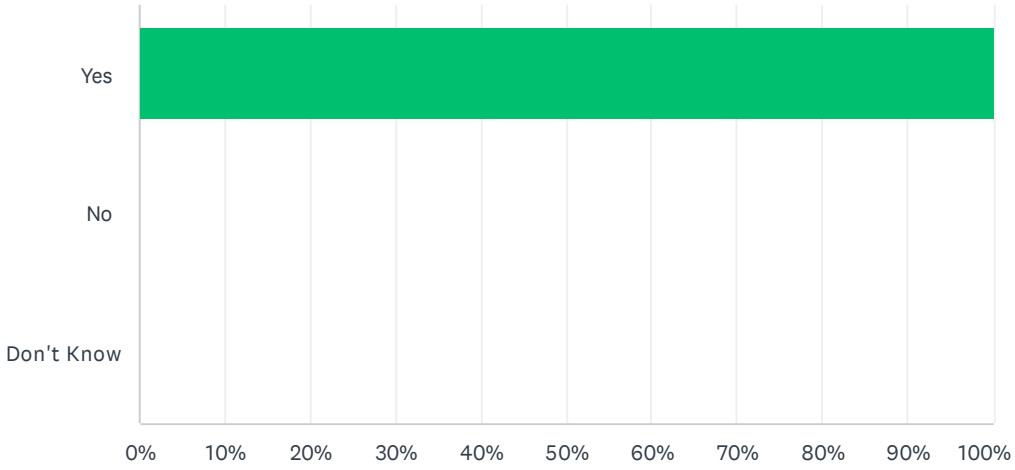


ANSWER CHOICES	RESPONSES	
No	100.00%	1
Yes (please specify which facilities)	0.00%	0
TOTAL		1

#	YES (PLEASE SPECIFY WHICH FACILITIES)	DATE
	There are no responses.	

Q16 Are your facilities susceptible to impacts from hazards, such as your fire department being in a flood prone area?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
TOTAL		1

#	IF YES, PLEASE SPECIFY THE FACILITIES AND DAMAGES SUSTAINED.	DATE
1	Our athletic fields (Hershfield Park) and Lincoln Elementary School	6/6/2024 1:33 PM

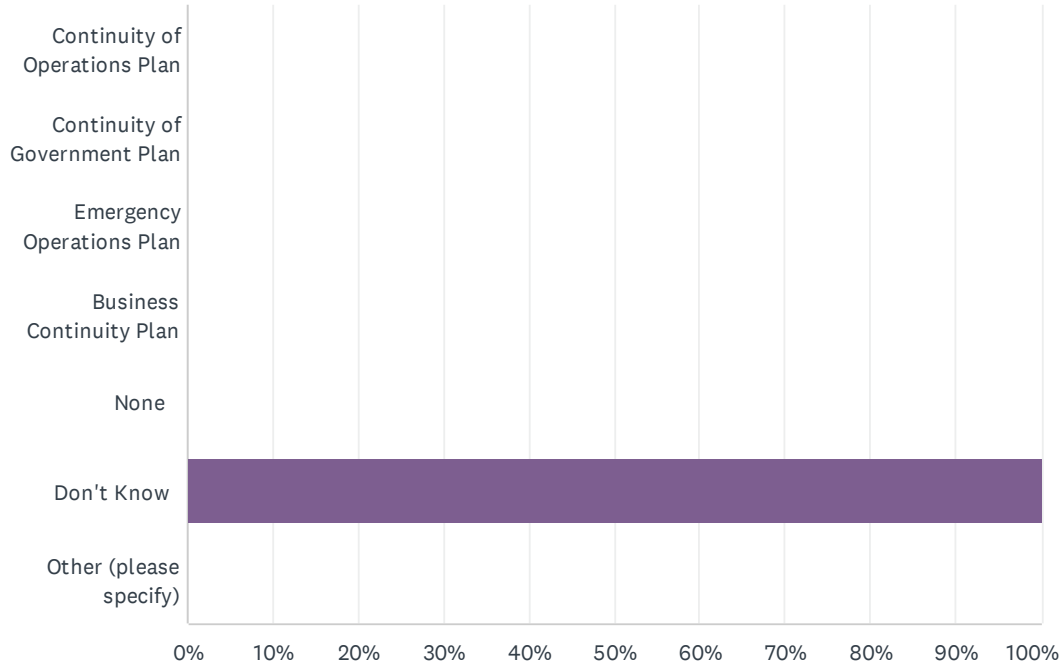
Q17 What support does your organization need from Passaic County to help reduce vulnerabilities to your facilities?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q18 Is your organization covered by any of the following plans? Check all that apply

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Continuity of Operations Plan	0.00%	0
Continuity of Government Plan	0.00%	0
Emergency Operations Plan	0.00%	0
Business Continuity Plan	0.00%	0
None	0.00%	0
Don't Know	100.00%	1
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q19 What capabilities does your agency have to help address hazards?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

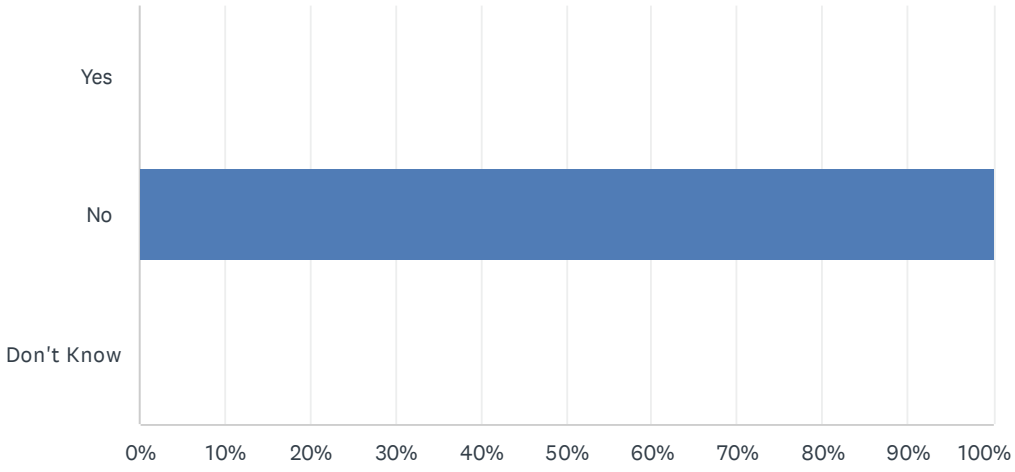
Q20 What plans or studies has your agency developed that relate to hazards, the climate, new or existing facilities, vulnerable populations, or other areas related to hazard mitigation?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q21 Is your agency currently involved in conducting any studies or developing any programs which would further support Passaic County's hazard mitigation program? Studies can include hazard-specific information, data gathering which supports risk assessments, including economic data, or statistical data of other types.

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
Don't Know	0.00%	0
TOTAL		1

#	IF YES, PLEASE BRIEFLY DESCRIBE THE TYPE OF STUDY UNDERWAY, AND LIST THE ANTICIPATED YEAR OF COMPLETION.	DATE
	There are no responses.	

Q22 Please list any projects or programs that you have recently implemented that you believe will reduce your facility's/organization's vulnerability, damage, and losses (including loss of operation/service) due to hazard events.

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q23 Does your agency currently have any mitigation projects or activities underway? If so, please describe.

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

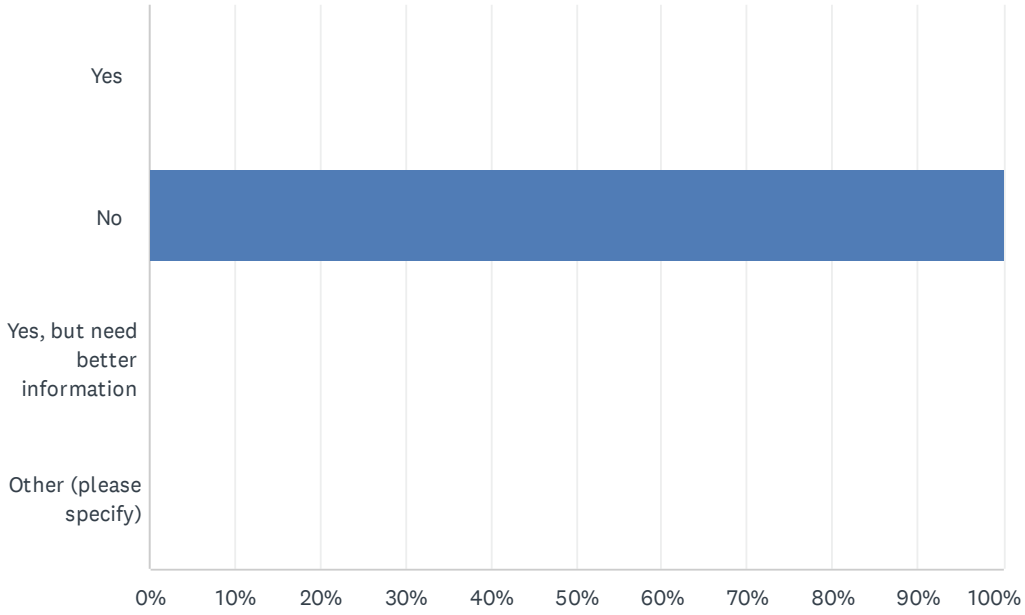
Q24 Please provide a list of any new projects or programs that your facility or organization would like to complete in order to reduce your vulnerability to damages and losses, including loss of operation/service, to hazard events.

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q25 Are you aware of the number and location of vulnerable populations in your community/operating area?

Answered: 1 Skipped: 0

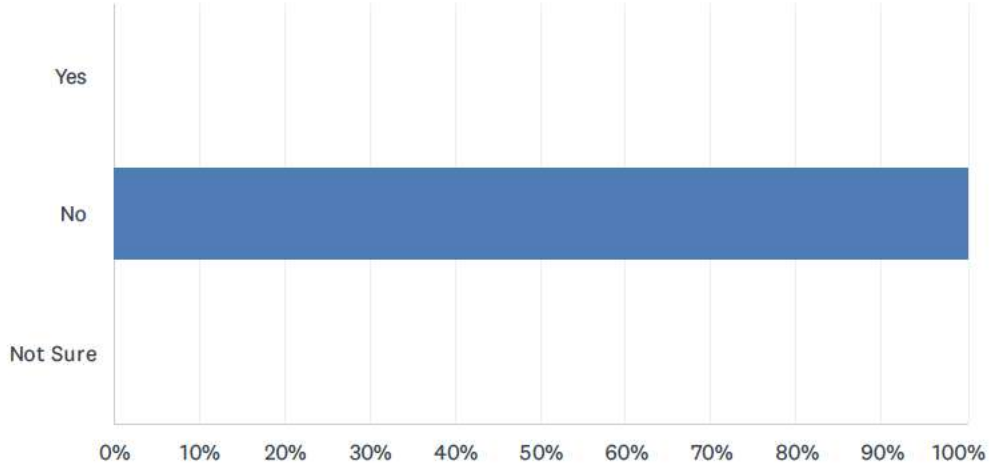


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
Yes, but need better information	0.00%	0
Other (please specify)	0.00%	0
TOTAL		1

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q26 Does your agency provide assistance to any socially vulnerable or underserved populations in Passaic County?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
Not Sure	0.00%	0
TOTAL		1

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q27 If yes, what types of services do you provide?

Answered: 0 Skipped: 1

⚠ No matching responses.

ANSWER CHOICES	RESPONSES	
Establishing Personal Services	0.00%	0
Funding/Financial	0.00%	0
Human Rights	0.00%	0
Regulatory Oversight	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 0		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

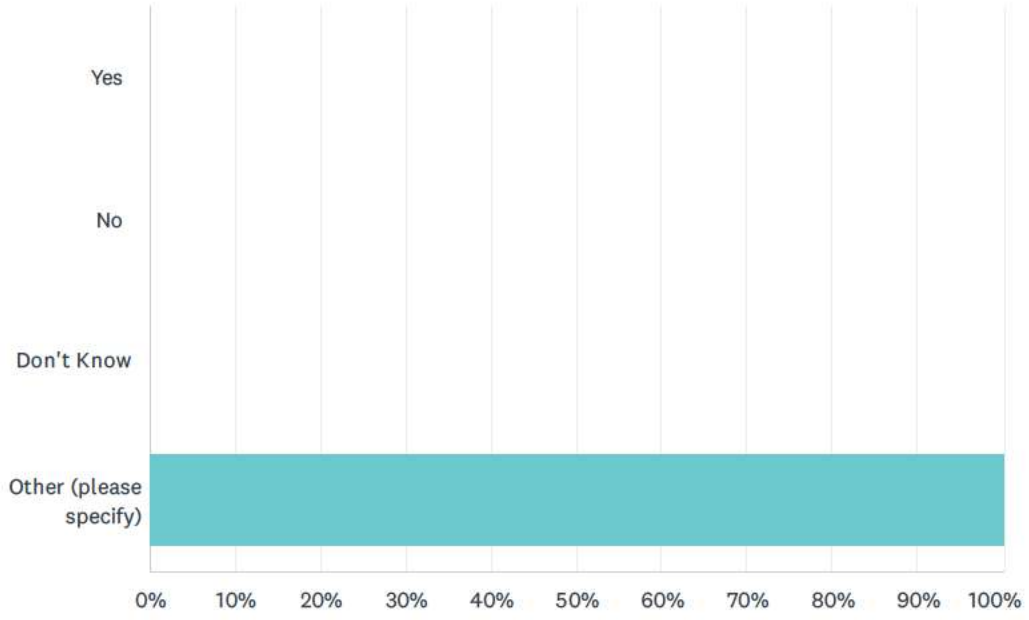
Q28 Please provide a list of the populations or communities served by your agency.

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q29 Do you provide these services during times of disaster?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
Don't Know	0.00%	0
Other (please specify)	100.00%	1
TOTAL		1

#	OTHER (PLEASE SPECIFY)	DATE
1	Our middle school is an alternate shelter for the community.	6/6/2024 1:57 PM

Q30 What barriers and community characteristics exist within Passaic County that may create additional vulnerabilities to hazards? This may include but is not limited to access to transportation, broadband access, economic disadvantages, physical health (chronic diseases), limited physical mobility, age (older adults and children), and rural communities.

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q31 Do you have any questions or comments for Passaic County?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

Q1 Contact Information

Answered: 3 Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	100.00%	3
Department/Agency	100.00%	3
Address	0.00%	0
Address 2	0.00%	0
City/Town	100.00%	3
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	3
Phone Number	100.00%	3

#	NAME	DATE
1		6/11/2024 12:03 PM
2		6/8/2024 6:47 AM
3		6/6/2024 1:29 PM

#	DEPARTMENT/AGENCY	DATE
1	OEM	6/11/2024 12:03 PM
2	Township of Mahwah OEM	6/8/2024 6:47 AM
3	Ramsey OEM	6/6/2024 1:29 PM

#	ADDRESS	DATE
	There are no responses.	

#	ADDRESS 2	DATE
	There are no responses.	

#	CITY/TOWN	DATE
1	Pequannock	6/11/2024 12:03 PM
2	Mahwah	6/8/2024 6:47 AM
3	Ramsey, NJ	6/6/2024 1:29 PM

#	STATE/PROVINCE	DATE
	There are no responses.	

#	ZIP/POSTAL CODE	DATE
	There are no responses.	

#	COUNTRY	DATE

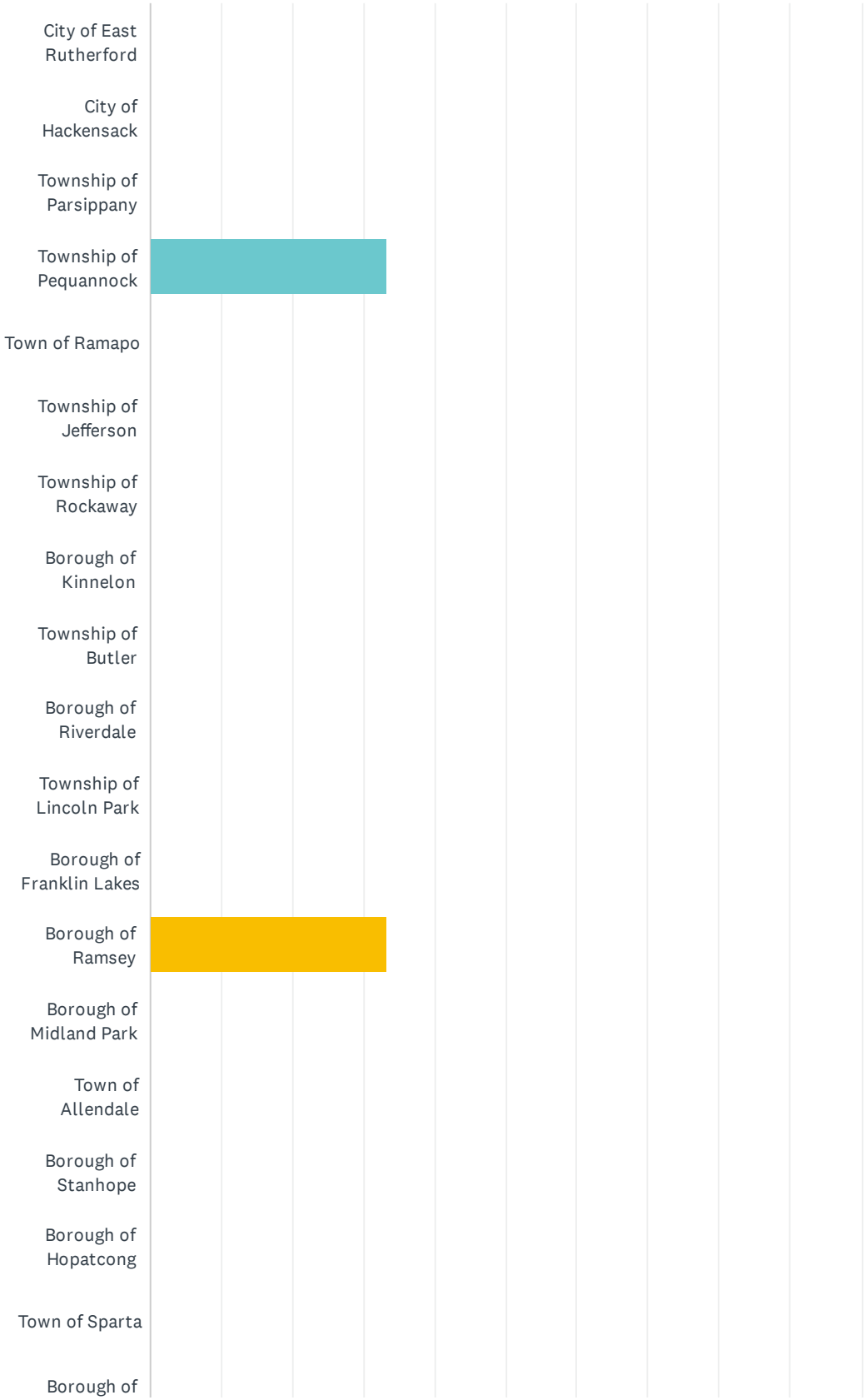
There are no responses.

