



Morris County, NJ Hazard Mitigation Plan Update 2025





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SECTION 1: INTRODUCTION AND PLANNING PROCESS

1.1 INTRODUCTION

Hazard mitigation is defined as any action taken before, during, or after a disaster to permanently eliminate or reduce the long-term risk to human life and property. Hazard mitigation is crucial to a comprehensive emergency management program, working alongside preparedness, response and recovery efforts. This plan will help participating jurisdictions lower their risk to natural hazards and enhance their resilience by identifying local policies and actions to reduce losses.

The 2025 Morris County Hazard Mitigation Plan update provides a framework to enhance the general well-being, safety and resilience of residents and communities across Morris County. This plan considers the impact of natural hazards across the planning area, reviews current levels of capability relevant to hazard mitigation, and identifies a comprehensive hazard mitigation strategy to buy down levels of risk.

1.2 PLAN GOALS AND OBJECTIVES

The planning process included a review and update of the prior mitigation goals and objectives as a basis for the planning process and selection of appropriate mitigation actions addressing all hazards of concern. Upon consideration, participating jurisdictions opted not to change the goals from the 2020 plan update. The goals are:

Goal 1. Reduce the impacts of hazards on people, property, the environment and the economy.

Goal 2. Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact.

Goal 3. Improve data collection, use and sharing to reduce the impact of hazards.

Goal 4. Improve capabilities, coordination and opportunities at municipal and county levels to plan and implement hazard mitigation projects, programs and activities.

Goal 5. Pursue opportunities to mitigate repetitive loss properties and other appropriate hazard mitigation projects, programs and activities.

1.3 ORGANIZATION OF THE HAZARD MITIGATION PLAN

The Morris County HMP update is organized as follows:

Section 1. Introduction and Planning Process: Overview of participants, planning process and information regarding adoption of the HMP by Morris County and each participating jurisdiction. Description of the HMP methodology and development process; Local Planning Committee and stakeholder involvement efforts; and a description of how this HMP will be incorporated into existing programs.

Section 2. Profile and Capability Assessment: Overview of Morris County, including: (1) physical setting, (2) land use, (3) land use trends, (4) population and demographics, (5) general building stock and (6) critical facilities and lifelines. 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.

Section 3. Hazard Identification and Risk Assessment: Documentation of the hazard identification and hazard risk ranking process, hazard profiles, and findings of the vulnerability assessment (estimates of the impact of hazard events on life, safety, health, general building stock, critical facilities, the economy); description of the status of local data; and planned steps to improve local data to support mitigation planning.



Section 4. Mitigation Strategy: Information regarding the mitigation goals and objectives in response to priority hazards of concern and the process by which Morris County and local mitigation strategies have been developed or updated.

Section 5. Plan Maintenance Procedures: System established to continue to monitor, evaluate, maintain, and update the HMP.

Volume II of this plan includes the following sections:

Section 6. Jurisdictional Annexes: Jurisdiction-specific annex for Morris County and each participating jurisdiction containing their hazards of concern, hazard ranking, capability assessment, mitigation actions, action prioritization specific only to Morris County or that jurisdiction, progress on prior mitigation activities (as applicable), and a discussion of prior local hazard mitigation plan integration into local planning processes.

Appendices include the following:

Appendix A. Plan Adoption: Resolutions from the County and each jurisdiction included as each formally adopts the HMP update.

Appendix B. Process Documentation: Matrix to give a broad overview of who attended meetings and when input was provided to the HMP update, as well as Letters of Intent to Participate described in Section 2 (Planning Process), annex sign-off sheets discussed in Section 6 (Mitigation Strategy) and additional worksheets submitted during workshops conducted throughout the planning process. Agendas, attendance sheets, minutes, and other documentation (as available and applicable) of planning meetings convened during the development of the plan. 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 process.

Appendix C. Plan Maintenance Tools: Examples of plan review tools and templates available to support annual plan review.

1.4 PLANNING PROCESS OVERVIEW

1.4.1 UPDATE FOCUS AREAS

The Morris 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 local and regional agencies and staff, as well as stakeholders, federal and state agencies, and the residents of the County. The Local Planning Committee (LPC) solicited information from local agencies and individuals with specific knowledge of certain hazards and past historical events, as well as considering planning and zoning codes, ordinances, and other recent planning decisions. The hazard mitigation strategies identified in this HMP have been developed through an extensive planning process involving local, county and regional agencies, County residents and stakeholders.