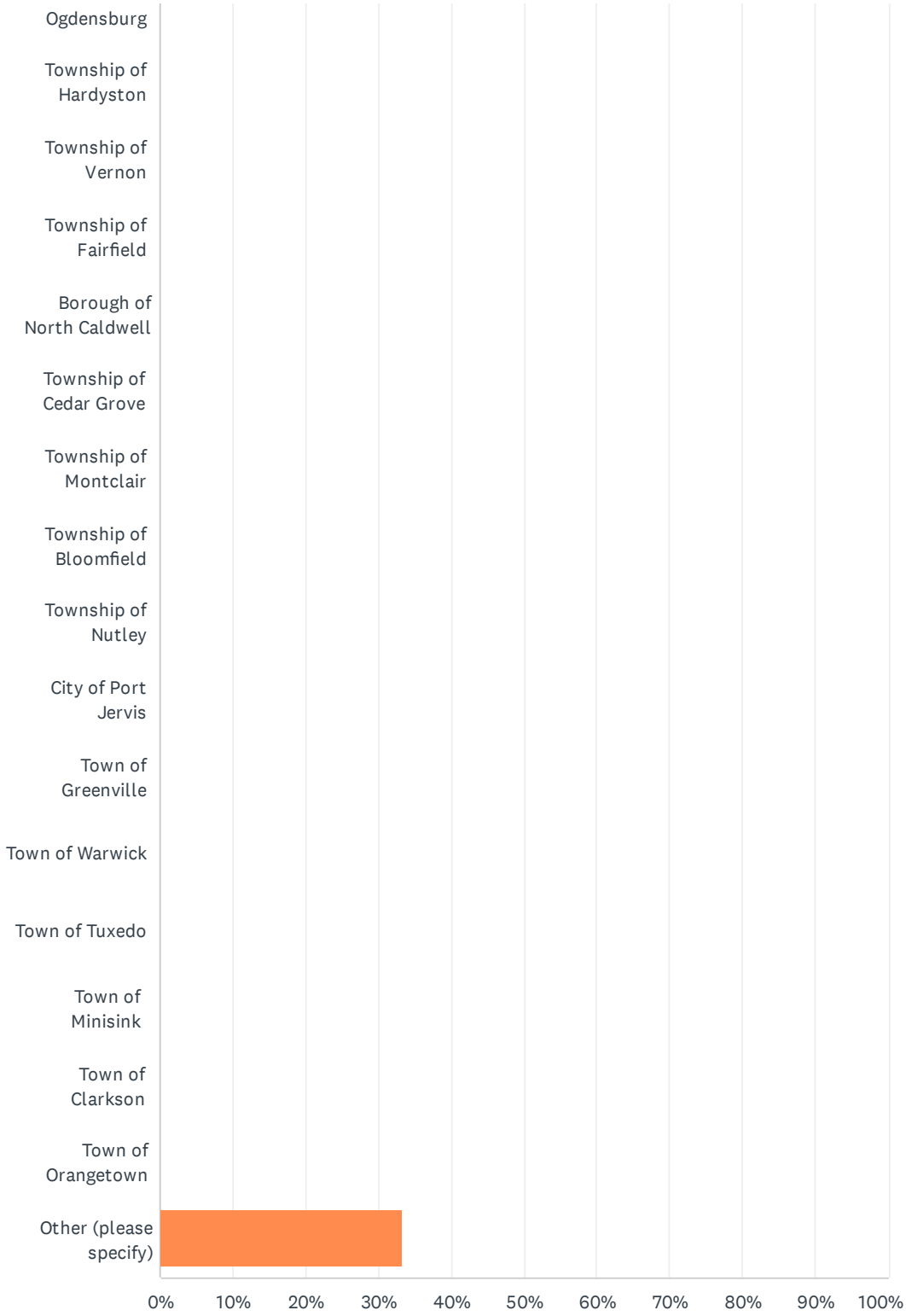
#	EMAIL ADDRESS	DATE
1		6/11/2024 12:03 PM
2		6/8/2024 6:47 AM
3		6/6/2024 1:29 PM

#	PHONE NUMBER	DATE
1		6/11/2024 12:03 PM
2		6/8/2024 6:47 AM
3		6/6/2024 1:29 PM

Q2 Please indicate the community in which you represent

Answered: 3 Skipped: 0




Ogdensburg
Township of Hardyston
Township of Vernon
Township of Fairfield
Borough of North Caldwell
Township of Cedar Grove
Township of Montclair
Township of Bloomfield
Township of Nutley
City of Port Jervis
Town of Greenville
Town of Warwick
Town of Tuxedo
Town of Minisink
Town of Clarkson
Town of Orangetown
Other (please specify)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
City of East Rutherford	0.00%	0
City of Hackensack	0.00%	0
Township of Parsippany	0.00%	0
Township of Pequannock	33.33%	1
Town of Ramapo	0.00%	0
Township of Jefferson	0.00%	0
Township of Rockaway	0.00%	0
Borough of Kinnelon	0.00%	0
Township of Butler	0.00%	0
Borough of Riverdale	0.00%	0
Township of Lincoln Park	0.00%	0
Borough of Franklin Lakes	0.00%	0
Borough of Ramsey	33.33%	1
Borough of Midland Park	0.00%	0
Town of Allendale	0.00%	0
Borough of Stanhope	0.00%	0
Borough of Hopatcong	0.00%	0
Town of Sparta	0.00%	0
Borough of Ogdensburg	0.00%	0
Township of Hardyston	0.00%	0
Township of Vernon	0.00%	0
Township of Fairfield	0.00%	0
Borough of North Caldwell	0.00%	0
Township of Cedar Grove	0.00%	0
Township of Montclair	0.00%	0
Township of Bloomfield	0.00%	0
Township of Nutley	0.00%	0
City of Port Jervis	0.00%	0
Town of Greenville	0.00%	0
Town of Warwick	0.00%	0
Town of Tuxedo	0.00%	0
Town of Minisink	0.00%	0

Town of Clarkson	0.00%	0
Town of Orangetown	0.00%	0
Other (please specify)	33.33%	1
TOTAL		3

#	OTHER (PLEASE SPECIFY)	DATE
1	Township of Mahwah	6/8/2024 6:47 AM

Q3 Do you have any shared service agreements or mutual aid agreements in place with Passaic County or any Passaic municipalities for the following?

Answered: 0 Skipped: 3

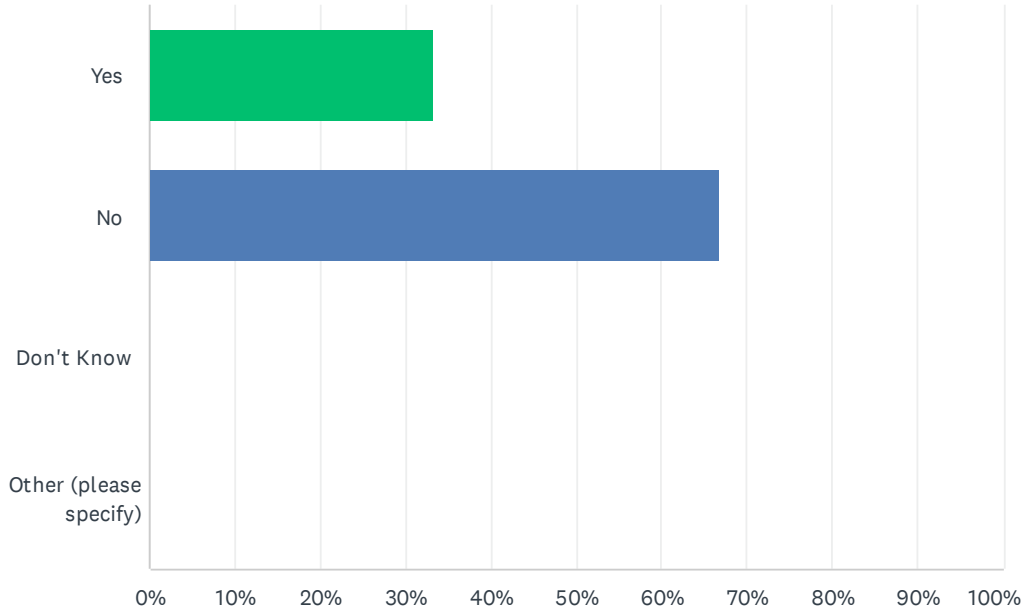
⚠ No matching responses.

ANSWER CHOICES	RESPONSES	
Equipment and staff for debris cleanup and removal	0.00%	0
Emergency staff for evacuations/disaster response	0.00%	0
Damage assessments	0.00%	0
Sheltering	0.00%	0
Other	0.00%	0
If you checked any of the above, please explain.	0.00%	0
Total Respondents: 0		

#	IF YOU CHECKED ANY OF THE ABOVE, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q4 Do you include Passaic County or any Passaic municipalities in your comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

Answered: 3 Skipped: 0

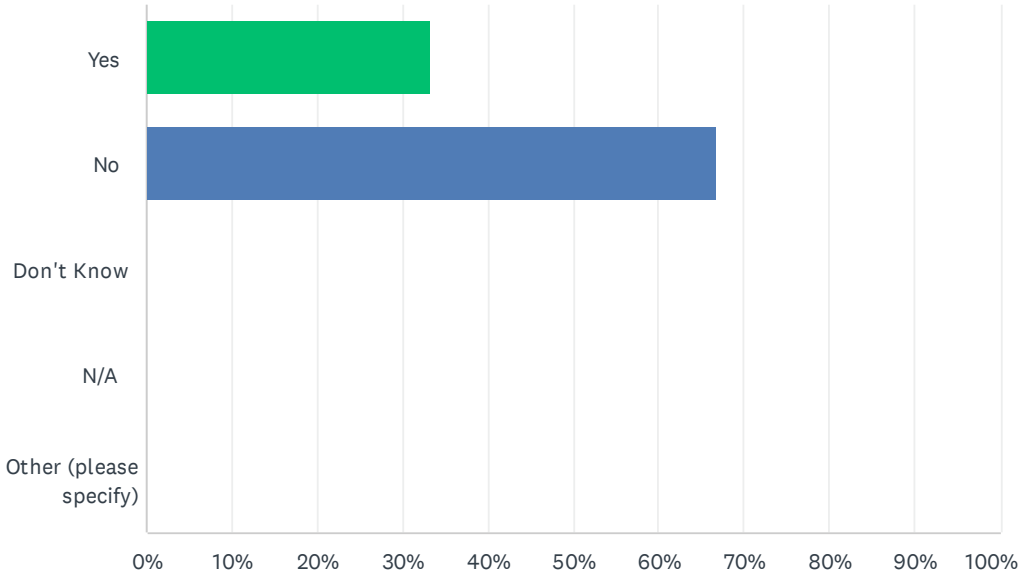


ANSWER CHOICES	RESPONSES	
Yes	33.33%	1
No	66.67%	2
Don't Know	0.00%	0
Other (please specify)	0.00%	0
TOTAL		3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q5 Do you participate in Passaic County's comprehensive emergency operations planning, such as by participating on a planning team, or providing resources during an emergency?

Answered: 3 Skipped: 0

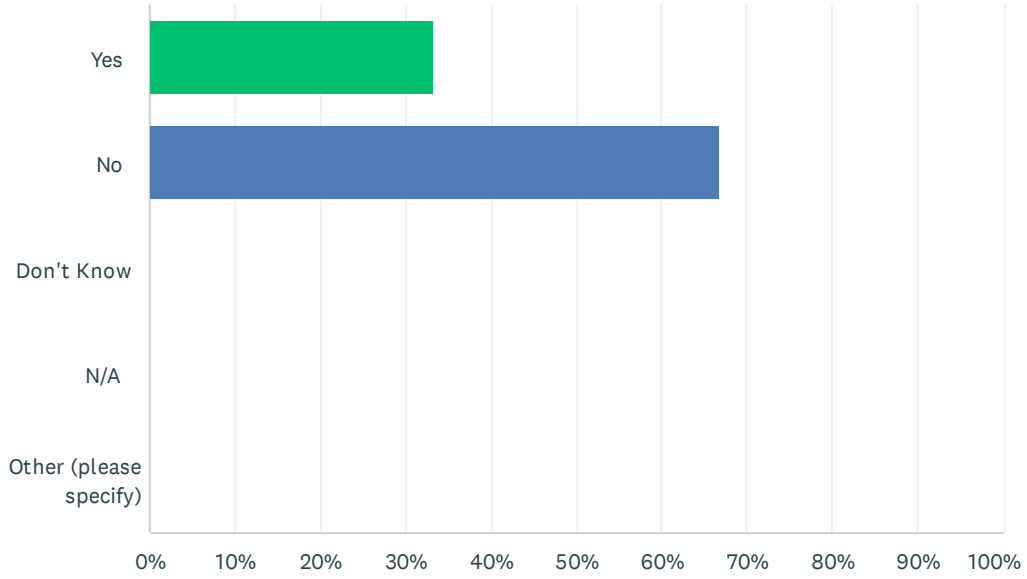


ANSWER CHOICES	RESPONSES	
Yes	33.33%	1
No	66.67%	2
Don't Know	0.00%	0
N/A	0.00%	0
Other (please specify)	0.00%	0
TOTAL		3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q6 Do you include Passaic County or any Passaic municipalities in your Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of your community's essential functions for a period of time?

Answered: 3 Skipped: 0

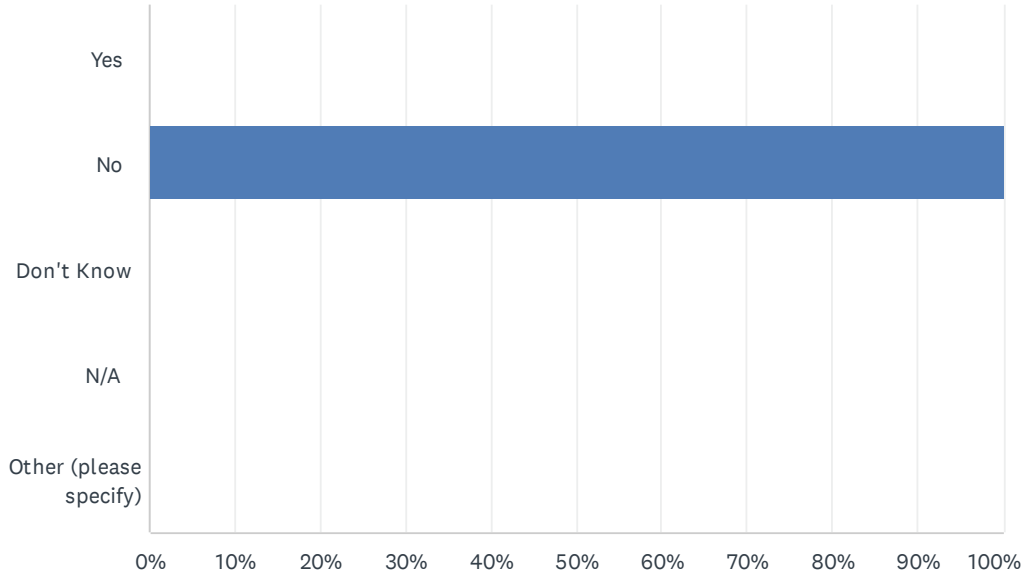


ANSWER CHOICES	RESPONSES	
Yes	33.33%	1
No	66.67%	2
Don't Know	0.00%	0
N/A	0.00%	0
Other (please specify)	0.00%	0
TOTAL		3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q7 Do you participate in Passaic County or any Passaic municipality's Continuity of Operations planning, such as by participating on a planning team, providing resources during an emergency, or carrying out some of Seneca County's essential functions for a period of time?

Answered: 3 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	3
Don't Know	0.00%	0
N/A	0.00%	0
Other (please specify)	0.00%	0
TOTAL		3

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

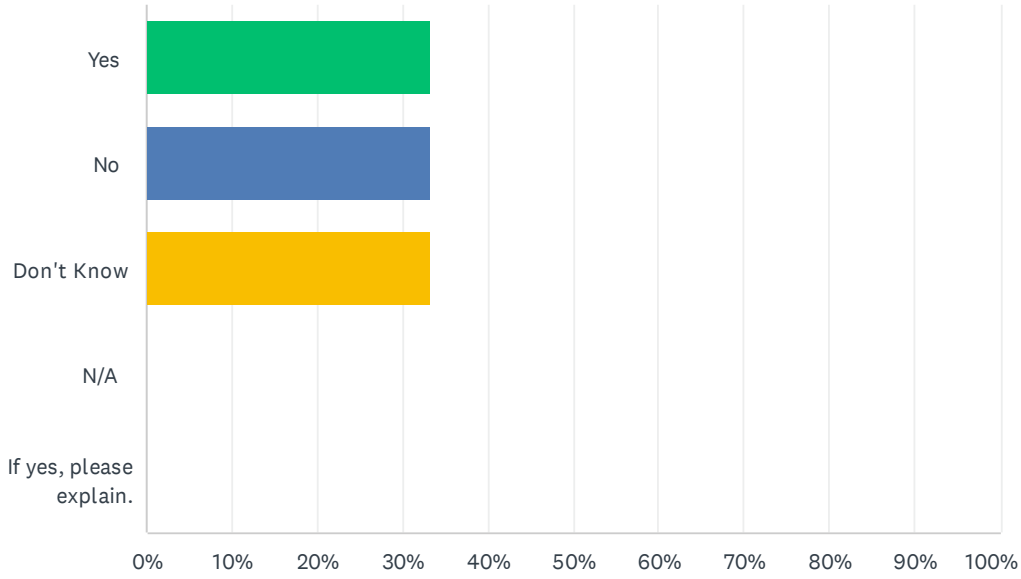
Q8 Thinking about emergency operations and disaster response, please explain how these actions are communicated between your staff and Passaic County.

Answered: 1 Skipped: 2

#	RESPONSES	DATE
1	We are in constant communication with Morris county OEM , Pompton Lakes OEM Via cell phone or emails, or portable radio.	6/11/2024 12:08 PM

Q9 Do your emergency officials have access to contact information for Passaic County's emergency operation center?

Answered: 3 Skipped: 0

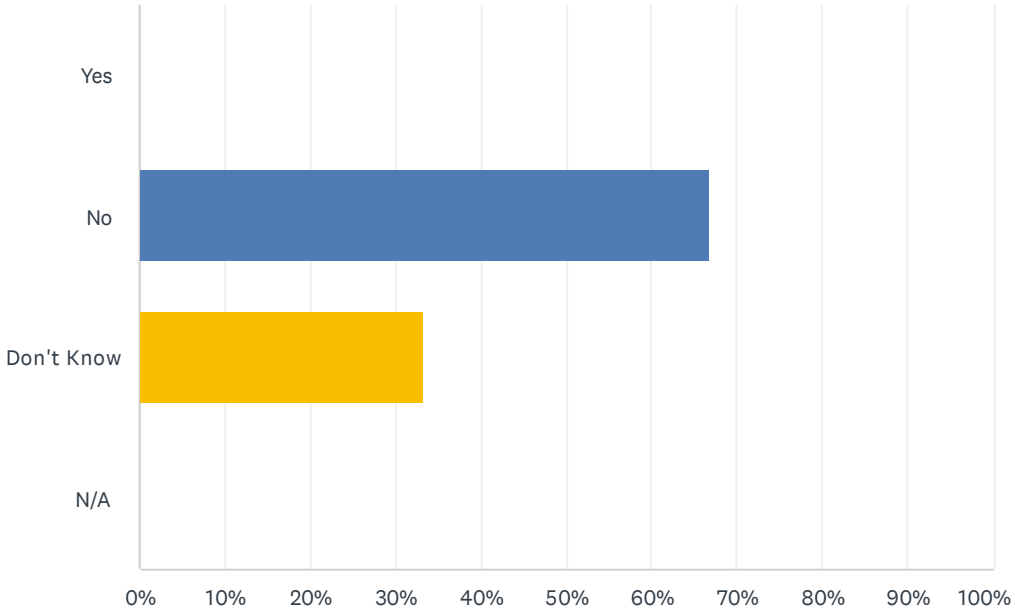


ANSWER CHOICES	RESPONSES	
Yes	33.33%	1
No	33.33%	1
Don't Know	33.33%	1
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		3

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q10 Do you share risk and vulnerability assessments (e.g., flood mapping, GIS, Hazus, etc.) with Passaic County?

Answered: 3 Skipped: 0

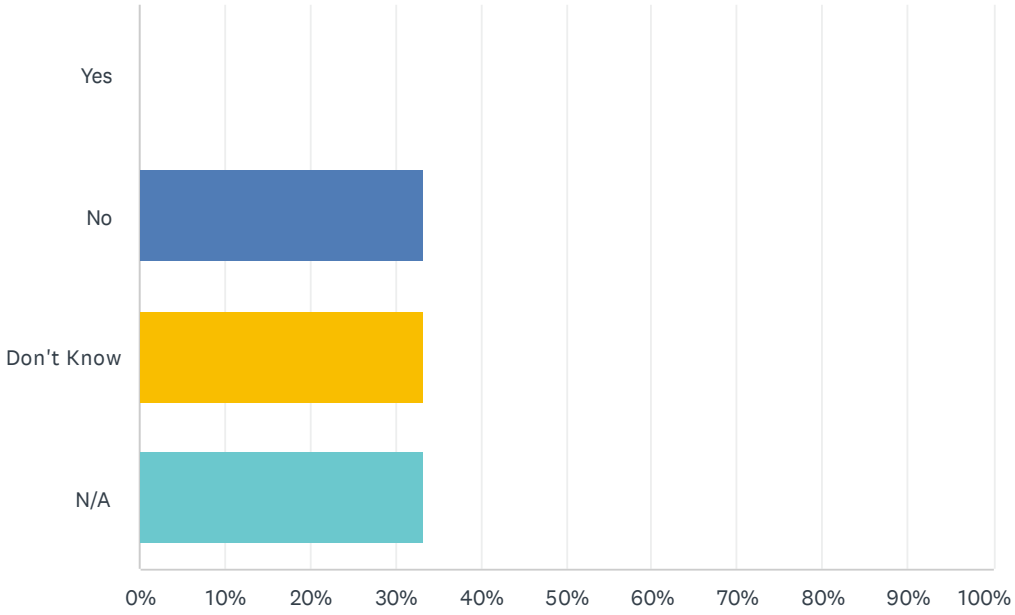


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	66.67%	2
Don't Know	33.33%	1
N/A	0.00%	0
TOTAL		3

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q11 Is information regarding mitigation shared during the planning and implementation phases of the projects?

Answered: 3 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	33.33%	1
Don't Know	33.33%	1
N/A	33.33%	1
TOTAL		3

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q12 Please describe any situations or hazards that are of concern to both your community and Passaic County. For example, would flooding along a particular waterway impact both jurisdictions, or are there any facilities or infrastructure that would affect both jurisdictions if it/they failed?