- Documenting progress of each participating jurisdiction
- Updating information as necessary
- Incorporating hazard information into the hazard identification and risk assessment (HIRA)
- Evaluating and strengthening the hazard mitigation strategy
- Prioritizing engagement with traditionally underrepresented populations.
- Emphasizing climate change's influence on hazards and their impacts.
- Refining the 2020 plan for improved clarity and efficiency.
- Ensuring that relevant information in all sections was updated.



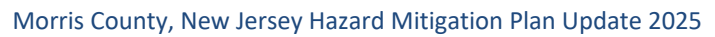
1.4.2 DEFINING THE PLANNING AREA

Table 1 shows all jurisdictions participating in the plan update.

Table 1. Participating Jurisdictions

Jurisdictions		
Morris County		
Boonton, Town	Jefferson, Township	Mount Olive, Township
Boonton, Township	Kinnelon, Borough	Mountain Lakes, Borough
Butler, Borough	Lincoln Park, Borough	Netcong, Borough
Chatham, Borough	Long Hill, Township	Parsippany Troy Hills, Township
Chatham, Township	Madison, Borough	Pequannock, Township
Chester, Borough	Mendham, Borough	Randolph, Township
Chester, Township	Mendham, Township	Riverdale, Borough
Denville, Township	Mine Hill, Township	Rockaway, Borough
Dover, Town	Montville, Township	Rockaway, Township
East Hanover, Township	Morris Plains, Borough	Roxbury, Township
Florham Park, Borough	Morris, Township	Victory Gardens, Borough
Hanover, Township	Morristown, Town	Washington, Township
Harding, Township	Mount Arlington, Borough	Wharton, Borough

PUBLIC REVIEW DRAFT - NOT FINAL

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1.4.3 LOCAL PLANNING COMMITTEE

In April 2023, the Morris County Office of Emergency Management (OEM) initiated the planning process, inviting municipalities to join and designate points of contact (POC) for the Planning Committee. Municipalities received the Planning Partner Expectations and were requested to declare their intent to participate through a Letter of Intent to Participate (LOIP). They were also asked to identify a primary and secondary planning POC for the Planning Committee and represent the interests of their respective community. In addition, each municipality's Floodplain Administrator (FPA) was identified in the LOIP and encouraged to actively participate in the planning process.

Morris County developed a Local Planning Committee (LPC) to provide guidance and direction to the planning effort. As the primary liaison for all participating jurisdictions and interest groups, the LPC played a pivotal role in facilitating the development of the HMP. The committee's efforts were focused on creating a plan that would receive political support and acceptance from the planning area's constituency. All municipalities participating in the plan update provided a primary point of contact (POC), alternate POC and their Floodplain Administrator to represent each community on the LPC. The LPC's responsibilities included:

- Participation in meetings and the planning process.
- Understanding risks and how they impact each community and the county.
- Formulating at least one new or continuing hazard mitigation action for the updated hazard mitigation strategy.
- Reviewing and commenting on draft plan documents.
- Adopting the plan once it receives the "Approved Pending Adoption" designation from the Federal Emergency Management Agency (FEMA).

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The LPC held three meetings during the planning process:

- **Meeting 1** served as the kickoff meeting to the process and was held remotely via Microsoft Teams. During this meeting, the LPC discussed the HMP, reviewed process requirements and began the process on status reporting on community capabilities and 2020 mitigation action progress.
- **Meeting 2** focused on the preliminary results of the hazard identification and risk assessment (HIRA) update. Results were presented, and the LPC provided feedback on each hazard which was included in the final draft. Following this meeting, a full draft of the HIRA was provided to the LPC for review and comment. This meeting was held on-site in Morris County.
- **Meeting 3** focused on developing and updating the hazard mitigation strategy for each participating jurisdiction. The LPC discussed types of mitigation actions, requirements for each action, and the process for including new mitigation actions in the updated mitigation strategy. This meeting was held remotely. Additional follow-up meetings were held with any community that requested one

Following Meeting 3, additional follow-up meetings were held with any community that requested one to provide community-specific support to identify and develop mitigation actions.

1.4.4 PUBLIC AND STAKEHOLDER OUTREACH

Public engagement is a key component to the HMP's success. Public outreach was accomplished both at the beginning and the end of the process. An electronic survey regarding hazard mitigation was released on September 25, 2023, utilizing the web-based Microsoft Forms survey tool. The survey period ran until Friday, October 13, 2023. The survey was advertised by the county and jurisdictions within. A full accounting of advertising for the public survey is included in the Planning Process Appendix to this plan.



Efforts were made by Morris County and participating jurisdictions to focus on including traditionally underserved populations (TUP) into the planning effort. To this end, the LPC identified key TUPs and focused on advocacy groups and organizations that support these populations. Two large-scale meetings were held with these advocacy groups, and an amended survey was sent out to collect input on hazards and how they impact different TUPs. This process ran from April 1 to April 19, 2024.

After completing the draft plan, it was opened for public review from March 31 through April 11, 2025. The plan was posted for online access, and a survey was developed to collect comments. Proofs of publication are located in the Planning Process Appendix. Comments received were reviewed and integrated as appropriate.

Stakeholders are the individuals, agencies, and jurisdictions that have a vested interest in the recommendations of the HMP, including all planning partners. The planning process prioritized extensive representation from regional, county and local areas. A detailed list of stakeholders was compiled with the Planning Partnership's assistance to ensure diverse perspectives. Consistent and proactive engagement with these stakeholders was a key focus throughout the planning process. This HMP update includes information and input provided by these stakeholders where appropriate, as identified in the references.

Table 2. Stakeholders

Stakeholders

1.4.5 REVIEWING COMMUNITY CAPABILITIES

Participating jurisdictions were provided the opportunity to review, update and add to the community capabilities identified in the previous plan; these capabilities were used as a baseline to identify areas upon which to build for the hazard mitigation strategy. Communities reported on capabilities in the following target areas:

- Plans
- Building codes, permitting, and inspections
- Land use planning and ordinances
- Administration
- Staff
- Technical capabilities
- Funding resources
- Programmatic and organizational capabilities

The outcome of the capability assessment surveys can be found in each community-specific annex in this document.



1.4.6 CONDUCTING A RISK ASSESSMENT

A risk assessment is a calculation of the threat, vulnerability, and consequence of natural hazards that impact the participating jurisdictions in the planning area. The following hazards were identified and assessed during the plan update process:

- Drought
- Earthquake
- Extreme Temperature (heat and cold)
- Flood (including urban flooding)
- Geological Hazards (landslide, subsidence, and sinkholes)
- Hazardous Materials (Fixed Sites and In Transit)
- Severe Weather (Hurricanes, Tropical Storms, High Winds, Tornadoes, Thunderstorms, Hail, Lightning)
- Severe Winter Storm (Heavy Snow, Blizzards, Ice Storms)
- Wildfire

Following an initial evaluation of hazard risk, the LPC discussed the results during the second planning meeting and added comment and context to the final assessment. Due to the length of the planning process, the risk assessment was re-reviewed and updated in December 2024 to ensure the latest information was incorporated. Further information on the risk assessment process can be found in Section 3.

1.4.7 DEVELOPING A HAZARD MITIGATION STRATEGY

The hazard mitigation strategy was structured in two phases. Initially, communities were provided a list of the hazard mitigation actions from the 2020 HMP. Communities were asked to assess their progress, employing a four-option status indicator to report updates:

- Not started
- In progress
- Completed
- Deleted

Communities were also asked to provide background information on each action where applicable, identifying:

- If an action was *completed*, when was it completed? Has the community seen any benefits from the project?
- If an action has not been started, why not?
- If an action is in progress, how much progress has been made? When is the project slated for completion?
- If an action is deleted, why?

This evaluation process enabled communities to establish a foundation of ongoing initiatives for the revised hazard mitigation strategy. After completing the HIRA, the LPC focus shifted to developing new hazard mitigation actions to enhance the 2025 strategy. Communities received instructions on creating these new actions, and what supporting information would be necessary for each action included in the plan. Customized planning support meetings were available for communities that requested additional engagement in developing mitigation strategies. These efforts are reflected in Section 4 of this plan.

1.4.8 KEEPING THE PLAN CURRENT

To ensure the plan remains a living document, the group discussed and confirmed plan maintenance procedures, which are located in Section 5. The plan maintenance process includes:



- Plan monitoring – tracking the implementation of the plan over time.
- Plan evaluation – assessing the effectiveness of the plan at achieving its stated purpose and goals.
- Plan updating – reviewing and revising the plan over its five (5)-year life cycle.
- Plan implementation in conjunction with other planning mechanisms.
- Continued public involvement.

1.4.9 REVIEW AND ADOPTION

Following the development of the complete plan draft, the plan was released for review and comment.

- LPC Review Period (July 22, 2024 – August 2, 2024)
- Public Review Period (March 31 – April 11, 2025)

Once the plan receives the Federal Emergency Management Agency’s (FEMA) “Approved Pending Adoption” designation, Morris County and participating jurisdictions will be able to formally adopt the plan. The plan will remain in effect for five (5) years once approved. Adoptions are included as appendices to this document.