Answered: 1 Skipped: 2

#	RESPONSES	DATE
1	The Wanaque reservoir dam. Any impact of the Ramapo River. Any failure of the Pompton Lakes Dam or excessive overflow.	6/11/2024 12:13 PM

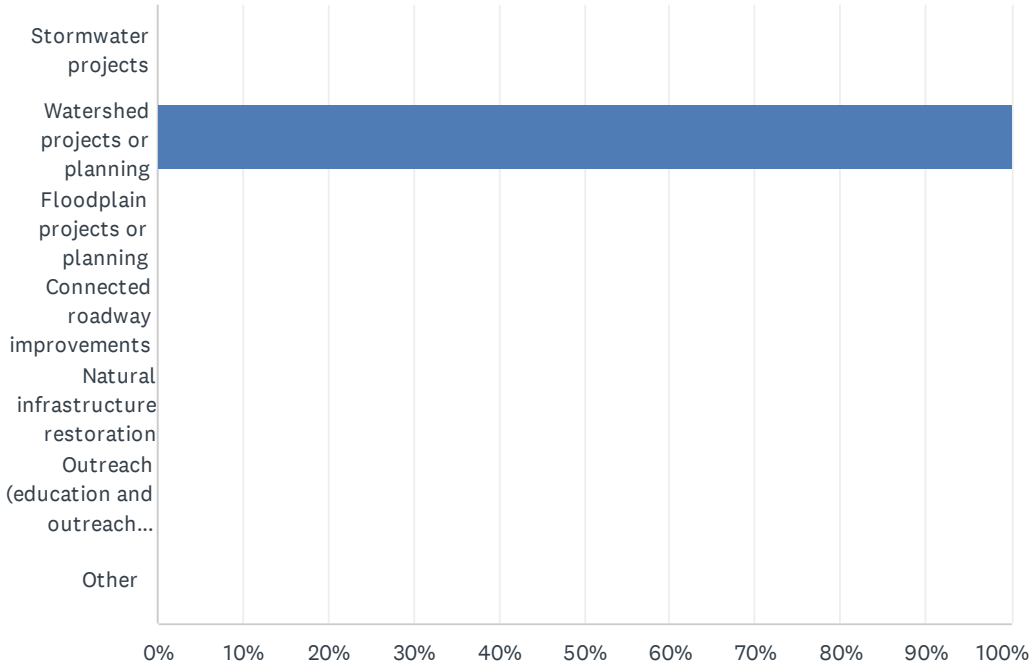
Q13 Please explain how information is shared between your jurisdiction and Passaic County and any Passaic municipalities regarding mitigation projects.

Answered: 0 Skipped: 3

#	RESPONSES	DATE
	There are no responses.	

Q14 Are you aware of any projects for the following that requires cross-collaboration between jurisdictional boundaries?

Answered: 1 Skipped: 2

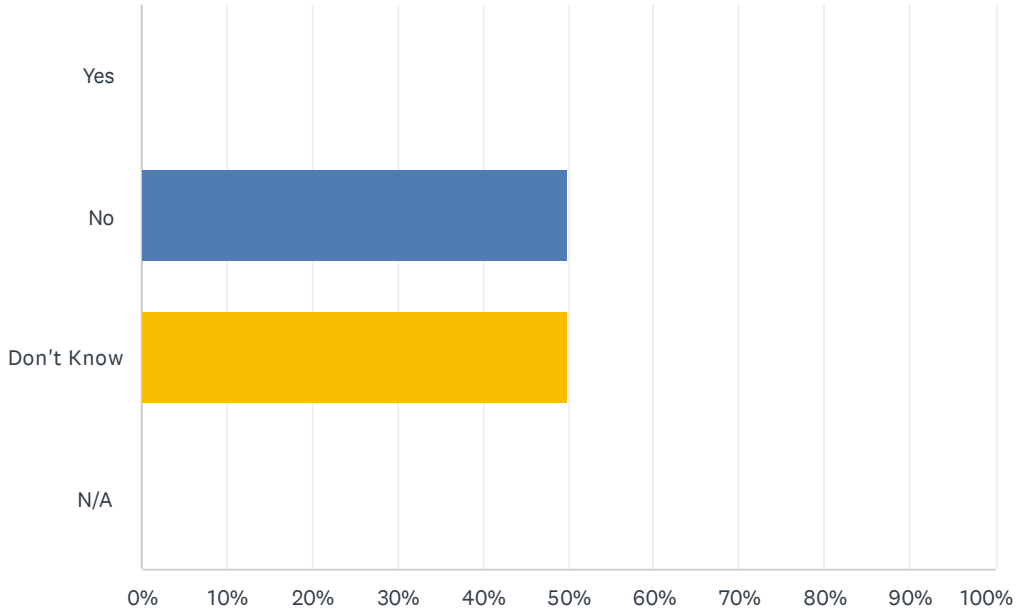


ANSWER CHOICES	RESPONSES	
Stormwater projects	0.00%	0
Watershed projects or planning	100.00%	1
Floodplain projects or planning	0.00%	0
Connected roadway improvements	0.00%	0
Natural infrastructure restoration	0.00%	0
Outreach (education and outreach campaigns, programs for public information, etc.)	0.00%	0
Other	0.00%	0
Total Respondents: 1		

#	IF YOU SELECTED ANYTHING ABOVE, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q15 Has your jurisdiction and Passaic County or any Passaic municipalities collaborated on grant applications?

Answered: 2 Skipped: 1

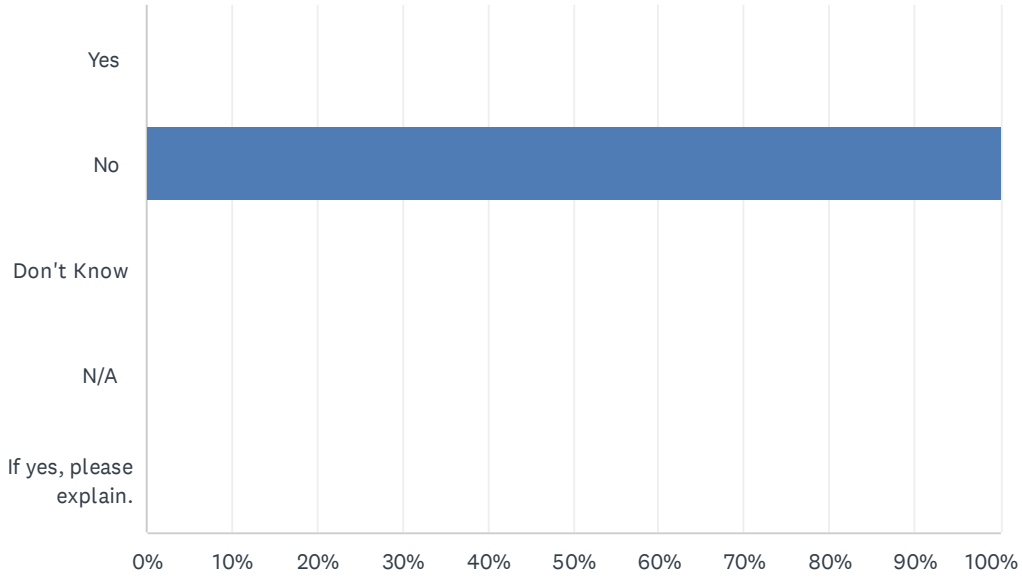


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	50.00%	1
N/A	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q16 Are you aware of any organizations that carry out education and outreach regarding hazards in both your community and Passaic County?

Answered: 2 Skipped: 1

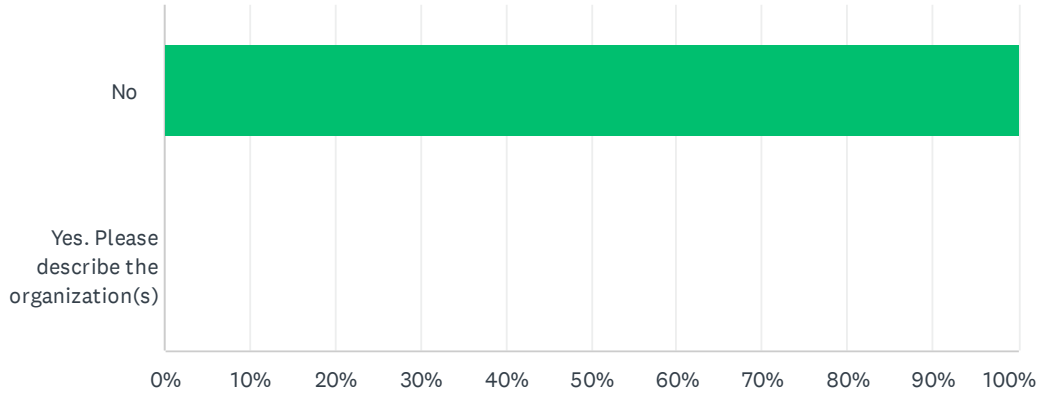


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	2
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q17 Are you aware of any organizations that support socially vulnerable or underserved populations in both your community and Passaic County?

Answered: 2 Skipped: 1



ANSWER CHOICES	RESPONSES	
No	100.00%	2
Yes. Please describe the organization(s)	0.00%	0
TOTAL		2

#	YES. PLEASE DESCRIBE THE ORGANIZATION(S)	DATE
	There are no responses.	

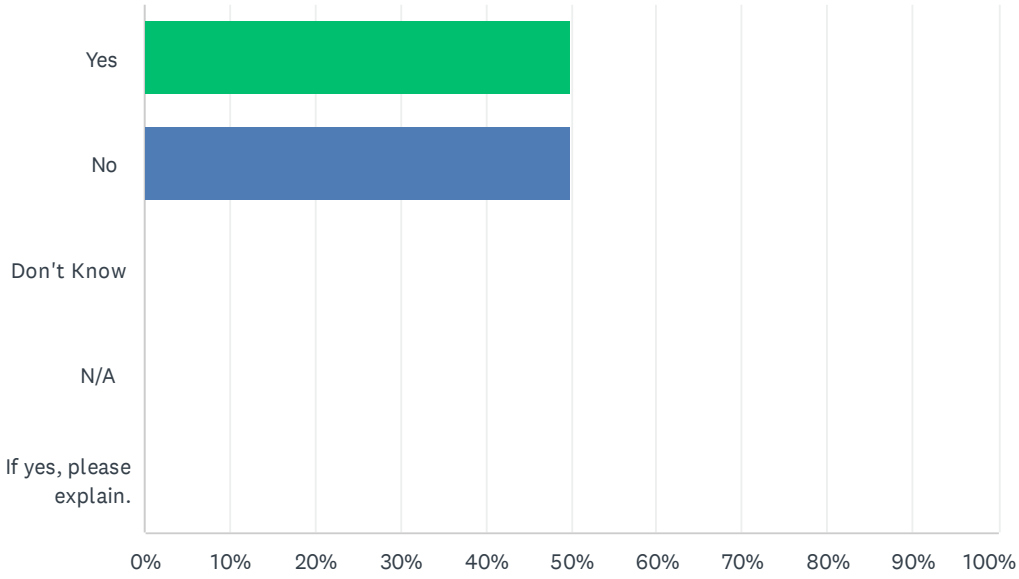
Q18 What are opportunities or ideas to optimize cooperation with Passaic County on emergency management operations and hazard mitigation projects?

Answered: 2 Skipped: 1

#	RESPONSES	DATE
1	More communication between the counties, OEM or possibly coordination from the state level	6/11/2024 12:16 PM
2	Contact Bergen County OEM	6/8/2024 6:54 AM

Q19 Do you collaborate with Passaic County or any Passaic municipalities on establishing evacuation routes and alternate evacuation routes?

Answered: 2 Skipped: 1

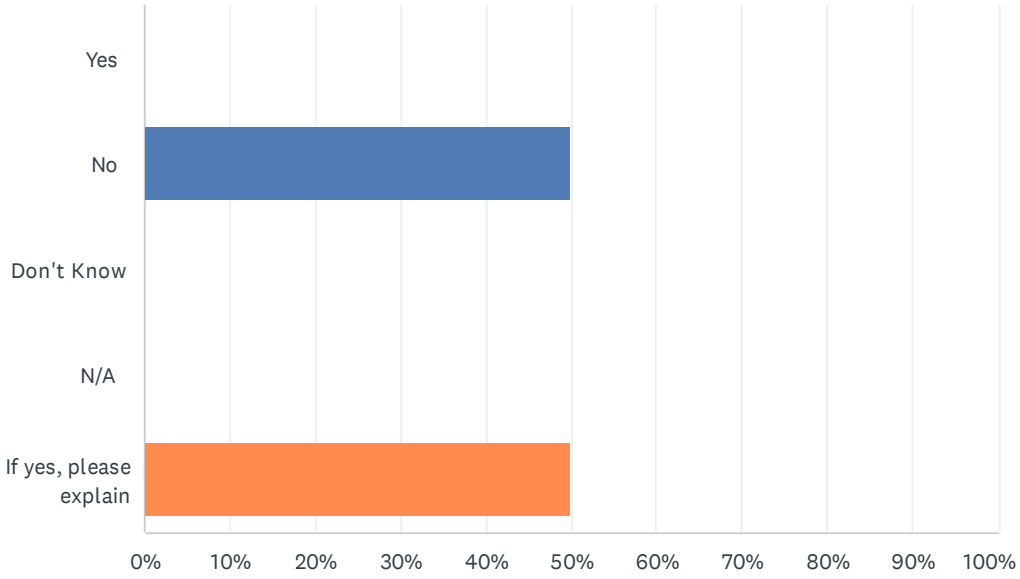


ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q20 Do you and Passaic County or any Passaic municipalities consult with one another before making evacuation decisions that would impact one another (recommending evacuation routes into neighboring jurisdictions)?

Answered: 2 Skipped: 1

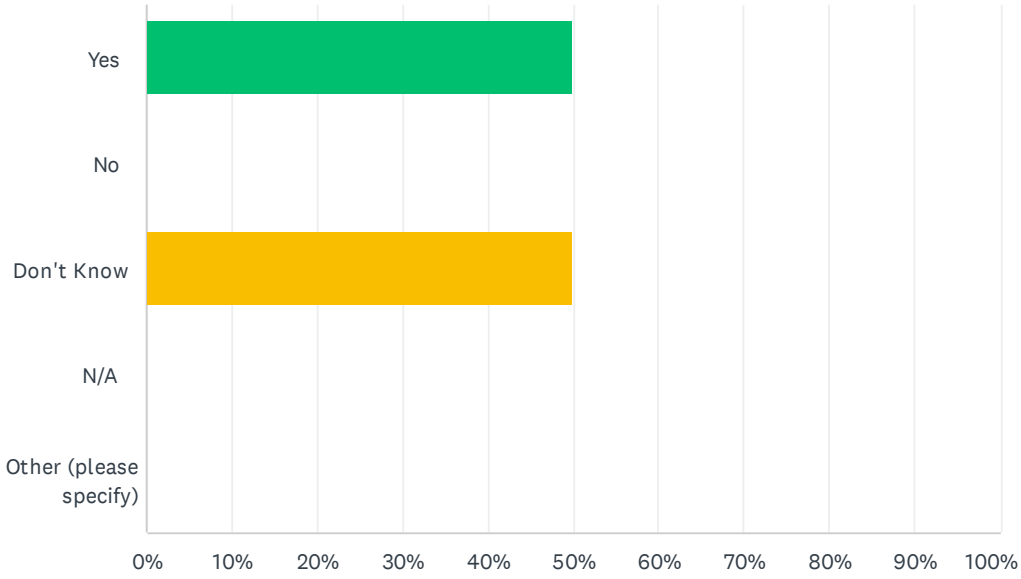


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	1
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain	50.00%	1
TOTAL		2

#	IF YES, PLEASE EXPLAIN	DATE
1	Police departments between our municipality and Wayne Township coordinate on state highway route 23 closures	6/11/2024 12:19 PM

Q21 Are evacuation routes maintained to the same level of protection across jurisdictional lines?

Answered: 2 Skipped: 1

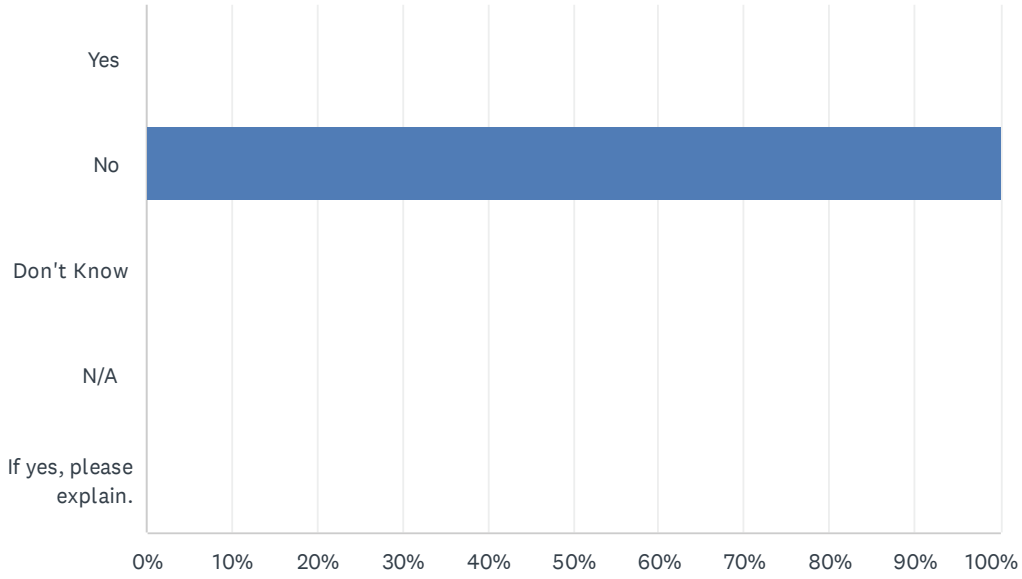


ANSWER CHOICES	RESPONSES	
Yes	50.00%	1
No	0.00%	0
Don't Know	50.00%	1
N/A	0.00%	0
Other (please specify)	0.00%	0
TOTAL		2

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q22 Do you collaborate with Passaic County or any Passaic municipalities on establishing shelters?

Answered: 2 Skipped: 1

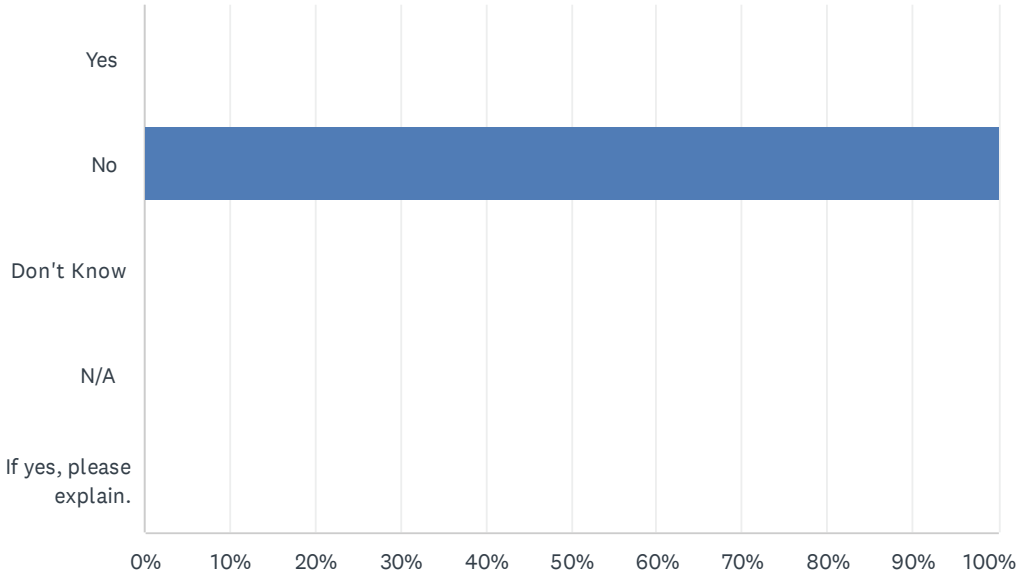


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	2
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q23 Do you and Passaic County or any Passaic municipalities consult with one another before making sheltering decisions that would impact one another (recommending shelters in neighboring communities)?

Answered: 2 Skipped: 1

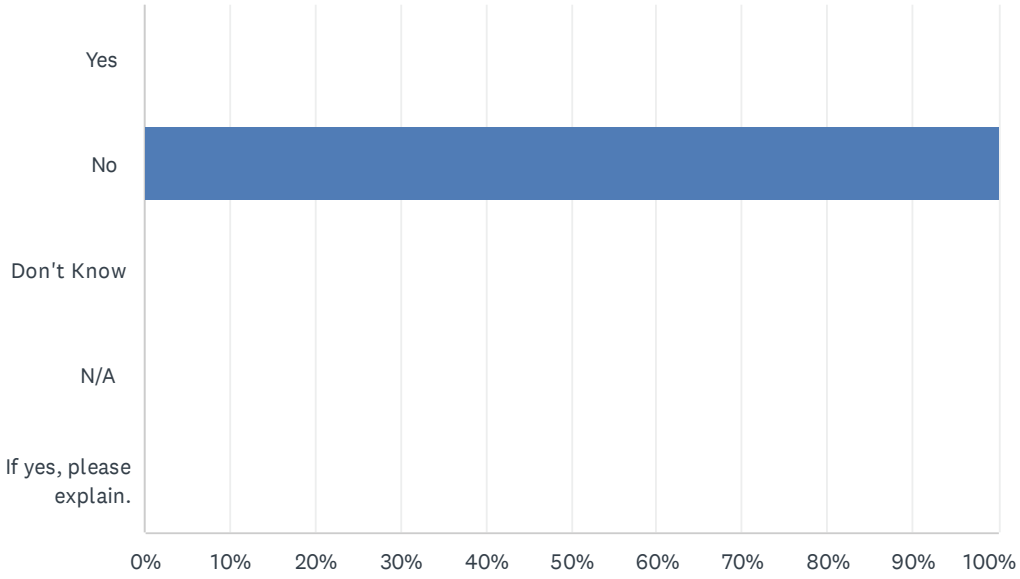


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	2
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q24 Do you and Passaic County share any spaces suitable for temporary housing? This includes locations suitable to place temporary housing units to house residents displaced by a disaster.

Answered: 2 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	2
Don't Know	0.00%	0
N/A	0.00%	0
If yes, please explain.	0.00%	0
TOTAL		2

#	IF YES, PLEASE EXPLAIN.	DATE
	There are no responses.	

Q25 Do you have any relevant questions or comments for Passaic County?