1.4.10 MAPPING AND ANALYSIS

Maps and analysis from the previous plan were reviewed at the outset of the planning process and the need for updates was assessed based on changes to base data. At the time, discussion with Morris County OEM and Morris County GIS revealed that due to the recency of analysis and mapping from the previous plan and the relatively little change to data since, updates were not needed.

Maps and analysis were re-assessed halfway through the planning process; data updates were identified and mapping and analysis was updated as appropriate. Where items were not updated, data is considered comparable to the data used in the previous plan and is not expected to yield any new results. This plan reflects the best available data to identify where risks exist, how they are understood, and how they may ultimately be mitigated by the county and its participating jurisdictions as they move forward.



SECTION 2: COUNTY PROFILE

2.1 INTRODUCTION

This profile describes the general information of the County (physical setting, population and demographics, general building stock, and land use and population trends) and critical facilities located within Morris County. Specific profile information is presented and analyzed to develop an understanding of the study area, including the economic, structural, and population assets at risk and the particular concerns that may be present related to hazards analyzed.

2.2 GENERAL INFORMATION

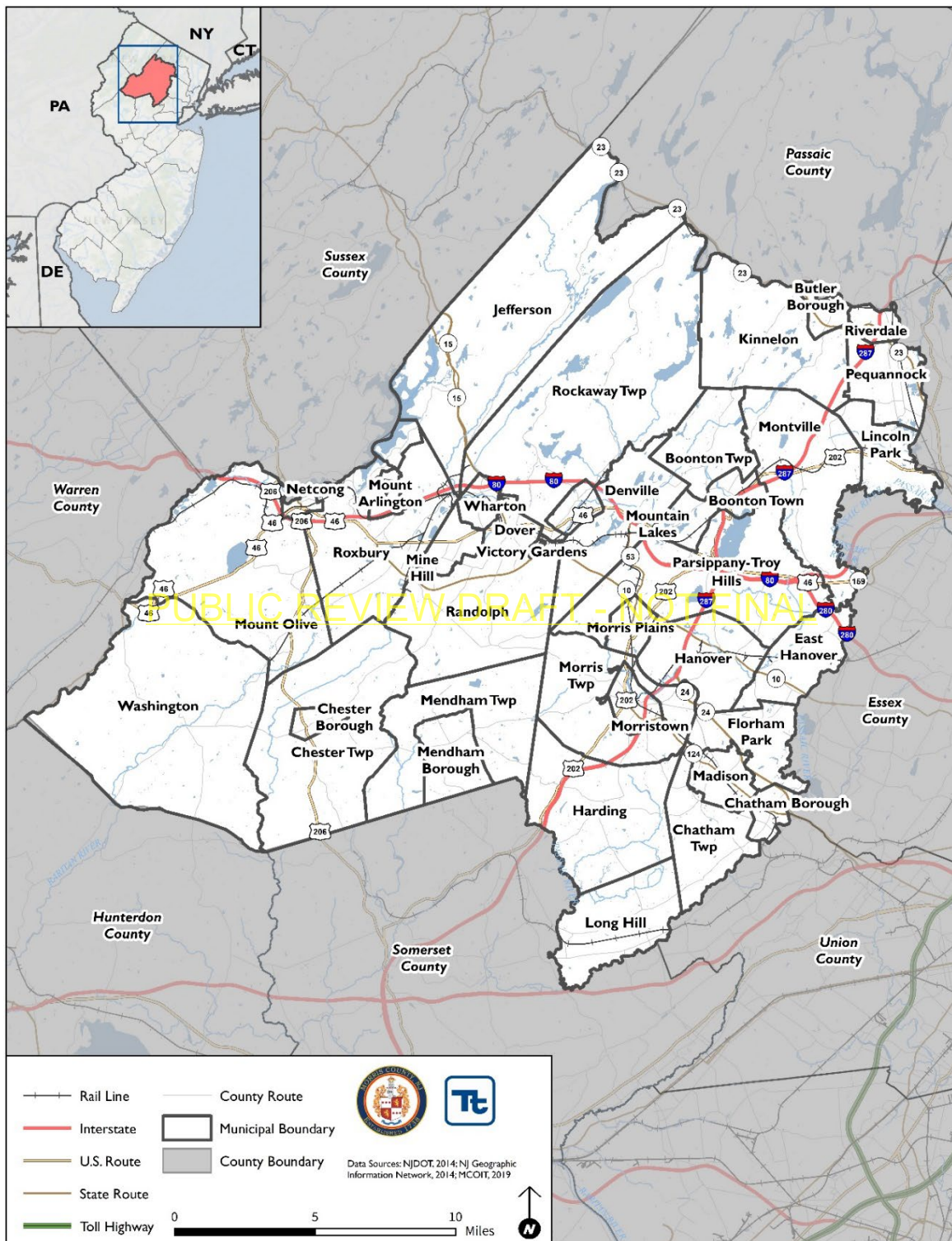
Morris County is one of the fastest growing counties in the New York-New Jersey-Connecticut metropolitan region. It is located amid rolling hills, broad valleys, and lakes approximately 30 miles northwest of New York City. Today, Morris County is the seventh largest county in New Jersey and home to major shopping centers, large residential areas, and colleges and universities. The county contains thirty-nine municipalities.

2.2.1 PHYSICAL SETTING

2.2.1.1 LOCATION

Morris County is located in the north-central section of New Jersey and encompasses a total area of approximately 482 square miles. The County is bordered by Passaic County to the northeast, Essex County to the east, Union County to the southeast, Somerset County to the south, Hunterdon County to the southwest, Warren County to the west, and Sussex County to the north/northwest. Most of the County's borders are riverine borders. The northern boundary is characterized by the Pequannock River. The Pompton River and the eastern branch of the Passaic River serves as the eastern border for the County. The western border is formed by the Musconetcong River.

Figure 2. Overview Map of Morris County



Source: 2020 Morris County Hazard Mitigation Plan



2.2.2 HYDROGRAPHY AND HYDROLOGY

Numerous ponds, lakes, creeks, and rivers make up the waterscape of Morris County, including the Musconetcong River, North and South Branch Raritan River, Northern and Southern Tributary, Passaic River, Peapack River, Pequannock River, Pinch Brook, Pompton River, Primrose Brook, Ramapo River, Rockaway River, Silver Brook, Spring Garden Brook, Stephensburg Brook, Stonehouse Brook, Stony Brook, Susquehanna Brook, Tanglewood Brook, Tanners Brook, Troy Brook, Watnong Brook, Weldon Brook, West Brook, West Ditch, Western Tributary, Whippany River, White Meadow Brook, and Wills Brook.

The rivers and streams within Morris County flow generally southwestward, following the trends of the Highlands. Exceptions to this are the east flowing Pequannock River, the Rockaway River which flows south out of Berkshire Valley and then east through a gap in the eastern Highlands, and the Passaic River which rises in southern Mendham Township, flows north through the Watchung Valley and turns eastward at Montville towards the Great Notch, Little Falls and Paterson.

2.2.2.1 WATERSHEDS

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. Morris County is encompassed by three major watershed basins: Delaware, Raritan and Passaic. Each of which are made up of smaller watersheds. Details regarding these water basins and watersheds are described below.

2.2.2.1.1 Delaware River Basin

The Delaware River Basin rises in the Catskill Mountains in New York State and travels 330 miles through 13,500 square miles of rural and urban landscapes and empties into the Atlantic Ocean. In Morris County, this Basin only has a small percentage of area. The Musconetcong Watershed is the only watershed in Morris County that is part of this Basin.

2.2.2.1.2 Passaic River Basin

The Passaic River Basin drains approximately 935 square miles of northern New Jersey and southern New York State. The Basin is divided into three regions, Highlands, Central Basin, and Lower Valley due to the amount and character of flooding within the Basin. The Highlands section of the Passaic River Basin drains approximately 489 square miles and most of the major tributaries to the Passaic River drain from the Highlands. These tributaries include the Whippany, Rockaway, Pequannock, Wanaque, Ramapo, and Pompton Rivers. These waterbodies are characterized by flash floods due to narrow and steep sided valleys.

2.2.2.1.3 Raritan River Basin

The Raritan River basin is the largest drainage area located entirely in New Jersey. The Basin contains portions of Morris, Hunterdon, Somerset, Mercer, Union, Middlesex, and Monmouth Counties. Approximately 1,100 square miles of the State's land drain into the Raritan Bay via the Raritan River and its tributaries while an additional 122 square miles is drained by the Shrewsbury and Navesink Rivers which empty into Sandy Hook Bay.



2.2.2.2 WATERSHED MANAGEMENT AREAS

The New Jersey Department of Environmental Protection (NJDEP) divided New Jersey into five water regions: the Northeast, Raritan, Northwest, Lower Delaware and Atlantic Coastal. Each water region is then divided into three to five watershed management areas (WMAs), for a total of 20 WMAs. Each WMA encompasses a particular group of major rivers and each consists of numerous smaller watersheds. Morris County is located within the Raritan, Northwest and Northeast water regions. Additionally, the County is located in five of the 20 WMAs, which are described below.