Answered: 0 Skipped: 3

#	RESPONSES	DATE
	There are no responses.	

APPENDIX D: PARTICIPATION MATRIX

The matrix in Appendix D is intended to give a broad overview of FEMA, State of New Jersey, County, municipal and stakeholder personnel that participated in the Passaic County HMP update planning process. Meeting attendees and input provided are also included. All participants were encouraged to attend the kick-off meeting, risk assessment meeting, and mitigation strategy workshop. Participants unable to attend a Steering Committee and Planning Partnership meeting were provided access to meeting recordings and materials. During the planning process the consultant contacted each participant to offer support, explain the process, and facilitate the submittal and review of critical documents.

Letters of Intent to Participate indicating municipal planning efforts are included in this appendix. Participation is defined as having input to the hazard analysis (providing critical facility, hazard event, vulnerability data), and as having participated in the mitigation workshop or alternate annex meetings as described in the HMP for the purpose of creating a mitigation strategy to be included in each municipalities annex in Volume II.

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
American Red Cross	Sara Huisking	Executive Director		X		X	
Bergen County Office of Emergency Management	Capt. Matthew Tiedemann	Neighbor					
Bloomingdale (B)	Michael Hudson	Coordinator, Office of Emergency Management			X		
Bloomingdale (B)	Ray Muller	Deputy Coordinator, Office of Emergency Management					
Bloomingdale (B)	Breeanna Smith	Clerk					
Bloomingdale (B)	Frank Neuberger	Superintendent, Department of Public Works					
Bloomingdale (B)	Lenny Perre	Zoning Official					
Bloomingdale (B)	Mike Sondermeyer	Borough Administrator					
Bloomingdale (B)	Thomas Boorady	Borough Engineer, Darmofalski Engineering					
Clifton (C)	Lt. Angelina Tirado	Coordinator, Office of Emergency Management			X		
Clifton (C)	Capt. Darren Kester	Commander, Police Department			X		
Clifton (C)	Capt. Jeffrey Bracken	Deputy Coordinator, Office of Emergency Management			X	X	
Clifton (C)	Capt. Ronald Laube	Office of Emergency Management					
Clifton (C)	Dominick Villano	City Manager					
Clifton (C)	Edith Mayton	Finance Department			X		
Clifton (C)	Ernest Tedesco	Construction Officer					
Clifton (C)	Jason Van Winkle	Department of Public Works			X		

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Clifton (C)	Jennifer Terwilliga	Health Department/REHS/Hazmat Coordinator			X	X	
Clifton (C)	Joseph Kunz	Chief Financial Officer					
Clifton (C)	Kasey Molner	Clifton Health				X	
Clifton (C)	Michael Lardner	City Engineer					
Clifton (C)	Michael Onder	Deputy OEM Coordinator, Office of Emergency Management			X		X
Clifton (C)	Nancy Ferrigno	Municipal Clerk					
Clifton Public School District	Danny Robertozzi	Academia					
Clifton Public School District	Meaghan Zinola	Academia				X	
Clifton Public School District	Michael Doktor	Academia				X	
College Achieve Paterson Charter School	Oge Deni	Academia					
Community Charter School of Paterson	Curtis Palmore	Academia					
Haledon (B)	Alaimo Group	Borough Engineer					
Haledon (B)	Allan Susen	Borough Administrator					
Haledon (B)	Angelo J. Daniele	Chief of Police					
Haledon (B)	Carlos Aymat	Coordinator, Office of Emergency Management					
Haledon (B)	George Guzman	Deputy Coordinator, Office of Emergency Management					
Haledon (B)	James Booth	Construction Official/Haledon Building Department					
Haledon (B)	Joanne VanHook	Acting Municipal Clerk					

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Haledon (B)	Rocco Feldhann	Superintendent, Haledon DPW					
Haledon Public School District	Christopher Wacha	Academia					
Hardyston Township	Eric Stahl	Fire Marshall					
Hawthorne (B)	Andrew Skae	Office of Emergency Management			X	X	
Hawthorne (B)	Lt. Ben Veenema	OEM Coordinator, Office of Emergency Management					
Hawthorne (B)	Matthew Fenkart	Deputy OEM Coordinator, Office of Emergency Management			X	X	X
Hawthorne (B)	Ed Ferraioli	Building Official					
Hawthorne (B)	Eric Maurer	Borough Administrator					
Hawthorne (B)	Gene DeAugustines	Zoning Official/Fire Marshall					
Hawthorne (B)	Guy Tumminello	Deputy Coordinator, Office of Emergency Management					
Hawthorne (B)	James W. Knepper	Chief of Police					
Hawthorne (B)	Jennifer Scully	Insurance/Compliance Officer					
Hawthorne (B)	John Lane	Mayor			X		
Hawthorne (B)	Laurie A. Foley	CFO, Finance Department			X		
Hawthorne (B)	Lori Fernandez	Borough Clerk					
Hawthorne (B)	Stephen T. Boswell	Borough Engineer					
Hawthorne (B)	Walter Marston	Code Enforcement Official					
Hawthorne (B)	William Haffler	Director of Public Works					
Highlands Council	Allison Bittner					X	
Highlands Council	James Humphries	Director of Planning, Science & GIS		X		X	

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
John P. Holland Charter School	Christina Scano	Academia					
Lakeland Regional High School District	Hugh Beattie	Academia					
Little Falls (Twp)	Bryan Prall	Chief, Police Department			X	X	
Little Falls (Twp)	James DiMaria	Construction Official				X	
Little Falls (Twp)	Charles Cuccia	Township Administrator					
Little Falls (Twp)	John Moncato	(Deputy) Coordinator, Office of Emergency Management					
Little Falls (Twp)	Cynthia Kraus	Municipal Clerk					
Little Falls (Twp)	Daniel Gianduso	(Former) Coordinator, Office of Emergency Management			X		
Little Falls (Twp)	James Damiano	Mayor					
Little Falls (Twp)	Jason Presing					X	X
Little Falls (Twp)	Michael A. Kobylarz, PE	Town Engineer					
Little Falls (Twp)	Michael Bandurski					X	
Little Falls (Twp)	Ron Campbell	Department of Public Works			X		
Little Falls (Twp)	Vince Quatrone	Assistant Administrator				X	
Little Falls Township Public School District	Tracey Marinelli	Academia					
NJOEM	Trooper Joseph Palach	NJOEM Liason		X	X	X	
NJOEM	Cansu Yerdelenli	NJOEM Disaster Recovery Analyst – Mitigation Unit		X	X		
NJOEM	Chris Testa	Hazard Mitigation Unit Manager					
North Haledeon (B)	Chief Todd Darby	Coordinator, Office of Emergency Management			X	X	

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
North Haledeon (B)	Anthony Conforti	Deputy Coordinator, Office of Emergency Management			X	X	
North Haledeon (B)	James Booth	North Haledon Front Office					
North Haledeon (B)	Joe Pomante	Borough Engineer					
North Haledeon (B)	Mike Paese	DPW					
North Haledeon (B)	Renate Elatab	Borough Administrator					
North Haledeon (B)	Sean Phillips	Office of Emergency Management					
Passaic (C)	Alberto M. Ventura	Construction Officer			X		
Passaic (C)	Bob Munier	Fire Department			X		
Passaic (C)	Walter Porto	Deputy Coordinator, Office of Emergency Management				X	X
Passaic (C)	Fred Corbitt	Department of Public Works			X	X	X
Passaic (C)	Capt. Piyush Patel	Coordinator, Office of Emergency Management			X	X	X
Passaic (C)	Joe Colon	City Hall			X		
Passaic (C)	Mark Watkins, Sr.	Superintendent of Public Works					
Passaic (C)	Omar Garcia	CFO, Finance Department			X		
Passaic (C)	Omar Montanez	Office of Emergency Management					
Passaic (C)	Pat Trentacost	Fire Department			X		
Passaic (C)	Ricardo Fernandez	City Business Administrator			X		
Passaic (C)	Vivian Vergel	Engineering Department			X		
Passaic (C)	Weatherly Frias	City Clerk			X		
Passaic (C)	Yasseen Saad, PE	City Engineer, Neglia Group				X	X

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Passaic (C)	Rosse Campos	DPW					X
Passaic County	Boyang Wang	GIS Specialist, Planning and Economic Development Department					
Passaic County	Andras Holzman	Director of Planning		X			X
Passaic County	Denis Doohan	Passaic County Intelligence/Homeland Security Unit					
Passaic County	Dr. Arti Kakka	Director of Human Services		X			
Passaic County	Edward Murphy	Sheriff's Office			X		
Passaic County	George Rosenthal	OEM Coordinator, Office of Emergency Management		X	X	X	
Passaic County	Robert Scott	Deputy Coordinator, Office of Emergency Management	X	X	X	X	X
Passaic County	Maria Dombayci	Coordinator, Office of Emergency Management	X	X	X	X	X
Passaic County	Jonathan Pera	County Engineer		X	X		X
Passaic County	Kelly Ruffel	Director of Cultural and Historic Affairs					
Passaic County	Kenneth Simpson	Supervisor of Roads					
Passaic County	Mounir Almata	Director, Passaic County Division of Community Outreach and Family Services					
Passaic County	Chief Thomas Adamo	Sheriff's Office		X	X		
Passaic County	Matthew Merkowski	OEM					X
Passaic County Department of Health Services	Araceli Pintle	Health				X	X
Passaic County Department of Health Services	Beverly Brevard					X	

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Passaic County Department of Health Services	Yonette Fredericks	Division Director, Community Outreach Family Services				X	
Passaic County Department of Health Services	Nanuette Lane	Health				X	
Passaic County Manchester Regional High School District	Gary Lubisco	Academia					X
Passaic County Superintendent of Schools	Alicia Anderson	Executive Assistant for Passaic County Superintendent of Schools		X		X	X
Paterson (C)	Andre Sayegh	Mayor					
Paterson (C)	Arthur Woods	Deputy Chief/Fire Department					
Paterson (C)	Deborah Bravo	Mayors Office			X		
Paterson (C)	Det. Joseph Ricciardi	Office of Emergency Management			X		
Paterson (C)	Jacqueline Murray	City Clerk					
Paterson (C)	James McGrath, P.E.	Municipal Engineer			X		
Paterson (C)	Jerry Lobossozo	Building Official					
Paterson (C)	Jose Castro	Chief, Fire Department			X		
Paterson (C)	Libra Jones	Deputy Coordinator, Office of Emergency Management			X	X	
Paterson (C)	Troy Ayers	Coordinator, Office of Emergency Management			X	X	X
Paterson (C)	Capt. Herb Eggers	Office of Emergency Management			X		
Paterson (C)	Lt. Joseph Sportelli	Office of Emergency Management					
Paterson (C)	Michael Saginario	Police Department			X		
Paterson (C)	Tyrome Joyner	Office of Emergency Management			X		

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Paterson (C)	William Rodriguez	DPW Director					
Paterson (C)	Steven Olimpio	Paterson School District		X	X		
Paterson Arts and Science Charter School	Nihat Guvercin	Academia					
Paterson Charter School for Science and Technology	Ali Riza Gurcanli	Academia					
Paterson Public School District	Laurie Newell	Academia					
Paterson Public Schools	Dalton Price, Director	Academia					
Philip's Academy Charter School	Regina Lauricella	Academia					
Pompton Lakes (B)	Anthony J. Rodriguez	Police Department			X		
Pompton Lakes (B)	Colliers Engineering	Borough Planner					
Pompton Lakes (B)	Daniel Cottrell	Office of Emergency Management			X		X
Pompton Lakes (B)	Daniel O'Rourke	Superintendent of Public Works					
Pompton Lakes (B)	Derek Clark	Police Department			X		
Pompton Lakes (B)	Elizabeth Brandsness	Clerk			X		
Pompton Lakes (B)	Michael Carelli	Administrator			X		
Pompton Lakes (B)	Maria Kent	Councilwoman, Borough Council			X		
Pompton Lakes (B)	Michael Serra	Mayor					
Pompton Lakes (B)	Paul Ferriero	Borough Engineer					
Pompton Lakes (B)	Sal Poli	Construction Official					
Pompton Lakes (B)	Albert Evangelista	OEM Coordinator, Office of Emergency Management		X	X	X	X

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Pompton Lakes (B)	William Baig	Deputy OEM Coordinator, Office of Emergency Management					
Prospect Park (B)	Arsalan Gilani	Engineer					
Prospect Park (B)	David Garval	Engineer			X		
Prospect Park (B)	Fahim Abedrabbo	Acting Municipal Clerk					
Prospect Park (B)	Heidy Amaral	Code Enforcement					
Prospect Park (B)	Kenny Valt	DPW Supervisor					
Prospect Park (B)	Mayor Khairullah	Mayor					
Prospect Park (B)	Intashan Chowdhury	Business Administrator					
Prospect Park (B)	Ariosto Rodriguez	Coordinator, Office of Emergency Management			X		
Prospect Park (B)	Mohamad Daghstani	Office of Emergency Management					
Prospect Park (B)	Nicholas Portella						
Prospect Park (B)	Rafiq Munir						
Prospect Park (B)	Steven Damiano	Police Department			X		
Prospect Park (B)	Walter Richmond	Police Department			X		
Prospect Park (B)	William Mullanaphy	Office of Emergency Management					
Prospect Park (B)	Yeisy Reyes	Deputy Coordinator, Office of Emergency Management			X		
Ramsey Borough	Ralph Venturini	OEM Coordinator					
Ringwood (B)	Allison Winkler	Planning Department					
Ringwood (B)	George Stout	Assistant Superintendent DPW					

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Ringwood (B)	Jaime Matteo Landis	Deputy Maryor					
Ringwood (B)	Jeffrey Yuhas	Borough Engineer					
Ringwood (B)	Michael Hafner	Code Enforcement, Building Department					
Ringwood (B)	Scott Heck	Deputy Coordinator, Office of Emergency Management			X		X
Ringwood (B)	Patrick Murray, Jr.	Coordinator, Office of Emergency Management			X	X	X
Ringwood (B)	Nicole Langenmayr	Municipal Clerk					
Ringwood (B)	Pete McGinty	Police Chief					
Ringwood School District	Nicholas Bernice	Academia					
Rockland County Emergency Services	Chris Jensen	Neighbor					
Rutgers University	Ashlyn Spector	Rutgers Research Specialist		X			
Sussex County Office of Emergency Management	Steve Sugar,	Sussex County Sheriff's Office					
Sustainable Jersey	Maureen Jones	Municipal Programs					
Totowa (B)	Alan Burghardt	Construction Code Official, Building Department					
Totowa (B)	James Niland	Superintendent of Department Works					
Totowa (B)	John Coiro	Mayor					
Totowa (B)	Joseph Wassel	Borough Clerk					
Totowa (B)	Mike Cristaldi	Borough Engineer, Alaimo Group					
Totowa (B)	Richard Schopperth	Deputy Coordinator, Office of Emergency Management					
Totowa (B)	Detective Gary Bierach	Coordinator, Office of Emergency Management; Totowa PD					

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Totowa Public School District	Patricia Capitelli	Academia					
Township of Montclair	Michelle Kight	OEM					X
Township of Rockaway	Cpt. Robert Scherr	OEM Coordinator					X
United Way of Passaic County	Mary Celis, President/CEO	Socially Vulnerable Populations					
Wanaque (B)	Capt. Mark Kershaw	Deputy Coordinator, Office of Emergency Management					
Wanaque (B)	Katherine J. Falone	Municipal Clerk					
Wanaque (B)	Keith Spillane				X		
Wanaque (B)	Michael Hafner	Code Enforcement, Building Department					
Wanaque (B)	Mike Cristaldi	Borough Engineer, Alaimo Group					
Wanaque (B)	Paul M. Carelli	Administrator			X		
Wanaque (B)	Robert Benecke	Planner					
Wanaque (B)	Thomas Carroll	Coordinator, Office of Emergency Management			X	X	X
Wanaque (B)	Tad J. Skawinski	Superintendent, Department of Public Works			X		
Wayne (Twp)	Capt. Mike McNiff	Office of Emergency Management					
Wayne (Twp)	Chief Jack McNiff	Deputy Coordinator, Office of Emergency Management					
Wayne (Twp)	Chris Vergano	Mayor					
Wayne (Twp)	Christopher Kok	Township Planner					
Wayne (Twp)	David Bishop	Office of Emergency Management					

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
Wayne (Twp)	Det/Capt. Jason Goller	Office of Emergency Management					
Wayne (Twp)	Det/Capt. Joe Rooney	Office of Emergency Management					
Wayne (Twp)	Disp. Michael Williams	Office of Emergency Management					
Wayne (Twp)	Eric Fedor	Director, Department of Public Works			X	X	
Wayne (Twp)	Heather Vitz-Del Rio	Director, Department of Public Works; Township Engineer			X		
Wayne (Twp)	LFC James Clark	Office of Emergency Management					
Wayne (Twp)	Mary Ann Orapello	Health Department Director					
Wayne (Twp)	Paul Margiotta	Township Clerk					
Wayne (Twp)	Chris Tietjen	Business Administrator					
Wayne (Twp)	Ron Barbarulo	Building Inspector					
Wayne (Twp)	Sharon Brown	Office of Emergency Management					
Wayne (Twp)	Capt. Dan Daly	Coordinator, Office of Emergency Management			X	X	X
West Milford (T)	Charles Carbone	Engineer					
West Milford (T)	Jason Casbarro	DPW Director					
West Milford (T)	Jessica Caldwell	Township Planner					
West Milford (T)	Michael Gerst	Zoning					
West Milford (T)	Michael Weber	Deputy Coordinator, Office of Emergency Management			X	X	
West Milford (T)	Tim Ligus	Construction Official					

Jurisdiction	Name	Title / Position / Sector	Attended Pre-Kick off Meeting 10/23/23	Attended Steering Committee Kickoff 2/20/24	Attended Planning Partnership Kickoff 2/20/24	Attended RA/MA Workshop 11/14/24	Attended Draft Plan Presentation 03/20/25
West Milford (T)	Michael Moscatello	Coordinator, Office of Emergency Management					X
West Milford (T)	William Senande	Township Administrator/Clerk					
Woodland Park (B)	Allan Burghardt	Floodplain Administrator					
Woodland Park (B)	Darlene Green	Planner					
Woodland Park (B)	Joe Pomante	Engineer					
Woodland Park (B)	John Pietrowski Jr.	Superintendent, Department of Public Works			X		
Woodland Park (B)	Sam Yodice	Borough Administrator					
Woodland Park (B)	Sandie Olivola	Municipal Clerk					
Woodland Park (B)	Steven DiPaola	Deputy Coordinator, Office of Emergency Management					
Woodland Park (B)	Tracy Kallert	Mayor					
Woodland Park (B)	Captain Joseph Domicolo	Coordinator, Office of Emergency Management			X	X	X
Woodland Park School District	Michele Pillari	Academia					

APPENDIX E: ACTION WORKSHEET TEMPLATE

This appendix includes the instructions and template provided for the development of Mitigation Strategy Action Worksheets. These worksheets are included in each jurisdictional annex of the plan in compliance with NJOEM Mitigation Guidance.

Action Name:		
Lead Agency:		
Supporting Agencies:		
Hazards of Concern:	☐Dam Failure ☐Drought ☐Extreme Temperature ☐Flood	☐Geological Hazards ☐Severe Weather ☐Severe Winter Weather ☐Wildfire
Description of the Problem:		
Description of the Solution:		
Estimated Cost:		
Potential Funding Sources:		
Implementation Timeline:		
Goals Met:		
Benefits:		
Impact on Socially Vulnerable Populations:		
Impact on Future Development:		
Impact on Critical Facilities/Lifelines:		
Impact on Capabilities:		
Climate Change Considerations:		
Mitigation Category	☐Local Plans and Regulations (LPR) ☐Structure and Infrastructure Project (SIP)	☐Natural Systems Protection (NSP) ☐Education and Awareness Programs (EAP)
CRS Category	☐Preventative Measures (PR) ☐Property Protection (PP) ☐Public Information (PI)	☐Natural Resource Protection (NR) ☐Structural Flood Control Projects (SP) ☐Emergency Services (ES)
Priority	☐High	☐Medium ☐Low
Alternatives	**Action**	**Evaluation**
	No action	Problem persists

GUIDANCE TO COMPLETE THE MITIGATION ACTION WORKSHEET

The following provides additional guidance on how to complete the Mitigation Action Worksheet.

ACTION WORKSHEET

Action Name: Each action must have a unique project number referenced here and in the Action Tables.

Lead Agency: Identify the name of a department or agency responsible for implementation, not the jurisdiction.

Supporting Agencies: Identify the name of any departments or agencies which will support the efforts of the lead agency.

Hazard(s) of Concern: Please identify the hazard(s) being addressed with this action. The Hazards of Concern included in the Passaic County Hazard Mitigation Plan include:

- Dam Failure
- Drought
- Extreme Temperature
- Flood
- Geologic Hazards
- Severe Weather
- Severe Winter Weather
- Wildfire

Description of the Problem: Provide a detailed narrative of the problem. Describe the natural hazard you wish to mitigate, its impacts to the jurisdiction, past damages, and loss of service, etc. Include the street address of the property/project location (if applicable), adjacent streets, and easily identified landmarks such as water bodies and well-known structures, and end with a brief description of existing conditions (topography, terrain, hydrology) of the site.

Description of the Solution: Provide a detailed narrative of the solution. Describe the physical area (project limits) to be affected, both by direct work and by the project's effects; how the action would address the existing conditions previously identified; proposed construction methods, including any excavation and earth-moving activities; where you are in the development process (e.g., are studies and/or drawings complete), etc., the extent of any analyses or studies performed (attach any reports or studies).

Estimated Cost: Provide an estimated cost for implementation; rough dollar figures are preferred, but if unknown, a specified range is acceptable. Consider all costs associated with implementation. (Low <$10,000, Medium $10,000-$100,000, High >$100,000).