2.2.2.2.1 WMA 1: Upper Delaware

WMA 1 is also known as the Upper Delaware River Watershed and encompasses 746 square miles in the mountainous northwestern corner of the State. WMA 1 includes portions of Sussex, Morris, Hunterdon Counties and all of Warren County. In total, it contains 54 municipalities in New Jersey.

2.2.2.2.2 WMA 3: Pompton, Pequannock, Wanaque, Ramapo

WMA 3 is located within the water-rich Highlands Province of New Jersey. The Pequannock, Wanaque and Ramapo Rivers all flow into the Pompton River. WMA 3 contains some of the State's major water supply reservoir systems including the Wanaque Reservoir, the largest surface water reservoir in New Jersey.

2.2.2.2.3 WMA 4: Lower Passaic, Saddle River

WMA 4 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 make up WMA 4: the Lower Passaic River Watershed and Saddle River Watershed.

2.2.2.2.4 WMA 6: Upper and Mid Passaic, Whippany, Rockaway

WMA 6 represents the area drained by waters from the upper reaches of the Passaic River Basin including the Passaic River from its headwaters in Morris County to its confluence with the Pompton River. WMA 6 is characterized by extensive suburban development and reliance upon groundwater sources for water supply.

2.2.2.2.5 WMA 8: North and South Branch Raritan

WMA 8 includes the North and South Branches of the Raritan River and their tributaries. Large portions of Somerset, Hunterdon, and Morris Counties are included in this land area. Land use in the North Branch Raritan River Watershed is primarily rural, woodland and agricultural with scattered areas of commercial and residential but there is intense development along the major road corridors. Land use in the South Branch Raritan River Watershed is mostly agricultural, but suburban-industrial development is increasing at a rapid rate.

2.2.3 TOPOGRAPHY AND GEOLOGY

Hills and valleys run east-west, with rocky outcroppings as high as 1,000 feet above sea level in the County. Morris County is located within two physiographic provinces: the Highlands Province from to the north and west and the Piedmont Province to the east and southeast.

The Highlands portion of the county is characterized by a series of discontinuous rounded ridges separated by deep and narrow valleys. In general, this area of the County is located high above sea level. Landforms within the Highlands include generally northeast trending ridges and valleys gradually dropping in elevation from west to east. A 200 to 400-foot border escarpment on the eastern edge, traversing the County from the Borough of Kinnelon through Morristown and separates the Highlands from the adjacent Piedmont. Morris County is mostly



encompassed by the Highlands Province and consists mainly of Precambrian gneissic bedrock underlain by limestone, sandstone, or shale bedrock in the area's valley regions.

The Piedmont portions of Morris County are characterized by low rolling plains divided by higher ridges. In the area of the County where the Highlands Province meets the Piedmont Province, the land is approximately 300 to 400 feet above sea level. The land then slopes downward towards the south and eastern portions of the county. In the Piedmont Province area of the County, the ground mainly consists of soft red shale also known as Brunswick shale or sandstone bedrock.

2.2.4 CLIMATE

The climate of Morris County is mostly a temperate continental climate with some moderate maritime influences. Winter climate is controlled by polar continental air masses; summer climate by tropical air masses moving up over the United States from the Gulf of Mexico. The average annual precipitation is 46.17 inches. The average annual snowfall is 28.0 inches. The average temperature is 48.9°F, which is lower than the New Jersey average temperature of 51.9°F.

2.2.5 LAND USE, LAND COVER, AND LAND USE TRENDS

Local zoning and planning authority are provided for under the New Jersey Municipal Land Use Law, which gives municipalities zoning and planning authority. The DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

This plan provides a general overview of population and land use and types of development occurring within the study area. An understanding of these development trends can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure.

Morris County is one of the largest counties in the State and has a diverse landscape; the majority of the County is either forested or developed. Since 1986, the County has experienced a decrease in agricultural, barren, forest and wetlands. Table 3 provides a land use summary for Morris County.