Potential Funding Source(s): Multiple sources of potential funding should be listed when appropriate.

Estimated Time Required for Project Implementation: Provide the estimated time required to complete the project from start to end. (Short-term, Long-term, or On-going/Continuous)

Goals Met:

- Goal 1: Protect Life
- Goal 2: Protect Property
- Goal 3: Increase Public Preparedness and Awareness
- Goal 4: Develop and Maintain an Understanding of Risks from Hazards
- Goal 5: Enhance County and Local Mitigation Capabilities to Reduce Hazard Vulnerability
- Goal 6: Support Continuity of Operations Pre, During, and Post-Hazard Events
- Goal 7: Reduce the risk of natural hazards for socially vulnerable populations and underserved communities
- Goal 8: Increase hazard mitigation collaboration within watersheds and along waterways that are flood prone to ensure cohesive mitigation strategies
- Goal 9: Address long-term vulnerabilities from High Hazard Dams.

Benefits: Identify the benefits that implementation of this project will provide. If dollar amounts are known, include them. If dollar amounts are unknown or are unquantifiable, describe the losses that will be avoided.

Impact on Socially Vulnerable Populations: Provide a narrative on how this action will impact socially vulnerable populations within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Impact on Future Development: Provide a narrative on how this action will impact future development within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Impact on Critical Facilities/Lifelines: Provie a narrative on how this action will impact critical facilities and community lifelines within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Impact on Capabilities: Provide a narrative on how this action will impact capabilities within the jurisdiction and other impacted areas. These impacts can be positive or negative.

Climate Change Considerations: Provide a brief narrative on how climate change may exacerbate conditions which could impact this action.

Mitigation Action Type:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- 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

Prioritization: Please enter High/Medium/Low. Refer to the prioritization exercise and table.

Actions/Projects Considered: Please consider three different options to mitigate the problem identified. One alternative is always to accept the current level or risk (tolerate the vulnerability/problem) by deciding to take no action at this time. If you choose to take no action, please complete the worksheet up to and including this section and this will be noted in the Plan.

Please include the name of the action considered and a brief reason as to why the action was not selected. The reasoning documents the consideration of these alternatives.

GUIDANCE TO COMPLETE THE PRIORITIZATION TABLE

Complete this table to help evaluate and prioritize each mitigation action being considered by your municipality. Please use these 14 criteria to assist in evaluating and prioritizing new mitigation actions identified. Specifically, for each new mitigation action, assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria in the provided table, defined as follows:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Use the numerical results of this exercise to help prioritize your actions as “Low”, “Medium” or “High” priority. Your municipality may recognize other factors or considerations that affect your overall prioritization; these should be identified in narrative in the Priority field of the worksheet. The 14 evaluation/prioritization criteria are:

1. **Life Safety** – How effective will the action be at protecting lives and preventing injuries?
2. **Property Protection** – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
3. **Cost-Effectiveness** – Are the costs to implement the project or initiative commensurate with the benefits achieved?
4. **Technical** – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.
5. **Political** – Is there overall public support for the mitigation action? Is there the political will to support it?
6. **Legal** – Does the jurisdiction have the authority to implement the action?
7. **Fiscal** - Can the project be funded under existing program budgets (i.e., is this initiative currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?
8. **Environmental** – What are the potential environmental impacts of the action? Will it comply with environmental regulations?

9. **Social** – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

10. **Administrative** – Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?

11. **Multi-hazard** – Does the action reduce the risk to multiple hazards?

12. **Timeline** – Can the action be completed in less than 5 years (within our planning horizon)?

13. **Local Champion** – Is there a strong advocate for the action or project among the jurisdiction's staff, governing body, or committees that will support the action's implementation?

14. **Other Local Objectives** – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

APPENDIX F: PLAN MAINTENANCE TOOLS

This appendix includes tools and worksheets to facilitate plan maintenance and review by the Passaic County Steering Committee and Planning Partnership.

In the first year of the performance period, an online performance progress reporting system, the BATool[SM] will provide municipal and county representatives direct access to their mitigation initiatives to easily update the status of each project, document successes or obstacles to implementation, add or delete projects to maintain mitigation project implementation. This online program will capture information and roll all input into a report to summarize mitigation strategy progress.

Figure F-1. BATool[SM] Screenshot



The FEMA 386-4 guidance worksheets are also available to assist with progress reporting. These worksheets are provided in this section for ease of access to the HMP Coordinator and Planning Partnership to maintain the 2025 HMP throughout its period of performance.

Worksheet #1 Progress Report step 2

Progress Report Period: _____ (date) to _____ (date)

Project Title: _____ Project ID#: _____

Responsible Agency: _____

Address: _____

City/County: _____

Contact Person: _____ Title: _____

Phone #(s): _____ email address: _____

List Supporting Agencies and Contacts:

_____

_____

_____

Total Project Cost: _____

Anticipated Cost Overrun/Underrun: _____

Date of Project Approval: _____ Start date of the project: _____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): _____

_____

_____

Milestones	Complete	Projected Date of Completion

Plan Goal(s)/Objective(s) Addressed:

Goal: _____

Objective: _____

Indicator of Success (e.g., losses avoided as a result of the acquisition program):

In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.

_____

_____

Status (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

Project Status

☐ Project on schedule

☐ Project completed

☐ Project delayed*

*explain: _____

_____

☐ Project canceled

Project Cost Status

☐ Cost unchanged

☐ Cost overrun*

*explain: _____

_____

☐ Cost underrun*

*explain: _____

_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

_____

_____

_____

_____

B. What obstacles, problems, or delays did you encounter, if any?

_____

_____

_____

C. How was each problem resolved?

_____

_____

_____

Next Steps: What is/are the next step(s) to be accomplished over the next reporting period?

Other comments:

Worksheet #2 Evaluate Your Planning Team step 3

When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		
Comments/Proposed Action:		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?		
Comments/Proposed Action:		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?		
Comments/Proposed Action:		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?		
Comments/Proposed Action:		
Are there ways to gain more diverse and widespread cooperation?		
Comments/Proposed Action:		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?		
Comments/Proposed Action:		

If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.

Worksheet #3 Evaluate Your Project Results step 3

Project Name and Number: _____

Project Budget: _____

Project Description: _____

Associated Goal and Objective(s): _____

Indicator of Success (e.g., losses avoided): _____

Insert location map.
Include before and after photos if appropriate.

Was the action implemented? ☐ YES ☐ NO

IF NO

Why not?	YES	NO
Was there political support for the action?	☐	☐
Were enough funds available?	☐	☐
Were workloads equitably or realistically distributed?	☐	☐
Was new information discovered about the risks or community that made implementation difficult or no longer sensible?	☐	☐
Was the estimated time of implementation reasonable?	☐	☐
Were sufficient resources (for example staff and technical assistance) available?	☐	☐

IF YES

What were the results of the implemented action? _____

	YES	NO
Were the outcomes as expected? If No, please explain:		
Did the results achieve the goal and objective(s)? Explain how:		
Was the action cost-effective? Explain how or how not:		
What were the losses avoided after having completed the project?		
If it was a structural project, how did it change the hazard profile?		
Additional comments or other outcomes:		

Date: _____

Prepared by: _____

Worksheet #4 Revisit Your Risk Assessment step 4

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?			
Profile hazard events	Are new historical records available?			
	Are additional maps or new hazard studies available?			
	Have chances of future events (along with their magnitude, extent, etc.) changed?			
	Have recent and future development in the community been checked for their effect on hazard areas?			
Inventory assets	Have inventories of existing structures in hazard areas been updated?			
	Is future land development accounted for in the inventories?			
	Are there any new special high-risk populations?			
Estimate losses	Have loss estimates been updated to account for recent changes?			

If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.

Worksheet #5 Revise the Plan step 4

Prepare to update the plan.

When preparing to update the plan:	*Check the box when addressed:*
1. Gather information, including project evaluation worksheets, progress reports, studies, related plans, etc.	
Comments:	
2. Reconvene the planning team, making changes to the team composition as necessary (see results from Worksheet #2).	
Comments:	

Consider the results of the evaluation and new strategies for the future.

When examining the community consider:	*Check the box when addressed:*
1. The results of the planning and outreach efforts.	
Comments:	
2. The results of the mitigation efforts.	
Comments:	

3. Shifts in development trends.	
Comments:	
4. Areas affected by recent disasters.	
Comments:	
5. The recent magnitude, location, and type of the most recent hazard or disaster.	
Comments:	
6. New studies or technologies.	
Comments:	
7. Changes in local, state, or federal laws, policies, plans, priorities, or funding.	
Comments:	

8. Changes in the socioeconomic fabric of the community.	
Comments:	
9. Other changing conditions.	
Comments:	

Incorporate your findings into the plan.

When examining the plan consider:	*Check the box when addressed:*
1. Revisit the risk assessment. *(See Worksheet #4)*	
Comments:	
2. Update your goals and strategies.	
Comments:	
3. Recalculate benefit-cost analyses of projects to prioritize action items.	
Comments:	

APPENDIX G: CRITICAL FACILITY INVENTORY

Due to the sensitive nature of this information, details of critical facilities have been redacted for the public document. A full list of critical facilities identified for the vulnerability analysis is available at the Passaic County Office of Emergency Management. Contact the Emergency Management Coordinator, Maria Dombayci, to view the list.

APPENDIX H: SUPPLEMENTARY DATA

This appendix contains information and details to support information provided in Chapters 6 through 13 (Hazard Profiles).

HISTORY OF HAZARD EVENTS WITHIN THE COUNTY

To supplement the information provided in this plan, events prior to the update of this plan are included below by hazard of concern type. Many sources provided historical information regarding previous occurrences and losses associated with hazards throughout New Jersey and Passaic County. It is noted that, with a number of sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the sources.

For more information on past events and impacts, refer to the 2020 Passaic County Hazard Mitigation Plan.

DAM FAILURE

There are no known dam failure events that have impacted the State of New Jersey and Passaic County between 2010 and 2019. Incidents relating to dam issues in Passaic County are identified in Table H-1. Many sources were researched for historical information regarding dam failure events in Passaic County; therefore, Table H-1 may not include all dam failure events that have impacted the County.

Table H-1. Dam Failure Events in Passaic County Between 2010 and 2018

Date(s) of Event	Event Type	Losses / Impacts
April 17, 2011	Dam Issue	Henion Pond Dam (Significant Hazard Potential) reported a sinkhole that developed along the crest of earth embankment which resulted in the EAP being enacted.
April 17, 2011	Dam Issue	Dundee Lake Dam (Low Hazard Potential) reported high water levels at the spillway which resulted in the EAP being enacted.
August 27, 2011	Dam Issue	Lindy's Lake Dam (High Hazard Potential) reported minor overtopping damage in relation to Hurricane Irene. The EAP was not enacted.

Sources: *NOAA-NCDC 2025; NWS 2025; ASDSO 2025*
ASDSO *Association of State Dam Safety Officials*
NOAA-NCDC *National Oceanic Atmospheric Administration – National Climatic Data Center*
NWS *National Weather Service*
NJ *New Jersey*

DROUGHT

Known drought events that have impacted The State of New Jersey and Passaic County between 2000 and 2019 are identified in Table H-2. Many sources were researched for historical information regarding drought events in Passaic County; therefore, Table H-2 may not include all drought events that have impacted the County.

Table H-2. Drought Events in Passaic County Between 2000 and 2018

Date(s) of Event	Event Type	Losses / Impacts
October 1, 2001-Janaury 31, 2002	Drought	Drought and excessive heat were reported.
April 1-October 31, 2002	Drought	Drought and excessive heat were reported.
June 2012	Drought	Drought and excessive heat were reported which led to a USDA declaration (S3427).
August 15, 2014	Drought	Drought and excessive heat were reported which led to a USDA declaration (S3759).
October 2014	Drought	Small areas of northern Passaic and Sussex Counties experienced moderate drought conditions in late October 2014.
May-June, 2015	Drought	At the height of the drought event in late May, over 29 percent of the state was experiencing moderate drought conditions. Drought conditions were most persistent in parts of Passaic, Sussex, and Warren Counties, lasting just over a month which led to a USDA declaration (S3930).
September 2015-January 2016	Drought	A drought watch was issued that impacted more than two-thirds of New Jersey's Population. At the height of the drought event in late September, 43 percent of the state was experiencing moderate drought conditions.
October 2016-April 2017	Drought	Drought conditions were the worst faced by New Jersey in 14 years. The entire state was experiencing some level of drought conditions at the height of the drought event in late November and early December, with nearly 38 percent of the state experiencing severe drought conditions, 34 percent experiencing moderate drought, and 28 percent was abnormally dry. NJDEP issued a Drought Warning for much of Northern and Central New Jersey due to the severity of this period of drought.

Sources: NOAA-NCDC 2025; NWS 2025; New Jersey 2024
NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center
NWS National Weather Service

EXTREME TEMPERATURE

Known extreme temperature events that have impacted the State of New Jersey and Passaic County between 2000 and 2018 are identified in Table H-3. Many sources were researched for historical information regarding extreme

temperature events in Passaic County; therefore, Table H-3 may not include all extreme temperature events that have impacted the County.

Table H-3. Extreme Temperature Events in Passaic County Between 2000 and 2018

Date(s) of Event	Event Type	Losses / Impacts
January 17-18, 2000	Extreme Cold	Extreme Cold impacted the County.
January 21, 2000	Extreme Cold	Extreme Cold impacted the County.
January 27-28, 2000	Extreme Cold	Extreme Cold impacted the County.
June 23-24, 2010	Extreme Heat	Temperatures ranged from 97°F to 99°F
June 27-28, 2010	Extreme Heat	Temperatures ranged from 95°F to 99°F
July 4-7, 2010	Extreme Heat	Hot temperatures in excess of 90 degrees began July 4th and continued through July 7th. The temperature eclipsed 100 degrees at several locations during this time.
January 24, 2011	Extreme Cold	Northwest winds produced wind chill factors below zero in most of the State.
July 21-23, 2011	Extreme Heat	Excessive heat between 100 and 105 degrees, along with heat indices of more than 105 degrees occurred for a couple of days. The heat index was as high as 113 degrees.
June 20-22, 2012	Extreme Heat	A three-day heat wave occurred with temperatures between 94°F and 99°F.
June 29, 2012	Extreme Heat	Maximum hourly heat indices reached between 100°F and 105°F.
July 18, 2012	Extreme Heat	The heat index reached or exceeded 108 degrees in Passaic County.
January 23, 2013	Extreme Cold	The northwest flow behind a departing low-pressure system coupled with one of the coldest air masses of the winter dropped temperatures into single numbers.
July 15-20, 2013	Extreme Heat	The most oppressive hot spell of the summer season affected New Jersey from July 15th through the 20th. Widespread high temperatures reached into the mid to upper 90s.
September 9, 2013	Extreme Heat	An unseasonably hot and humid air mass caused most high temperatures to reach 90F to 95F.

Date(s) of Event	Event Type	Losses / Impacts
January 4, 2014	Extreme Cold	A high-pressure system that moved over New Jersey coupled with fresh snow cover from the winter storm on the 2nd and 3rd gave the area one of its coldest winter mornings in years. This was the first of three arctic blasts in the state during the month.
January 7, 2014	Extreme Cold	Some record calendar day low temperatures occurred and combined with strong northwest winds produced wind chill factors as low as 15 to 25 degrees below zero in most areas
January 22, 2014	Extreme Cold	Strong northwest winds behind the departing strong low-pressure system coupled with another arctic air mass dropped low temperatures.
June 17, 2014	Extreme Heat	High temperatures in the lower to mid-90s were reported. Afternoon heat index values were in the mid-90s.
July 2, 2014	Extreme Heat	High temperatures in the lower to mid-90s and heat index values reaching 100 to 105 degrees.
January 7, 2015	Extreme Cold	The arrival of an arctic air mass brought one of the coldest mornings of the month of January to most of New Jersey. Morning low temperatures were mainly in the single numbers above zero.
February 13, 2015	Extreme Cold	Northwest winds that persisted into the morning of the 13th combined with an arctic air mass to produce wind chill factors of around 10 degrees below zero and low temperatures in the positive single numbers.
February 15-16, 2015	Extreme Cold	The near arrival of the center of the arctic air mass brought some of the lowest wind chills and temperatures of the winter season. This produced wind chill factors as low as around 20 degrees below zero in most of the state.
February 19-20, 2015	Extreme Cold	The arrival of another arctic air mass brought some of the lowest wind chills as well as the lowest temperatures of the winter season.
February 24, 2015	Extreme Cold	The high-pressure system responsible for third and last arctic blast of the month. Air and wind chill temperatures were nearly the same. The calm conditions and snow cover combined to give many locations in northwest New Jersey the coldest morning of the winter season.
July 19-20, 2015	Extreme Heat	High temperatures in most areas reached into the lower to mid-90s both days. The combination of heat and humidity brought afternoon heat index values as high as 100F to 105F on the 19th.
February 14, 2016	Extreme Cold	Bitter cold temperatures and strong northwest winds associated with an Arctic outbreak combined to create dangerous wind chill temperatures.

Date(s) of Event	Event Type	Losses / Impacts
July 28, 2016	Extreme Heat	The State Emergency Operations Center reported 17 heat related illnesses, due to heat exposure during the PGA tournament in Springfield, NJ. The combination of temperatures and humidity made it feel like the mid-90s.
July 20, 2017	Extreme Heat	A Bermuda high pressure system ushered in hot and humid weather across the east coast.

Sources: NOAA-NCDC 2025; NWS 2025; New Jersey 2024

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center
NWS National Weather Service

FLOOD

Known flood events that have impacted the State of New Jersey and Passaic County between 2010 and 2018 are identified in Table H-4. Many sources were researched for historical information regarding flood events in Passaic County; therefore, Table H-4 may not include all flood events that have impacted the County.

Table H-4. Flood Events in Passaic County Between 2010 and 2018

Date(s) of Event	Event Type	Losses / Impacts
March 14-19, 2010	Flood	A nor'easter produced extended periods of heavy rainfall across the County. Numerous roads and bridges were closed and over 3,000 homes were flooded. The County had 3,000,000 in property damages documented.
March 30, 2010	Flood	A nor'easter produced extended periods of heavy rainfall across the County. All lanes were closed on Route 20 South in Paterson, due to flooding. Total rainfall amounts received across Passaic County ranged from 2.79 inches in Monksville to 3.59 inches in Hawthorne.
July 14, 2010	Flash Flood	A cold front moving across the area triggered scattered thunderstorms, which produced heavy rain and widespread flash flooding across Northeast New Jersey. In Clifton, US 46 was closed in both directions between County Road 628 (Piaget Ave.) and Paulison Ave. due to flooding. A Skywarn Spotter in Clifton reported 3.75 inches of rainfall.
July 23, 2010	Flash Flood	Severe storms, including an isolated supercell, associated with a warm front just to the north of the Tri-State, moved southeast into the region. These thunderstorms produced heavy rain and flash flooding and impacted most of Northeast New Jersey. In Clifton, all lanes were closed in both directions on US 46 east of County Road 628 and Piaget Avenue.

Date(s) of Event	Event Type	Losses / Impacts
October 1, 2010	Flood	Tropical Storm Nicole resulted in heavy rain and flooding across portions of the County. Route 46 was closed due to flooding. Rainfall totals ranged from 3.47 inches in Wayne to 6.51 inches in West Milford.
March 7, 2011	Flood	A slow-moving system aided in heavy rainfall that resulted in moderate to major flooding across portions of Northeast New Jersey. Local fire and rescue staff evacuated residents that live along the Ramapo River in Pompton Lakes, which rose out of its banks. Hamburg Turnpike at Route 202 below the Pompton Lakes Dam was closed due to flooding.
March 11, 2011	Flood	A slow-moving system aided the production of additional rainfall which added to the wet conditions from a few days prior. Route 23 was closed in both directions near Echo Lake Road in West Milford. and at Alps Road in Wayne due to flooding. Paterson Hamburg Turnpike between Riverview Rd. and US 202 in Pompton Lakes was impassable and closed due to flooding. All lanes were closed on NJ 20 from 5th Avenue to E. 30th Street in Paterson. Flooding in both directions on NJ 23 caused the ramps at US 202 to be closed in Wayne.
April 16-17, 2011	Flood	A storm system brought flooding rains to portions of New Jersey. Route 46 was flooded between Andrew Dr. and McBride Ave. in Woodland Park. Automobile water rescues were performed by the local fire department. All lanes were closed eastbound on Rt. 46 at Piaget Ave. due to flooding in Clifton. All lanes were closed in both directions on Route 23 from Main St. to North of US 202 due to flooding in Wayne.
June 23, 2011	Flash Flood	Several rounds of thunderstorms ran through the area and produced massive flash flooding throughout the state. Skylands Road in Ringwood was closed due to several inches of moving water on the road. Running water broke and moved a cinderblock wall on Rockburn Pass Rd. in West Milford. Route 3, just east of the Garden State Pkwy. in Clifton, was closed in both directions due to severe flooding. Several motorists were stranded in waist-high water and rescued by local authorities.
August 28, 2011	Flood	Irene made landfall and produced heavy rainfall that resulted in flooding. Route 3 at Bloomfield Ave. in Clifton was closed due to flooding. Water rose up to car doors and entered homes near Hromiak Terrace and Dowling Pkwy. in Woodland Park.
September 6-8, 2011	Flood	A combination of showers and thunderstorms from Tropical Storm Lee produced a long period of rainfall which led to flooding. Presidential Blvd. in Paterson was impassible due to flooding. Total reported rainfall amounts in Passaic County ranged from 5.27 inches in West Paterson to 6.80 inches in Hawthorne. In Paterson, the North Straight St. bridge, the 6th Ave. bridge and Beckwith Ave. at Interstate 80 eastbound were all closed due to flooding.
July 28, 2012	Flash Flood	Scattered thunderstorms produced heavy rainfall and flash flooding in the County. Berdan Ave. at Hamburg Turnpike in Wayne was impassable due to flooding. Route 3 westbound between Bloomfield Ave. and the Garden State Parkway in Clifton was impassable due to flooding.