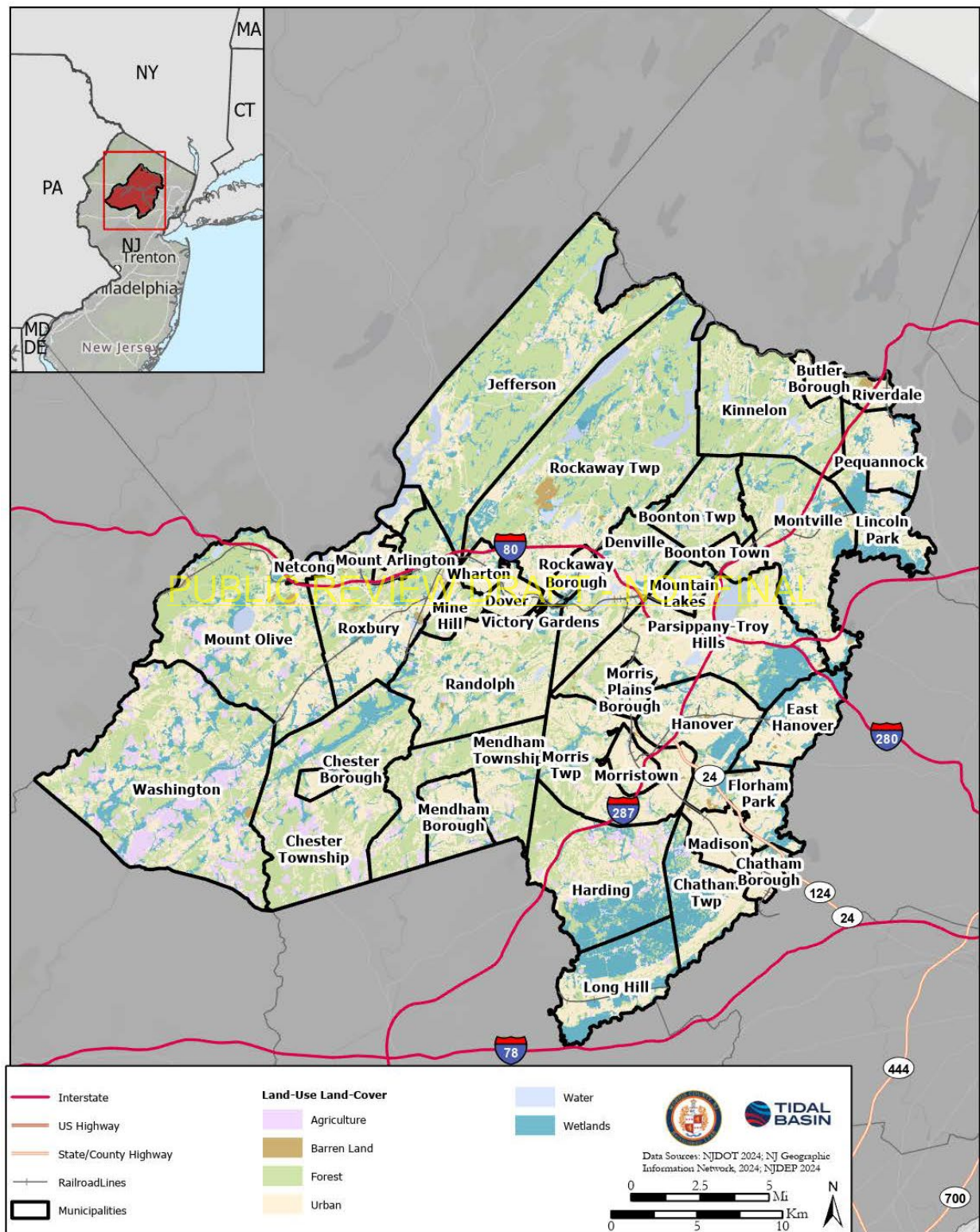
Table 3. Land Use Summary for Morris County, 2002, 2007 and 2015

	1986	1995	2002	2007	2012	2015
Total Acreage	308,085.6	308,117.5	308,117.5	308,117.5	308,117.5	308,117.5
Agriculture	18,318.6	14,831.8	13,303.3	13,353.8	11,748.5	11,752.2
Barren Land	2,986.1	3,000.6	3,425.0	3,237.8	2,539.8	2,550.6
Forest	129,856.4	126,294.3	124,011.3	122,566.3	118,818.8	118,857.4
Urban	103,557.1	108,652.0	113,061.0	114,487.2	120,748.0	120,747.8
Water	10,143.4	10,277.6	10,501.7	11,018.9	11,346.2	11,195.1
Wetlands	43,224.0	45,061.2	43,815.2	43,453.6	42,916.2	43,014.3

Source: Morris County 2020 – data from draft Land Use Element using 2015 NJDEP Land Use Land Cover Data



Figure 3. Land Use in Morris County





2.2.6 AGRICULTURE

As of the 2021 tax assessment, Morris County showcases a substantial 30,605 acres of assessed farmland, making up 13% of the county's overall land area. Many of the farms within Morris County operate farm markets or stands, establishing vital direct connections with their customer base. Leading the farmland charge is Washington Township, accounting for an impressive 35.6%, followed by Chester Township (10.5%) and Mount Olive Township (9%). The county's landscape is predominantly urban and forested, covering nearly 80% of its total area. Nevertheless, a significant 11,600 acres are devoted to agricultural purposes according to the Morris County Farmland Preservation Plan.