Date(s) of Event	Event Type	Losses / Impacts
June 18, 2013	Flash Flood	A slow-moving thunderstorm produced heavy rainfall and resulted in flash flooding. Dawes Highway was closed due to flooding.
July 1, 2013	Flash Flood	Showers and thunderstorms resulted in heavy rain and flash flooding In Wayne, the service road on Route 23 near I-80 was closed due to flooding. In addition, there was 3 feet of standing water at the intersection of French Hill Rd. and Valley Road. The road at the intersection of French Hill Rd. and Parish Dr. buckled due to flooding and had to be closed. A stretch of Rt. 3 near the Garden State Pkwy. in Clifton was closed due to flooding. McLean Blvd. between Broadway and I-80 in Paterson was closed due to flooding. In addition, Rt. 3 at Valley Rd. in Clifton was also closed due to flooding.
July 22, 2013	Flash Flood	Some storms produced heavy rainfall in the County that resulted in flash flood conditions. Route 46 was closed in both directions east of Piaget Ave. in Clifton. due to flooding. Route 23 northbound was closed at High Crest Drive in Smiths Mills due to flooding.
May 23, 2014	Flash Flood	Isolated storms produced large hail and flash flooding. The southbound lanes of Route 19 at the intersection of Broad St. in Clifton were closed due to flooding. Three vehicles were submerged in flood waters at 26 North Straight Street in Paterson with the occupants rescued by local officials. The Garden State Pkwy. southbound was closed at Route 46 in Clifton due to flooding.
June 13, 2014	Flash Flood	Thunderstorms produced heavy rain that resulted in flash flooding. Dawes Highway in Pompton Lakes was impassable and closed due to flooding.
July 14, 2014	Flash Flood	A severe storm resulted in River Street in Paterson closing due to the flooding.
May 31, 2015	Flash Flood	Scattered thunderstorms produced heavy rain that led to flash flooding which resulted in a car becoming stuck in flood waters near the railroad tracks on Van Houten Avenue.
June 15, 2015	Flash Flood	Heavy rain produced flooding conditions which led to two people being swept away by Weasel Brook which resulted in one fatality.
July 31, 2016	Flash Flood	Heavy rainfall resulted in flash flooding which led to several water rescues being performed. Some facilities documented flood damages.
July 1, 2017	Flood	Scattered showers and thunderstorms resulted in flooding along the Preakness Brook which caused manhole covers to be lifted off.
July 17, 2017	Flash Flood	Strong storms resulted in Route 202 becoming flooded with a few vehicles becoming disabled.
August 2, 2017	Flash Flood	Strong thunderstorms produced flash flooding that resulted in numerous road closures.

Date(s) of Event	Event Type	Losses / Impacts
August 5, 2017	Flash Flood	Isolated flash flooding was reported in the County which resulted in US 46 having to be closed.
April 16, 2018	Flash Flood	Heavy rainfall totaled to nearly 5 inches of rain within a three-to-four-hour period, which resulted in a water rescue in the Passaic River.
July 25, 2018	Flash Flood	Showers and thunderstorms produced isolated flooding in the County which resulted in Tremont Terrace being closed.
August 11, 2018	Flash Flood	A stalled storm produced several rounds of heavy rain which resulted in flash flooding and closed roads and numerous car dealerships and other businesses which resulted in documented property damages of over three million dollars.
October 2, 2018	Flash Flood	Strong storms resulted in flash flooding across the region which resulted in Ringwood Avenue needing to be closed.

Sources: NOAA-NCDC 2025; NWS 2025; New Jersey 2024

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center
NWS National Weather Service

GEOLOGICAL HAZARD

Known geological hazard events that have impacted the State of New Jersey and Passaic County between 2000 and 2018 are identified in Table H-5. Many sources were researched for historical information regarding geological hazard events in Passaic County; therefore, Table H-5 may not include all geological hazard events that have impacted the County.

Table H-5. Geological Hazard Events in Passaic County Between 2000 and 2018

Date(s) of Event	Event Type	Losses / Impacts
August 22, 2000	Earthquake	Earthquake with a 2.6 magnitude that is two kilometers WSW of Brewster Hill, NY.
October 27, 2001	Earthquake	Earthquake with a 2.6 magnitude that is one kilometer NNW of Manhattan, NJ.
August 26, 2003	Earthquake	Earthquake with a 3.1 magnitude that is four kilometers of NNW of Milford, NJ.
February 3, 2009	Earthquake	Earthquake with a 3 magnitude that is one kilometer ESE of Victory Gardens, NJ.

Date(s) of Event	Event Type	Losses / Impacts
July 1, 2009	Earthquake	Earthquake with a 2.8 magnitude that is three kilometers ESE of Pennsville, NJ.
January 25, 2015	Earthquake	Earthquake with a 2.6 magnitude that is four kilometers ESE of Downingtown, PA.
August 14, 2015	Earthquake	Earthquake with a 2.6 magnitude that is three kilometers SE of Mendham, NJ.
November 30, 2017	Earthquake	Earthquake with a 4.1 magnitude that is three kilometers NNE of Little Creek, DE.

Sources: NOAA-NCDC 2014; NWS 2014

SEVERE WEATHER

Known severe weather events that have impacted the State of New Jersey and Passaic County between 2014 and 2018 are identified in Table H-6. Many sources were researched for historical information regarding severe weather events in Passaic County; therefore, Table H-6 may not include all severe weather events that have impacted the County.

Table H-6. Severe Weather Events in Passaic County Between 2014 to 2018

Date(s) of Event	Event Type	Losses / Impacts
June 13, 2014	Thunderstorm Wind	An approaching cold front triggered a line of severe thunderstorms that produced heavy rain and resulted in flash flooding in portions of Northeast New Jersey.
July 3, 2014	Hail	As a cold front slowly moved across the area, moisture from Tropical Cyclone Arthur passing to the south and east converged along the boundary resulting in severe thunderstorms, heavy rain and flash flooding in portions of Northeast New Jersey.
July 3, 2014	Thunderstorm Wind	As a cold front slowly moved across the area, moisture from Tropical Cyclone Arthur passing to the south and east converged along the boundary resulting in severe thunderstorms, heavy rain and flash flooding in portions of Northeast New Jersey.
July 8, 2014	Thunderstorm Wind	A line of strong with embedded severe thunderstorms formed along a slow-moving cold front as it progressed through the Northeast.
June 21, 2015	Thunderstorm Wind	A passing cold front triggered an isolated severe thunderstorm over eastern Passaic County.

Date(s) of Event	Event Type	Losses / Impacts
June 5, 2016	Thunderstorm Wind	A passing cold front triggered a line of severe thunderstorms over Bergen and Passaic Counties.
July 1, 2016	Thunderstorm Wind	A passing cold front triggered a few severe thunderstorms over northeast New Jersey.
May 14, 2017	Thunderstorm Wind	An upper level low triggered strong thunderstorms over Northeast New Jersey.
March 2, 2018	High Wind	A deep area of low pressure passed off the coast.
May 15, 2018	Thunderstorm Wind	An approaching cold front triggered numerous severe thunderstorms over northeastern New Jersey.
August 7, 2018	Thunderstorm Wind	A hot and humid airmass with a weak surface trough, in association with an upper-level trough triggered thunderstorms across the region.
August 17, 2018	Thunderstorm Wind	A pre-frontal trough and mid-level disturbance triggered severe thunderstorms across the region.

Sources: NOAA-NCDC 2025; NWS 2025

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

SEVERE WINTER WEATHER

Known severe winter weather events that have impacted the State of New Jersey and Passaic County between 2014 to 2018 are identified in Table H-7. Many sources were researched for historical information regarding severe winter weather events in Passaic County; therefore, Table H-7 may not include all severe winter weather events that have impacted the County.

Table H-7. Severe Winter Weather Events in Passaic County Between 2014 and 2018

Date(s) of Event	Event Type	Losses / Impacts
January 2, 2014	Heavy Snow	A low-pressure system moving into the Ohio Valley on January 2 redeveloped and intensified along the Mid Atlantic coast, bringing heavy snow to Northeast New Jersey before moving out to sea on the third of January.
January 21, 2014	Heavy Snow	Low pressure moving from the central Appalachians the morning of the 21st intensified off the Mid Atlantic coast and brought heavy snow to most of northeast New Jersey.

Date(s) of Event	Event Type	Losses / Impacts
February 3, 2014	Heavy Snow	Weak low pressure passing to the south brought heavy snow to Northeast New Jersey on the third.
February 5, 2014	Heavy Snow	A complex low-pressure system moving through the Ohio Valley and Mid-Atlantic regions brought a quick burst of moderate to heavy snow, sleet, and freezing rain to Northeast New Jersey the morning of February fifth.
November 26, 2014	Heavy Snow	Low pressure developed during the late evening hours on November 25th across northern Florida and quickly raced along the Eastern seaboard on the 26th, bringing heavy snow along and northwest of the Interstate 287 corridor of interior Northeast New Jersey, and disrupting travel plans the day before Thanksgiving Day.
January 24, 2015	Heavy Snow	Low pressure moved out of the northern Gulf of Mexico on the morning of the 23rd, to the Mid Atlantic coast on the morning of the 24th, then rapidly intensified on its way northeast to the Canadian Maritimes the following day. This low brought heavy snow to parts of northeast New Jersey on the 24th.
February 1, 2015	Heavy Snow	An area of low pressure tracked east from the Ohio Valley the night of February 1 to just south of Long Island the afternoon of February 2. The proximity of the low with arctic air to the north resulted in snow at the onset, which transitioned to a wintry mix during the morning hours before going back to snow by early afternoon. Northeast New Jersey received 5 to 12 inches of snowfall and up to a third of an inch of ice.
March 14, 2017	Blizzard	Rapidly deepening low pressure tracked up the eastern seaboard on Tuesday March, 14 bringing blizzard conditions to Western Passaic county. Heavy snow and sleet along with strong winds occurred across the rest of Northeast New Jersey. The storm cancelled numerous flights at Newark airport with some mass transit services suspended. Large trees fell onto homes in Bergen county and approximately 4,500 power outages resulted from the strong winds and heavy snow.
February 17, 2018	Heavy Snow	A low pressure developed along a frontal boundary along the southeast coast on the evening of Saturday, February 17, 2018. This low gradually became better organized as it moved up the coast early Sunday, February 18, 2018. This system brought heavy snow to northern portions of northeast New Jersey.
March 6 – March 7, 2018	Severe Storm and Snowstorm	Precipitation gradually overspread the region during the overnight hours of March 6th to the 7th. The snow contained large amounts of liquid, making it heavy and wet. This resulted in downed trees, limbs, and wires, leading to numerous power outages across portions of New Jersey, especially where the heaviest snow was reported. Many customers were still without power from the previous storm when this storm struck. Governor Murphy estimated about 350,000 customers state-wide lost power as a result of this second storm. Governor Phil Murphy declared a state of emergency which went into effect at 8 PM Tuesday March 6th. Flights were cancelled at all the major airports due to the storm, and Amtrak cancelled at least some Wednesday service.

Sources: NOAA-NCDC 2025; NWS 2025

WILDFIRE

Known wildfire events that have impacted the State of New Jersey and Passaic County between 2000 and 2018 are identified in Table H-8. Many sources were researched for historical information regarding wildfire events in Passaic County; therefore, Table H-8 may not include all wildfire events that have impacted the County.

Table H-8. Wildfire Events in Passaic County Between 2000 and 2018

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
None Identified				

Sources: *NOAA-NCDC 2025; NWS 2025; New Jersey 2025*

APPENDIX I: NJOEM PLANNING GUIDANCE

This appendix includes the 2017 NJOEM planning standards and guidelines for hazard mitigation planning.

Purpose: To establish policy and procedures for the most efficient operation of the New Jersey Office of Emergency Management Hazard Mitigation Planning Section.

Hazard Mitigation Planning

The Hazard Mitigation Planning process is the first step in supporting the mission of mitigation. The purpose of hazard mitigation planning is to identify policies and actions that can be implemented long term to reduce risk and future losses. Hazard Mitigation Plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repetitive damages. The planning process is as important as the plan itself. It creates a framework for risk-based decision making to reduce damages to lives, property, and the economy from future disasters. More importantly, it is meant to be an open process by which the community is actively involved in the development of their hazard mitigation plan. Community participation is a vital component of this process.

State and Local governments benefit from Mitigation Planning by:

- Identifying cost effective actions for risk reduction that are agreed upon by stakeholders and the public
- Focusing resources on the greatest risks and vulnerabilities
- Building partnerships by involving people, organizations, and businesses
- Increasing education and awareness of hazards and risk
- Communicating priorities to state and federal officials
- Aligning risk reduction with other community objectives

Procedures

In an effort to facilitate the Hazard Mitigation Planning process, the New Jersey Office of Emergency Management will adhere to the following procedures:

Plans Received - Local governments will submit all FEMA funded County hazard mitigation plans to the NJOEM Hazard Mitigation Planning section for review. Once plans have been submitted to NJOEM, they will be entered into a spreadsheet that captures the ***name of plan***, ***date received***, ***stage of development***, ***who reviewed the plan***, and ***date the review was completed***. Plans may be submitted in the following stages of development:

- **Preliminary Hazard Mitigation Plan** – must include hazard identification, risk assessment and mitigation strategy. It is being submitted as it being developed to ensure the local government is adhering to the regulations as stipulated by 44 CFR 201.6 and is actually on track to becoming approvable pending adoption and subsequent approval status.

- **Draft Plan** – plan is complete, but has not been adopted yet.

- **Final Plan** – plan is complete, with all resolutions and ready for final review. Plan will not be adopted until final FEMA approval.

Documentation – It is necessary to document the "life" of the project from application to closeout. This will assist in any potential auditing situations.

Filing System - All of the information will be documented in each plan's file. The filing system will include, but will not be limited to the following documents: all correspondence (letters and pertinent emails), financial information, sub-grantee agreements, and closeout information.

Letters - Various letters will be created and disseminated according to the activity in an effort to document the review and approval process. The letters are as follows:

- Submittal letter for planning grant application to FEMA
- Transmittal letters
  - Preliminary Hazard Mitigation Plan
  - Plan Update
  - Electronic Transmissions of the Hazard Mitigation Plan through physical flash drives or internet-based transmittals, along with Adoption Resolutions
- Extension request letter
- NJOEM Extension approval letter
- End of period of performance letter
- APA (approvable pending adoption) letter for Hazard Mitigation Plan
- APP (approved) letter for Hazard Mitigation Plan
- APP (approved) letter for additional jurisdictions
- APA (approvable pending adoption) letter for jurisdictions that have not adopted
- Final FEMA Approval
- Closeout procedures

Hazard Mitigation Plan Deliverables will include the following:

- **Preliminary Plan** deliverable will be reviewed by NJOEM and FEMA Region II and will include:
  - Letter of Transmittal;
  - Two (2) individual flash drives containing electronic copies of the Hazard Mitigation Plan, including at a minimum the hazard identification/risk assessment and mitigation strategy sections of the plan. Each Flash drive shall contain copies of the plan in a Portable Document Format (PDF) format and Microsoft Word (DOCX) format.

- **Draft Plan** deliverable will be reviewed by NJOEM and FEMA Region II and will include:
  - Letter of Transmittal;
  - Two (2) individual flash drives containing electronic copies of the Hazard Mitigation Plan, including a complete hazard mitigation plan. Each Flash drive shall contain copies of the plan in a Portable Document Format (PDF) format and Microsoft Word (DOCX) format. This deliverable will incorporate review comments from the Preliminary Plan deliverable and will conform to all requirements of 44CFR Part 201.6 with the exception of resolution(s) of adoption.

- **Final Plan** deliverable will include the following:
  - Letter of Transmittal;
  - Two (2) individual flash drives containing electronic copies of the Hazard Mitigation

Plan, including an entire adopted and approved hazard mitigation plan. Each Flash drive shall contain copies of the plan in a Portable Document Format (PDF) format and Microsoft Word (DOCX) format.

In an effort to receive official approval of a Hazard Mitigation Plan, all items outlined in the Final Plan deliverable must be submitted. All counties and municipalities are required, per the 44 CFR 201.6, to officially adopt the Hazard Mitigation Plan in order to receive official approval and qualify for the following FEMA funding:

- HMA Programs
  - HMGP (Hazard Mitigation Grant Program)
  - FMA (Flood Mitigation Assistance)
  - PDM (Pre Disaster Mitigation)

NJOEM State Hazard Mitigation Planners/Community Planners

All of the activities mentioned heretofore will be facilitated by NJOEM State Hazard Mitigation Planners or Community Planners. Typical duties are as follows:

- Review local mitigation plans for compliance with regulations, policies, and guidance
- Provide written recommendations to local governments for plan improvements
- Under the direction of the Team Lead or Senior Planner, provide technical assistance to local and State officials on the preparation, revision, or updating of mitigation plans to comply with Federal requirements
- Tracks assigned plans through all elements of the review process, including data entry, and drafting of crosswalk review, submittal letters, and approval letters, etc.
- Participates in team review sessions and coordinates closely with local contacts
- Provide planning related training to the other pertinent areas of the State as well as local governments.
- Working knowledge of pertinent laws, regulations, policies, and precedents that affect the use of program and related support resources in the State.
- Ensure that there is a comprehensive knowledge of the major issues, program goals and objectives, work processes, and administrative operations of the organization.
- Basic knowledge of the NFIP being that there has been an inclusion of those elements in the Planning Guidance.

Briefings and Meetings

As part of their duties, State Hazard Mitigation Planners/Community Planners will travel to the county to explain the specifics of the Hazard Mitigation Planning Process funded through the Hazard Mitigation Grant Program and Pre-Disaster Mitigation Programs – Federal programmatic requirements, local, state, and Federal reporting responsibilities, financial requirements, and procurement requirements.

Additionally, State Hazard Mitigation Planners/Community Planners will attend meetings (when available) to ensure locals are implementing the components of the grant to the specifications of Federal requirements and State guidelines.

PUBLIC NOTICE

[Name] County Hazard Mitigation Planning Grant

[Name] County has been approved for the Hazard Mitigation Planning Grant through the State of New Jersey Office of Emergency Management (NJOEM). The [Name] County is seeking the services of a qualified consulting firm to create a Hazard Mitigation Plan.

The procedures for selection of the firm will be in accordance with procurement requirements set forth by the State/Federal Governments. All responses received will be evaluated in accordance with the selection criteria and corresponding point system, which is further explained in the Request for Qualifications Package. The package also identifies the scope of services to be performed by the chosen firm.

Interested parties are invited to secure a Request for Qualifications Package from Contact Person, Address, City, New Jersey Zip Code or by calling 000-000-0000 with your request or by emailing your request to email address. The package is available beginning Date. The response to this request must be hand delivered or mailed to the Point of Contact at the address above in such a manner that it is received no later than Date.

[Name] County is an Equal Opportunity Employer. We encourage all small and minority-owned businesses to apply.

Name of County

Request for Statements of Qualifications and Cost Proposals
Implementation of FEMA Hazard Mitigation Planning Grant

Create a Multi-Jurisdictional Hazard Mitigation Plan

PROPOSAL PACKET

INTRODUCTION:

Name of County has secured a grant through the Hazard Mitigation Grant Program and is seeking a consulting firm for implementation purposes. This grant provides for the creation of a Multi-jurisdictional Hazard Mitigation Plan for the Name of County and its corresponding jurisdictions.

PART 1 – MANAGEMENT AND ADMINISTRATION:

Name of County will negotiate a fixed price basis contract. The **scope of services**, which the consultant must be prepared and qualified to provide, **are as follows**:

Project Scope of Work

Planning Process – documentation will identify:

- Who was involved as part of a Hazard Mitigation Planning Committee, the roles and responsibilities of each committee member and how they contributed to the process.
- Opportunities for public participation;
- Opportunities for participation by other agencies, communities, interested parties, etc.;
- Document outreach to adjacent counties and communities to assure consistency in risk, vulnerability and HM planning; and,
- Integration of other related plans and documents.

  - **Plan Update**:
    - The plan **must** identify all participating jurisdictions, new or continuing and, if known, jurisdictions that no longer participate in the plan.
    - The plan **shall** describe the process used to review and analyze each section of the plan (i.e. Planning Process, Risk Assessment, Mitigation Strategy, and Plan Maintenance).
    - If the planning team or committee concludes that some sections of the plan warrant an update and others did not, the team or committee **must** document the process used to make that determination.
    - The plan maintenance section requires a description of how the community was kept involved during the plan maintenance process (44 CFR 201.6(c)(4)(iii)) over the past five years. However, since this contributes to the planning process, the community may elect to describe this within the planning process section of the plan.
    - The plan **must** include an endorsement from each participating jurisdiction. The endorsement **must** include, at a minimum, that the jurisdiction's professional

staff (i.e., Engineer, Planner, Zoning/Code Officer, and Flood Plain Manger) have reviewed the plan and certify that the plan is consistent with the professional duties of their offices.

Risk Assessment – the risk assessment will include:

- Description of all natural hazards that can affect the assets of our county;
- Identification of the location, extent, previous occurrences, and probability of future occurrences for each of the identified hazards;
- Assessment of the vulnerability of assets and the potential impact of each hazard; and,
- Estimates of potential losses based on best available data and predictive models and the risk assessment should address both existing and future assets.

  - **Plan Update**:
    - The local risk assessment **shall,** at a minimum, report risk in a consistent manner with the Standardized Risk Template identified in the New Jersey State Hazard Mitigation Plan (State HMP). Innovative methods to measuring risk and vulnerability are encouraged; however, the standardized risk template allows for equal comparison of risk across plans.
    - Plan updates **may** reference scientific and technical information of hazards identified within the State HMP to make hazard profiles within jurisdictional plans more concise. Jurisdictions are encouraged to focus on specific changes within the community that may have lessened or increased risk to the profiled hazards since the previous plan.
    - The local risk assessment update **shall** address any newly identified hazards that have been determined to pose a threat.
    - The plan update **shall** continue to describe occurrences of hazards included in the previously approved plan, and discuss new occurrences of hazard events. The updated plan **shall** incorporate any new historical records, or hazard data related to profiling hazards.
    - Any maps included in the updated plan, **must** be consistent with the updated information.
    - The vulnerability overview in the updated plan **shall** describe any changes, clarifications, or refinements to the summary described in the previously approved plan. It **shall** continue to include, by type of hazard, a general description of the types of structures affected by the hazard.
    - All Local Mitigation Plans approved by FEMA **must** address repetitive loss structures in the risk assessment by describing the types (residential, commercial, institutional, etc.) and estimate the numbers of repetitive loss properties located in identified flood hazard areas.
    - If new hazards and risks have been identified in the multi-jurisdictional risk assessment, the information **must** be attributed to the appropriate jurisdiction(s) or to the whole planning area or whichever applies.
    - Where vulnerability to previously identified hazards has changed, the plan **must** incorporate this information into the updated multi-jurisdictional risk assessment and it **must** be attributed to the appropriate jurisdiction(s) or to the whole planning area or whichever applies.
    - If the previously approved plan identified that data deficiencies would be addressed at a later time, then the resolved deficiencies **shall** be incorporated in

the updated plan. If the data deficiencies have not been resolved, they **must** be addressed along with an explanation of why they have not been resolved.

Mitigation Strategy – will include:

- Developing mitigation goals and identifying appropriate mitigation actions based on the results of the risk assessment;
- Actions that address the full range of identified hazards;
- Actions that address both existing and future assets;
- An implementation strategy that includes prioritization of mitigation actions including consideration of relative costs and benefits, identification of parties responsible for implementation, funding mechanisms and timelines for implementation.

  - **Plan Update**:
    - HMP plan **must** identify the completed, deleted, or deferred actions or activities from the previously approved plan as a benchmark for progress. If the mitigation actions or activities remain unchanged from the previously approved plan, the updated plan **shall** include in its prioritization any new mitigation actions identified since the previous plan was approved or through the plan update process.
    - The plan update provides an opportunity for local jurisdictions to reconsider the range of specific actions. If the mitigation actions remain unchanged from the previous plan, then the update **should** indicate why changes are not necessary.
    - All Local Mitigation Plans **must** describe each jurisdiction's participation in the NFIP and must identify, analyze, and prioritize actions related to continued compliance with the NFIP.
    - Each participating jurisdiction **shall** have its own appendix to highlight and detail the jurisdiction's mitigation actions.
    - Each participating jurisdiction **must** provide valid and specific mitigation action(s) for Repetitive Loss and Severe Repetitive Loss properties within the jurisdiction.

Plan Maintenance – will describe the process to be used after the plan is adopted and approved to:

- Incorporate the goals and actions of the mitigation plan into other available mechanisms and/or plans for implementation, such as county and local land use plans and development ordinances;
- Provide for continued public involvement;
- Monitor and evaluate the plan and its implementation; and
- The method and schedule for future required plan updates.

  - **Plan Update**:
    - The jurisdiction updating the plan **shall** review and consider items included in FEMA's and State's review. If items are not addressed, then the jurisdiction should provide an explanation.
    - The updated plan **shall** include an executive summary of changes to the plan

and a crosswalk tool to track changes.

- As part of the planning process, the community reviews and analyzes the previously approved plan's method and schedule for monitoring and updating the plan, such as strengths and weaknesses and what elements, if any, have changes. The updated plan **must** include the method and schedule that will be used over the next five years to monitor, evaluate, and update the plan.
- The updated plan shall continue to describe how the mitigation strategy, including goals and objectives, and mitigation actions will be incorporated into other planning mechanisms, such as county and local land use plans and development ordinances, and also indicate how information contained in the plan, including hazard identification and the risk assessment, will be integrated into other planning mechanisms.
- Jurisdictions are encouraged to make updated plans available online for viewing or download.
- When the community prepares the plan update, the process used to keep the community involved over the previous five years must be explained, but is suggested that it is captured in the planning process. However, the updated plan **shall** describe the process used to solicit public involvement during the plan maintenance process over the next five years.
- Plan maintenance **shall** be discussed during at least one County Office of Emergency Management Coordinator meeting per year and a summary submitted to NJOEM.

Hazard Mitigation Plan Deliverables will include the following:

Preliminary Plan deliverable will be reviewed by NJOEM and FEMA Region II and will include:

- Letter of Transmittal;
- Two (2) individual flash drives containing electronic copies of the Hazard Mitigation Plan, including at a minimum the hazard identification/risk assessment and mitigation strategy sections of the plan. Each Flash drive shall contain copies of the plan in a Portable Document Format (PDF) format and Microsoft Word (DOCX) format.

Draft Plan deliverable will be reviewed by NJOEM and FEMA Region II and will include:

- Letter of Transmittal;
- Two (2) individual flash drives containing electronic copies of the Hazard Mitigation Plan, including a complete hazard mitigation plan. Each Flash drive shall contain copies of the plan in a Portable Document Format (PDF) format and Microsoft Word (DOCX) format. This deliverable will incorporate review comments from the Preliminary Plan deliverable and will conform to all requirements of 44CFR Part 201.6 with the exception of resolution(s) of adoption.

Final Plan deliverable will include the following:

- Letter of Transmittal;
- Two (2) individual flash drives containing electronic copies of the Hazard Mitigation Plan, including an entire adopted and approved hazard mitigation plan. Each Flash drive shall contain copies of the plan in a Portable Document Format (PDF) format and

Microsoft Word (DOCX) format.

PART 2 – PROPOSALS:

Proposals will be accepted by the **Name of County**, in the **Name of Location , Address, City,** New Jersey **Zip Code** until **0:00 PM on Day, Month Date, Year.**

In order to be considered, proposals must be received prior to the time and date specified herein. The County reserves the right to reject any or all responses. All responses should be sealed and the outside of the envelope marked: REQUEST FOR STATEMENTS OF QUALIFICATIONS AND COST PROPOSALS, Implementation of FEMA Hazard Mitigation Planning Grant Program, Creation of Name of County Hazard Mitigation Plan.

Consultants should possess qualifications and expertise in the following areas:

- Hazard Mitigation Planning
- Hazard Mitigation Grant Program
- State of New Jersey Mitigation Priorities

All proposals will be scored and ranked with the highest rated firm being awarded a contract. The proposal must include a (1) A detailed budget (2) brief history of the firm and a resume' of each person in the firm who will be assigned to the project; (3) documentation of the responder being a "qualified third party provider" or the responder must be in good standing with the Secretary of State; and (4) a list of projects and contact person name, address and telephone number for which the individual/firm has completed similar projects. This list will be used for reference purposes.

Two (2) copies of the proposal and required supplemental information should be provided.

PART 3 – SELECTION CRITERIA:

All responses to the solicitation will be evaluated according to the following criteria and corresponding point system. The proposal will be evaluated on the basis of written materials. Sufficient information must be included in the response to ensure that the correct numbers of points are assigned. Incomplete or incorrect information may result in a lower score.

Experience/Knowledge with	
Hazard Mitigation Planning and Hazard Mitigation Grant Program	25 points
Experience/Knowledge in Civil Engineering and Cost Estimation	
Hazard Mitigation Projects	25 points
Experience/Knowledge in Benefit Cost Analysis	25 points
Experience/Knowledge in Environmental and Cultural Resource considerations	25 points
Total points for required and optional considerations	**100 points**

PART 4 – EVALUATION OF PROPOSALS:

It is the intent of the County to conduct a fair and impartial evaluation of proposals received in response to this RFQ. The purpose of this evaluation will be to select the most qualified Consultant. The evaluation will be conducted in the stages as follows:

A. Selection of Responsive Proposals

The purpose of this stage is to determine whether each proposal meets the specifications of this RFQ and is sufficiently responsive to the RFQ to permit a complete evaluation. A responsive proposal must comply with the instructions stated in this RFQ with regard to content, organization, number of copies and timely delivery.

B. Evaluation of Proposals

During this stage, the Evaluation Team members will individually review each responsive proposal, identifying areas requiring clarification and preliminary scoring the responses. Following these individual reviews, the Evaluation Team will meet to identify questions requiring clarifications, if any. The County will notify Proposers in writing if it has questions/issues requiring clarification. Proposers must respond in writing within a specific time.

C. Selection of Best Qualified Proposer

At the conclusion of the proposal evaluation, the best qualified Proposer will be identified by the Evaluation Team and notified that they have been selected.

D. Recommendation of Award

The Evaluation Team will document the results of the evaluation process and recommend the award of a contract to the selected Consultant.

E. Contract Award

The County will provide a contract agreement to the selected Consultant. Once the contract agreement is signed and returned to the County, an official "Notice to Proceed" will be issued. The Consultant will have ten (10) working days to initiate work after the Notice to Proceed is issued.

Questions concerning this proposal should be addressed to:

The Name of County
Name of Location
Address
City, New Jersey Zip

Proposals may be either mailed or hand-delivered to:

The Name of County
Name of Location
Address
City, New Jersey Zip

The deadline for submission is Month Date, Year at 0:00 PM.

Name of County OEM
OEM
County

PUBLICATION DATES: Month Date, Year; Month Date, Year

Contract for Professional Services

Contract#:_____

This Contract is made as of the_____day of_____, 2013 by and between_____, county government located in the State of New Jersey, by and through its Board of Freeholders, hereinafter referred to as the (CLIENT) , and (name of business) doing business as an individual [ ], a partnership [ ], or a corporation [ ], authorized to do business in the State of New Jersey, hereinafter referred to as the CONSULTANT, whose Federal ID or Social Security Number is_____.

ARTICLE 1 – SERVICES

The CONSULTANTS responsibility under this Contract is to provide professional/consultation services in the area of Hazard Mitigation Planning, as more specifically set forth in the Scope of Work detailed in Exhibit "A".

(CLIENT) representative/liaison during the performance of this Contract shall be _____, whose contact number is_____.

ARTICLE 2 – SCHEDULE

The CONSULTANT shall commence services on_____, 2013.

Reports and other items shall be delivered or completed in accordance with the detailed schedule set forth in Exhibit "A".

Any order issued during the effective date of this contract, but not completed within that period, shall be completed by the CONSULTANT within the time specified in the order. The Contract shall govern the CONSULTANT and (CLIENT) 's rights and obligations with respect to the extent as it the order were completed during the contract's performance period.

ARTICLE 3 – PAYMENT TO CONSULTANT

A. The total amount to be paid by the (CLIENT) under this Contract for services and minor materials shall not exceed $250,000. The CONSULTANT will bill (CLIENT) in progress payments of 10% Start-Up, 30% Upon Acceptance of First Draft, 30% upon acceptance of second draft and 30% upon Final acceptance. Specifics of each payment are outlined in Exhibit "A".

B. Invoices received from the CONSULTANT pursuant to the Contract will be reviewed and approved by the initiating (CLIENT) Department, indicating that services have been rendered in conformity with the Contract and then will sent to the Finance Department for payment. Invoices must reference this contract number.

C. Final Invoice: In order for both parties herein to close their books and records, the CONSULTANT will clearly state "final invoice" on the CONSULTANT'S final/last billing to the (CLIENT) . This certifies that all services have been properly performed and all charges and costs have been

invoiced to the (CLIENT). Since this account will be thereupon be closed, any and other further changes if not properly included on this final invoice are waived by the CONSULTANT.

ARTICLE 4 – TRUTH IN NEGOTIATION CERTIFICATE

Signature of this Contract by the CONSULTANT shall act as the execution of the truth-in negotiation certificate certifying that the wage rates and costs used to determine the compensation provided for in this Contract are accurate, complete and current as of the date of the Contract and no higher than those charged the CONSULTANT'S most favored customer for the same substantially similar service.

The said rates and costs shall be adjusted to exclude any significant sums should _____ determine that the rates and costs were increased due to inaccurate, incomplete or non-current wage rates or due to inaccurate representations of fees paid to outside consultants._____ shall exercise its rights under this "Certificate" within one year (1) following final payment.

ARTICLE 5 – TERMINATION

A. Termination for Default:

_____ may, by written notice to the CONSULTANT, terminate this contract for default in whole or in part (release orders, if applicable) if the CONSULTANT fails to:

1. Provide products or services that comply with the specifications herein or fails to meet the (CLIENT) performance standards.
2. Deliver the supplies or perform the services within the time specified in this contract or any extension.
3. Make progress so as to endanger performance of this contract.
4. Perform any of the other provisions of this contract.

Prior to termination for default, (CLIENT) will provide adequate written notice to the CONSULTANT through the Purchasing Director, affording him/her the opportunity to sure the deficiencies or to submit a specific plan to resolve the deficiencies within ten (10) days (or the period specified in the notice) after receipt of the notice. Failure to adequately cure the deficiency shall result in termination action. Such termination may also result in suspension or debarment of the CONSULTANT in accordance with applicable Louisiana procurement statutes. The CONSULTANT and its sureties (if any) shall be liable for any damage to the (CLIENT) resulting from the CONSULTANT'S default of the contract. This liability includes any increased costs incurred by the (CLIENT) in completing contract performance.

In the event of termination by the (CLIENT) for any cause, the (CLIENT) will have, in no event, any claim against the (CLIENT) for lost profits or compensation for lost opportunities.

After a receipt of a Termination Notice and except as otherwise directed by (CLIENT) the CONSULTANT shall:

A. Stop work on the date and to the extent specified.

B. Terminate and settle all order and subcontracts relating to the performance of the terminated work.

C. Transfer all work in progress, completed work, and other materials related to the terminated work as directed by the (CLIENT).

D. Continue and complete all parts of that work that have not been terminated (if applicable).

Neither CONSULTANT nor (CLIENT) shall be liable, not may cancel this contract for default, when delays arise out of causes beyond the control of CONSULTANT or (CLIENT). Such causes may include, but are not restricted to acts of God, acts of (CLIENT) in sovereign capacity, fires, floods, lightning strikes, epidemics, quarantine restrictions, strikes, freight embargoes, wars, civil disturbances, work stoppage, power failures, laws, regulations, ordinances, acts or orders of any governmental agency or official thereof, and unusually severe weather. In every case, the delay must be beyond the control of the claiming party. If CONSULTANT is delayed in its performance as a result of the above causes, (CLIENT), shall upon written request of CONSULTANT, agree to equitably adjust the provisions of this contract, including price and delivery, as may be affected by such delay. However, this provision shall not be interpreted to limit the (CLIENT)'s right to terminate for convenience.

B. Termination for Convenience

(CLIENT), by written notice, may terminate this contract, in whole or in part, when it is in the best interest for (CLIENT). If this contract is terminated, (CLIENT) shall be liable only for goods and services delivered and accepted. (CLIENT) Notice of Termination may provide the CONSULTANT thirty (30) days prior notice before it becomes effective. However, at (CLIENT)'s sole option, a termination for convenience may be effective immediately and may apply to release orders (if applicable) or to the contract in whole.

ARTICLE 6 – PERSONNEL

The CONSULTANT represents that it has, or will secure at its own expense, all necessary personnel required to perform the services under this Contract. Such personnel shall not be employees of or have any contractual relationship with (CLIENT).

All of the services required hereinunder shall be performed by the CONSULTANT or under its supervision, and all personnel engaged in performing the services shall be fully qualified and, if required, authorized or permitted under state and local law to perform such services.

Any changes or substitutions in the CONSULTANT'S key personnel, as may be listed in Exhibit "A", must be made known to the (CLIENT)'s representative and written approval must be granted by

(CLIENT) before said change or substitution can become effective.

The CONSULTANT warrants that all services shall be performed by skilled and competent personnel to the highest professional standards in the field.

ARTICLE 7 – SUBCONTRACTING

(CLIENT) reserves the right to accept the use of a subcontractor or to reject the selection of a particular subcontractor and to inspect all facilities of any subcontractors in order to make a determination as to the capability of the subcontractor to perform properly under this Contract. The CONSULTANT is encouraged to seek minority and women business enterprises for participation in subcontracting opportunities. If a subcontractor fails to perform or make progress, as required by this Contract, and it is necessary to replace the subcontractor to complete the work in a timely fashion, the CONSULTANT shall promptly do so, subject to acceptance of the new subcontractor by the
(CLIENT) .

ARTICLE 8 – FEDERAL AND STATE TAX

(CLIENT) is exempt from payment of New Jersey State Sales and Use Taxes *(do not know if this law applies)*. (CLIENT) will sign an exemption certificate and submit to the CONSULTANT. The CONSULTANT shall not be exempted from paying sales tax to its suppliers for materials used to fulfill contractual obligations with (CLIENT), not is the CONSULTANT authorized to use (CLIENT) 's Tax Exemption letter in securing such materials.

The CONSULTANT shall be responsible for payment of its own and its share of its employee FICA and Social Security benefits with respect to this Contract.

ARTICLE 9 – AVAILABILITY OF FUNDS

(CLIENT) 's performance and obligation to pay under this Contract is contingent upon an annual appropriation for its purpose.

ARTICLE 10 – INSURANCE

A. Before execution of the contract by (CLIENT) and commencement of the operations and/or services to be provided, during the duration of the contract, the CONSULTANT shall file with (CLIENT) , current certificates of all required insurance on forms acceptable to (CLIENT) , with the Certificate Holder listed as (CLIENT NAME OF BUSINESS) , which shall include the following provisions:
   1. All insurance policies shall be issued by companies authorized to do business under the laws of the State of New Jersey and acceptable to (CLIENT) .
   2. The Certificates shall clearly indicate that the CONSULTANT has obtained insurance of the type, amount and classification as required for strict compliance with the insurance section.

3. No material change or cancellation of the insurance shall he effective without thirty (30) days prior written notice to (CLIENT).

B. The CONSULTANT shall require and ensure that each of its subcontractors providing services hereunder (if any) procures and maintains, until the completion of the services, insurance of the types and to the limits specified herein.

C. Coverages Required:

1. Worker's Compensation – The CONSULTANT shall provide coverage for its employees with statutory workers' compensation limits, and no less than $100,000.00 for Employer's Liability.

2. Commercial General Liability – The CONSULTANT shall provide coverage for all operations including, but not limited to Contractual, Products and Completed Operations, and Personal Injury. The limits shall be not less than $250,000.00, per occurrence, Combined Single Limits (CSL) or its equivalent. The General Aggregate limit shall either apply separately to this Contract or shall be at least twice the required occurrence limit.

3. Business Automobile Liability – The CONSULTANT shall provide coverage for all owned, non-owned and hired vehicles with limits of not less than $25,000, per occurrence, Combined Single Limits (CSL) or its equivalent.

ARTICLE 11 – INDEMNIFICATION

If there are any claims for damages attributable to the negligence, errors or omissions of the CONSULTANT, their agents or employees while providing the services called for herein, it is understood and agreed the CONSULTANT shall indemnify and hold harmless AUDUBON from any and all losses, costs, liability, damages and expenses arising out of such claims or litigation asserted as a result hereof. However, the CONSULTANT shall not be responsible for acts or omissions of (CLIENT), its agents or employees, or of third parties which result in bodily injury to persons or property.

ARTICLE 12 – SUCCESSORS AND ASSIGNS

(CLIENT) and the CONSULTANT each binds itself and its partners, successors, executors, administrators and assigns to the other party of this Contract and to the partners, successors, executors, administrators and assigns of such other party, in respect to all covenants of this Contract. Except as above, neither (CLIENT) nor the CONSULTANT shall assign, sublet, convey or transfer its interest in this Contract without the written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of (CLIENT) which may be a party hereto, not shall it be construed as giving any rights or benefits hereunder to anyone other than (CLIENT) and the CONSULTANT.

ARTICLE 13 – REMEDIES

This Contract shall be governed by the laws of the State of New Jersey. No remedy herein conferred upon any party is intended to be exclusive of any other remedy, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or at equity or by statute or otherwise. No single or partial exercise by any party of any right, power, or remedy hereunder shall preclude any other or further exercise thereof.

ARTICLE 14 – CONFLICT OF INTEREST

The CONSULTANT represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance or services required hereunder, as provided for, the CONSULTANT further represents that no person having any interest shall be employed for said performance.

The CONSULTANT shall promptly notify (CLIENT) in writing be certified mail of all potential conflicts of interest for any prospective business association, interest or other circumstance which may influence or appear to influence the CONSULTANT'S judgment or quality of services being provided hereunder. Such written notification shall identity the prospective business association, interest of circumstance, the nature of work that the CONSULTANT may undertake and request an opinion of (CLIENT) as to whether the association, interest or circumstance would, in the opinion of (CLIENT), constitute a conflict of interest if entered into by the CONSULTANT. (CLIENT) agrees to notify the CONSULTANT of its opinion by certified mail within thirty (30) days of receipt of the notification by the CONSULTANT. If, in the opinion of (CLIENT), the prospective business association, interest or circumstance and it shall be deemed not in conflict of interest with respect to services provided to (CLIENT) by the CONSULTANT under the terms of this Contract.

ARTICLE 15 – EXCUSABLE DELAYS

The CONSULTANT shall not be considered in default by reason of any failure in performance if such failure arises out of causes reasonably beyond the control of the CONSULTANT or its subcontractors and without their fault or negligence. Such causes include, but are not limited to: actions of God; natural or public health emergencies; labor disputes; freight embargoes; and abnormally severe and unusual weather conditions.

Upon the CONSULTANT'S request, (CLIENT) shall consider the facts and extent of any failure to perform the work and, if the CONSULTANT'S failure to perform was without it or its subcontractor's fault or negligence, the Contract Schedule and/or any other affected provision of this Contract shall be revised accordingly; subject to the (CLIENT) 's right to change, terminate, or stop any or all work at any time.

ARTICLE 16 – ARREARS

The CONSULTANT shall not pledge the (CLIENT) 's credit or make it a guarantor of payment or surety for any contract, debt, obligation, judgment, lien, or any form of indebtedness. The CONSULTANT

further warrants and represents that it has no obligation or indebtedness that would impair its ability to fulfill the terms of this contract.

ARTICLE 17 – DISCLOSURE AND OWNERSHIP OF DOCUMENTS

The CONSULTANT shall deliver to (CLIENT) for approval and acceptance, and before being eligible for final payment or any amounts due, all documents and materials prepared by and for (CLIENT) under this Contract.

All oral and written information not in the public domain or not previously known, and all information and data obtained, developed or supplied by the (CLIENT), or at its expense, will be kept confidential by the CONSULTANT and will not be disclosed to any other party, directly or indirectly, without the (CLIENT)'s prior written consent unless required by a lawful order. All drawings, maps, sketches, programs, data base, reports and other data developed, or purchased, under this Contract for or at the (CLIENT)'s expense shall be and remain the (CLIENT)'s property and may be reproduced at the discretion of the (CLIENT).

All covenants, agreements, representations, and warranties made herein, or otherwise made in writing by any party pursuant hereto, including but not limited to any representations made herein relating to disclosure or ownership of documents, shall survive the execution and delivery of this Contract and the consummation of the transactions contemplated hereby.

ARTICLE 18 – INDEPENDENT CONTRACTOR RELATIONSHIP

The CONSULTANT is, and shall be, in the performance of all work services and activities under this Contract, an Independent Contractor, and not an employee, agent or servant of the COUNTY. All persons engaged in any of the work or services performed pursuant to this Contract shall at all times, and in all places, be subject to the CONSULTANT'S sole discretion, supervision, and control. The CONSULTANT shall exercise control over the means and manner in which it and its employees perform the work, and in all respects the CONSULTANT'S relationship and the relationship of its employees to __(CLIENT)__ shall be that of an Independent Contractor and not as employees or agents of __(CLIENT)__.

The CONSULTANT does not have the power of authority to bind (CLIENT) in any promise, agreement or representation other than as specifically provided for in this Agreement.

ARTICLE 19 – CONTINGENT FEES

The CONSULTANT warrants that it has not employed or retrained any company or person, other than a bona fide employee working solely for the CONSULTANT to solicit or secure this Contract and that it has not paid or agreed to pay any person, company, corporation, individual, or firm other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, gift, or any other consideration contingent upon or resulting from the award or making of this Contract.

ARTICLE 20 – ACCESS AND AUDITS

The CONSULTANT shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the work for at least three (3) years after completion of the contract, (CLIENT) shall have access to all records, documents and information collected and/or maintained by others in the course of the administration of the contract. This information shall be made accessible at the CONSULTANT'S local place of business to (CLIENT), including the Comptroller's Office and/or designees, for purposes of inspection, reproduction and audit without restriction. If records are unavailable local, it shall be the CONSULTANT'S responsibility to ensure that all required records are provided to (CLIENT) at the CONSULTANT'S expense.

ARTICLE 21 – NONDISCRIMINATION

The CONSULTANT warrants and represents that all of its employees are treated equally during employment without regard to race, color, religion, physical disabilities, sex, sexual orientation, age, or national origin.

ARTICLE 22 – ENTIRETY OF CONTRACTUAL AGREEMENT

(CLIENT) and the CONSULTANT agree that this Contract sets for the entire agreement between parties, and that there are no promises or understandings other than those stated herein. None of the provisions, terms and conditions contained in this Contract may be added to deleted, modified, superseded, or otherwise altered, except by written instrument executed by the parties hereto.

ARTICLE 23 – ENFORCEMENT COSTS

If any legal action or other proceeding is brought for the enforcement of this Contract, or because of an alleged dispute, breach, default or misrepresentation in connection with any provisions of this Contract, the successful or prevailing party or parties shall be entitled to recover reasonable attorney's fees, court costs and all expenses (including taxes) even if not taxable as court costs (including without limitation, all such fees, costs and expenses incident to appeals), incurred in that action or proceeding, in addition to any other relief to which such party or parties may be entitled.

ARTICLE 24 – AUTHORITY TO PRACTICE

The CONSULTANT hereby represents and warrants that it has and will continue to maintain all licenses and approvals required to conduct its business, and that it will at all times conduct its business activities in a reputable manner. Proof of such licenses and approvals shall be submitted to (CLIENT) upon request.

ARTICLE 25 – SEVERABILITY

If any term or provision of the Contract, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this Contract, or the application of such terms or provision, to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not affected, and every other term and provision of this Contract shall be deemed valid and enforceable to the extent permitted by law.

ARTICLE 26 – MODIFICATIONS OF WORK

(CLIENT) reserves the right to make changes in the work, including alterations, reductions therein or additions thereto. Upon receipt by the CONSULTANT OF (CLIENT)'s notification of a contemplated change, the CONSULTANT shall (1) if requested by (CLIENT), provided an estimate for the increase or decrease in cost due to the contemplated change, (2) notify (CLIENT) of any estimated change in the completion date, and (3) advise (CLIENT) in writing if the contemplated change shall affect the CONSULTANT'S ability to meet the completion dates or schedules of this Contract.

If (CLIENT) so instructs, in writing, the CONSULTANT shall suspend work on that portion of the work affected by a contemplated change, pending (CLIENT)'s decision to proceed with the change.

If (CLIENT) elects to make the change, (CLIENT) shall issue a Modification or Change Order and the CONSULTANT shall not commence work on any such change until written amendment or change order has been issued and signed by each of the parties.

ARTICLE 27 – NOTICE

All notices required in this Contract shall be sent to (CLIENT) shall be mailed to:
(CLIENT)

Street Address
_____, New Jersey [Zip Code]

IN WITNESS WHEREOF, (CLIENT) _____ has made and executed this Contract as hereunto set its hand the day and year above written.

By: _____ [NAME], [TITLE]

Date: _____

By: _____ [NAME], [TITLE]

Date: _____

CONSULTANT: _____ [NAME], [TITLE]
Company Name:

Date: _____

EXHIBIT "A"
REQUEST FOR QUALIFICATIONS

APPENDIX J: LINKAGE PROCEDURES

This Appendix contains the linkage procedures for the Passaic County Hazard Mitigation Plan.

ADMINISTRATIVE PROCESS FOR "LINKAGE" TO THE PASSAIC COUNTY HAZARD MITIGATION PLAN

The development of the Passaic County Hazard Mitigation Plan 2025 Update (the Plan) included the County and all eligible local governments within the defined planning area are included in this plan. Completed jurisdictional annexes are presented in Volume II. Any non-participating local jurisdictions such as Fire Districts, Utility Districts, School Districts, and any other eligible local government as defined in 44 CFR 201.2 within the Passaic County planning area can join this plan as a participating jurisdiction and to ultimately achieve approved status by following the linkage procedures defined in this appendix.

It is assumed that some or all these local jurisdictions may choose to "link" to the Plan at some point in time to gain eligibility for programs under the DMA. In addition, some of the current partnership may not continue to meet eligibility requirements due to the lack of active participation as prescribed by the plan. These "linkage" procedures will define the requirements established by the Passaic County HMP Steering Committee and all planning partners for dealing with the increase or decrease in planning partners linked to this plan. It should be noted that currently non-participating jurisdictions within the defined planning area are not obligated to link to this plan. These jurisdictions can choose to do their own "complete" plan that addresses all required elements of section 201.6 of 44CFR.

INCREASING THE PARTNERSHIP THROUGH LINKAGE

Eligibility

Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period. Eligible jurisdictions located in the planning area may link to this plan at any point during the plan's performance period (5 years after final approval). Eligibility will be determined by the following factors:

- The linking jurisdiction is a local government as defined by the Disaster Mitigation Act.
- The boundaries or service area of the linking jurisdiction is completely contained within the boundaries of the planning area established during the 2025 hazard mitigation plan development process.
- The linking jurisdiction's critical facilities were included in the critical facility and infrastructure risk assessment completed during the 2025 plan development process.

1.1.1 Requirements

It is expected that linking jurisdictions will complete the requirements outlined below and submit their completed template to the lead agency Passaic County Office of Emergency Management for review within six months of beginning the linkage process:

1. The Passaic County Hazard HMP Steering Committee has established an annual window for which linkage to the plan can occur. Linking jurisdictions are instructed to complete the following procedures during this time frame.
2. The current non-participating jurisdiction contacts the Passaic County HMP Coordinator for the Plan and requests a "Linkage Package". The Passaic County HMP Coordinator is:

Maria Dombayci, Coordinator

Passaic County Office of Emergency Management

300 Oldham Rd, Wayne, NJ 07470

(973) 904-3621

Email: Mariado@passaiccountynj.org

3. The Passaic County HMP Coordinator will provide a linkage package that includes:

   - Copy of Volume I and II of the Plan (CDROM).
   - Planning Partner's Expectations Sheet.
   - A Sample "Letter of Intent" to Link to the Plan.
   - A Jurisdictional Template and Instructions.
   - Catalog of Hazard Mitigation Alternatives or the Mitigation Catalog.
   - A copy of Section 201.6 of Chapter 44, the Code of Federal Regulations (44CFR), which defines the federal requirements for a local hazard mitigation plan.

4. The new jurisdiction will be required to review both volumes of the Plan which includes the following key components for the planning area:

   - The Passaic County risk assessment;
   - The plan’s goals and objectives;
   - Plan implementation and maintenance procedures;
   - Catalog of potential mitigation actions; and
   - County-wide initiatives.

Once this review is complete, the jurisdiction will complete its specific jurisdictional annex by following the template and its instructions for completion provided by the Passaic County HMP Coordinator. Technical assistance can be provided upon request by completing the request for technical assistance (TA) form provided in the linkage package. This TA may be provided by the Passaic County HMP Coordinator or any other resource within the Planning Partnership such as a member of the HMP Steering Committee or a currently participating jurisdiction. The Passaic County HMP Coordinator will determine who will provide the TA and the possible level of TA based on resources available at the time of the request.

5. The new jurisdiction will also be required to develop a public involvement strategy that ensures their public's ability to participate in the plan development process. At a minimum, the new jurisdiction must make an attempt to solicit public opinion on hazard mitigation at the onset of this linkage process and a minimum of one public meeting to present their draft jurisdiction specific annex for comment, prior to adoption by the governing body. The Planning Partnership will have available resources to aid in the public involvement strategy such as the Plan website. However, it will be the new jurisdiction’s responsibility to implement and document this strategy for incorporation into their annex.

   It should be noted that the Jurisdictional Annex templates do not include a section for the description of the public process. This is because the original partnership was covered under a uniform public involvement strategy that covered the operational area that is described in Volume I of the plan. Since the new partner was not addressed by that strategy, they will have to initiate a new strategy, and add a description of that strategy

to their annex. For consistency, new partners are encouraged to follow the public involvement format utilized by the initial planning effort as described in Volume I of the Plan.

6. Once their public involvement strategy is completed and they have completed their template, the new jurisdiction will submit the completed package to the Passaic County HMP Coordinator for a pre-adoption review to ensure conformance with the regional plan format.
7. The Passaic County HMP Coordinator will review for the following:

   - Documentation of public involvement and mitigation action development strategies;
   - Conformance of template entries with guidelines outlined in instructions;
   - Chosen actions are consistent with goals, objectives, and mitigation catalog of Passaic County Hazard Mitigation Plan; and
   - Designated point of contact.

The Passaic County HMP Coordinator may utilize members of the HMP Steering Committee or other resources to complete this review. All proposed linked annexes will be submitted to the HMP Planning Committee for their review and comment prior to submittal to the New Jersey Office of Emergency Management (NJOEM).

8. Plans approved and accepted by the HMP Steering Committee will then be forwarded to NJOEM for review with cover letter stating the forwarded plan meets local approved plan standards and whether the plan is submitted with local adoption or for criteria met/plan not adopted review.

9. NJOEM will review plans for state and federal compliance. Non-compliant plans are returned to the jurisdiction for correction. Compliant plans are forwarded to FEMA Region II office for review with annotation as to the adoption status.

10. FEMA Region II reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. Region II notifies new jurisdiction of results of review with copies to NJOEM and approved planning authority.

11. New jurisdiction corrects plan’s shortfalls (if necessary) and resubmits to NJOEM through the approved plan lead agency.

12. For plans with no shortfalls that have not been adopted from the Region II review or outstanding corrected shortfalls, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards adoption resolution to Region II with copies to lead agency and NJOEM.

13. Region II Director notifies new jurisdiction governing authority of plan approval.

14. The new jurisdiction plan is then included with the Passaic County HMP, and the linking jurisdiction is committed to participate in the ongoing plan implementation and maintenance identified in Volume I of the HMP.

APPENDIX K: DAM SUPPLEMENT

This section contains information and details to support information provided in Chapter **Error! Reference source not found.** (County Profile) and Chapter **Error! Reference source not found.** (Dam Failure), which provide the distribution of dams located within Passaic County and its municipalities, along with potential impacts of high hazard dams as discussed in the Emergency Action Plans (EAP) for those dams. Due to the sensitive nature of this information, details have been redacted. Contact the HMP Coordinator, Maria Dombayci, Passaic County Office of Emergency Management, at Mariado@passaiccountynj.org for more information.

LOCATION

There are 134 dams located in Passaic County. Of the 134 dams located in Passaic County, 50 are high hazard dams as shown in Table K-1.

Table K-1. High Hazard Dams in Passaic County

High Hazard Dam Names per Jurisdiction	
Municipality	**Dam Name**
Bloomingdale Borough	Post Brook Dam
	Green Swamp #1 Dam
	Irish Brook Dam
	Kampfe Lake Dam
	Star Lake Upper Dam
Little Falls Township	Cedar Grove North Res Dam
North Haledon Borough	Haledon Reservoir Dam
	Oldham Pond Dam
Pompton Lakes Borough	Pompton Lakes Dam
Ringwood Borough	Sallys Pond Dam
	Monksville Dam
	Furnace Road Dam
	Skyline Lake #2 (Upper) Dam
	Skyline Lake #1 (Lower) Dam
	Erskine Upper Lake Dam
	Cupsaw Lake Dam
Wanaque Borough	Raymond Dam
	Green Swamp #3 Dam
	Midvale Dam
	Green Swamp #2 Dam

	Overflow Weir Dam
	Wolf Den Dam
	Green Swamp #4 Dam
Wayne Township	Pines Lake Dam
	Point View Dam
	Packanack Lake Dam
	Preakness Hills C.C. Dam No. 1
	Lionshead Lake Dam
West Milford Township	Echo Lake Spillway Dam
	Greenwood Lake Dam
	River Wall Dam
	Upper Mount Glen Lake Dam
	High Crest Lake Dam
	New Jersey No Name # 40 Dam
	Lower Mount Glen Lake Dam
	Macopin Reservoir Dam
	Green Turtle Pond Dam
	Upper Greenwood Lake Dam
	Lookover Lake Dam
	West Milford Lake Dam
	Charlotteburg Dam
	Gordon Lakes Dam
	Echo Lake Intake Dam
	Clinton Reservoir Dam
	Lake Arcadia Dam #1
	Pinecliff Lake Dam
	Lindy's Lake Dam
Woodland Park Borough	Highland Lake Dam
	New Street Reservoir Dam
	Great Notch Reservoir Dam

Source: NYS DC 2024

To fully assess Passaic County's risk to dam failure, a quantitative review would need implemented utilizing the probable maximum flood inundation areas. For this planning process, these dam failure inundation areas were

unavailable. As an additional mitigation action, Passaic County OEM will work with NJDEP and dam owners to collect up to date digital versions of Emergency Action Plans and dam failure inundation mapping/data.

IMPACT ON LIFE, HEALTH, AND SAFETY

The impact of dam and levee failure on life, health, and safety is dependent on several factors such as the class of dam/levee, the area that the dam/levee is protecting, the location of the dam/levee, and the proximity of structures, infrastructure, and critical facilities to the dam or levee structure. The level of impact that a failure would have can be predicted based upon the hazard potential classification as rated by the United States Army Corps of Engineers (USACE n.d.). Table K-1 outlines the recommended hazard classifications.

Table K-1. United States Army Corps of Engineers Hazard Potential Classification

Hazard Category(a)	Direct Loss of Life (b)	Lifeline Losses (c)	Property Losses (d)	Environmental Losses (e)
Low	None (rural location, no permanent structures for human habitation)	No disruption of services (cosmetic or rapidly repairable damage)	Private agricultural lands, equipment, and isolated buildings	Minimal incremental damage
Significant	Rural location, only transient or day-use facilities	Disruption of essential facilities and access	Major public and private facilities	Major mitigation required
High	Certain (one or more) extensive residential, commercial, or industrial development	Disruption of essential facilities and access	Extensive public and private facilities	Extensive mitigation cost or impossible to mitigate

a. Categories are assigned to overall projects, not individual structures at a project.
b. Loss-of-life potential is based on inundation mapping of area downstream of the project. Analyses of loss-of-life potential should take into account the population at risk, time of flood wave travel, and warning time.
c. Lifeline losses include indirect threats to life caused by the interruption of lifeline services from project failure or operational disruption; for example, loss of critical medical facilities or access to them.
d. Property losses include damage to project facilities and downstream property and indirect impact from loss of project services, such as impact from loss of a dam and navigation pool, or impact from loss of water or power supply.
e. Environmental impact downstream caused by the incremental flood wave produced by the project failure, beyond what would normally be expected for the magnitude flood event under which the failure occurs.

Source: USACE n.d.

The entire population residing within a dam failure inundation zone is considered exposed and vulnerable to an event. The potential for loss of life is affected by the capacity and number of evacuation routes available to populations living within these areas. Those most at risk include the economically disadvantaged and the population over the age of 65. According to the 2022 American Community Survey data, there are 68,995 persons living below the poverty level and 78,440 persons over the age of 65 within Passaic County. These populations are more at risk during a dam failure event because economically disadvantaged populations are likely to evaluate their risk and make the decision to evacuate based upon the net economic impact to their family, while elderly populations are likely to seek or need medical attention. The availability of medical attention may be limited due to isolation during a flood event and other difficulties in evacuating. There is often limited warning time for a dam failure event. Populations without adequate warning of the event are highly vulnerable.

IMPACT ON GENERAL BUILDING STOCK

Buildings located downstream of a dam are at risk to damages should there be a failure. Downstream inundation areas were not available to quantify any potential losses to structures. Properties located closest to the dam inundation area have the greatest potential to experience the largest, most destructive surge of water. The overall impact of flooding damages caused by dam failure will vary depending on the depth of flooding and velocity of the surge.

Dam failure can cause severe downstream flooding and may transport large volumes of sediment and debris, depending on the magnitude of the event. Widespread damage to buildings and infrastructure affected by an event would result in large costs to repair these locations. In addition to physical damage costs, businesses can be closed while flood waters retreat, and utilities are returned to a functioning state.

IMPACT ON CRITICAL FACILITIES AND LIFELINES

Dam failures may also impact critical facilities and infrastructure located in the downstream inundation zone. Consequentially, dam failure can cut evacuation routes, limit emergency access, and/or create isolation issues. Dam failure can cause severe downstream flooding and may transport large volumes of sediment and debris, depending on the magnitude of the event. Further, utilities such as overhead power lines, cable and phone lines could also be vulnerable. Loss of these utilities could create additional isolation issues for the inundation areas.

IMPACT ON THE ECONOMY

Severe flooding that follows an event like a dam failure can cause extensive structural damage and withhold essential services. The cost to recover from flood damages after a surge will vary depending on the hazard risk of each dam.

Severe flooding that follows an event like a dam failure can cause extensive damage to public utilities and disruptions to delivery of services. Loss of power and communications may occur and drinking water and wastewater treatment facilities can become temporarily out of operation. Debris from surrounding buildings can accumulate should the dam mimic major flood events, such as the 1-percent annual chance flood event that is discussed in Chapter 9 (Flood).

IMPACT ON THE ENVIRONMENT

The environmental impacts of a dam failure can include significant water-quality and debris-disposal issues or severe erosion that can impact local ecosystems. Flood waters can back up sanitary sewer systems and inundate wastewater treatment plants, causing raw sewage to contaminate residential and commercial buildings and the flooded waterway. The contents of unsecured containers of oil, fertilizers, pesticides, and other chemicals may get added to flood waters. Hazardous materials may be released and distributed widely across the floodplain. Water supply and wastewater treatment facilities could be offline for weeks. After the flood waters subside, contaminated and flood-damaged building materials and contents must be properly disposed of. Contaminated sediment must be removed from buildings, yards, and properties.