2.2.7 OPEN SPACE AND PARKLAND

The Morris County Park Commission includes 38 facilities: historic sites, golf courses, outdoor educational and recreational facilities, arboreta, conservation areas, 150 miles of trails, and ice-skating arena. The Commission is the largest park system in New Jersey (based on acreage) with more than 18,900 acres of passive and active recreational opportunities throughout the County. This includes golf, hiking, ice skating, sledding, ice fishing, fishing, boating, swimming, cross-country skiing, snowshoeing, biking, recreational fields, environmental education and special programming throughout the year. The largest wildlife preserves in the County are the Mahlon Dickerson Reserve in Jefferson Township and Silas Condict Park in Kinnelon. Table 4 identifies the Morris County and New Jersey State parks located throughout the County.

Table 4. County, State and Federal Parks in Morris County

Park	Acreage	Municipality
Allamuchy Mountain and Stephens State Park	2,440	Mount Olive Township
Bamboo Brook Outdoor Education Center	687	Chester Township
Cooper Gristmill	14	Chester Township
Craigmeur Recreation Complex	69.55	Jefferson Township and Rockaway Township
Elizabeth D. Kay Environmental Center	822	Chester Township
Fosterfields Living Historical Farm	213.4	Morris Township
Frelinghuysen Arboretum	127	Morris Township
Federal Great Swamp and County Outdoor Education Center	7,811	Chatham Township
Hacklebarney State Park	978	Chester Township
Hedden Park	420	Dover, Mine Hill, and Randolph
Historic Speedwell	7.5	Morristown
James Andrews Memorial Park	588.89	Randolph Township
Lee's Park Marina	12.82	Mount Arlington Borough
Lewis Morris Park	2,196	Harding, Mendham and Morris Townships
Loantaka Brook Reservation	883	Morristown
Mahlon Dickerson Reservation	3,494	Jefferson Township
Mennen Sports Arena	N/A	Morris Township
Morristown National Historic Park	1,705.69	Morristown
Mount Hope Historical Park	444	Rockaway Township
Mount Paul Memorial Park	298	Chester Township
Old Troy Park	96	Parsippany-Troy Hills Township
Passaic River Park	825.49	Chatham and Long Hill Townships
Patriots' Path	291.9	Throughout the County
Pyramid Mountain Natural Historic Area	1,675	Kinnelon Borough and Montville Township
Schooley's Mountain Park	823	Washington Township
Seaton Hackney Farm	38	Morris Township
Silas Condict Park	1,513	Kinnelon Borough
Tourne Park	561	Denville Township



Park	Acreage	Municipality
Traction Line Recreation Trail	15	Madison Borough, Morristown and Morris Township
Willowood Arboretum	136	Chester Township

Source: Morris County Park Commission, National Park Service, VisitNJ.org

2.2.8 URBAN LAND

Urban land includes most of what normally would be considered developed land. Residential areas, commercial areas, services and institutions, industrial areas, and those developed for transportation and utilities are the primary land uses included in urban land. There are several other open land categories that are included with urban land. Developed recreation areas, whether a part of a park, educational facility, or private concern (e.g. golf courses), are also considered a part of urban land. Also included are areas such as large, landscaped lawns in corporate businesses and service centers, parks, and residential areas.

2.3 POPULATION AND DEMOGRAPHICS

Knowledge of the composition of the population, how it has changed in the past and how it may change in the future is needed to make informed decisions. Information about population is a critical part of planning because it directly relates to needs such as housing, industry, stores, public facilities and services, and transportation.

The population of Morris County was estimated at 511,151 in 2022 according to the U.S. Census Population Estimates. Table 5 presents the population statistics for Morris County based on the 2020 decennial census and 2018-2022 ACS 5-Year Estimates. Figure 4 shows the distribution of the general population density (persons per square mile) in 2021 by Census block.

Table 5. General Population Statistics for Morris County

	2010 Census	2020 Census	2018-2022 ACS						
Municipality	Total	Total	Total	Pop. 65+	% Pop. 65+	Pop. Under 5	% Under 5	Below Poverty Level*	% Below Poverty Level
Town of Boonton	8,347	8,815	8,781	1,265	14.41%	409	4.66%	520	5.92%
Township of Boonton	4,263	4,380	4,377	918	20.97%	217	4.96%	77	1.76%
Borough of Butler	7,539	8,047	8,045	1,364	16.95%	246	3.06%	587	7.30%
Chatham Borough	8,962	9,212	9,199	982	10.68%	736	8.00%	196	2.13%
Chatham Township	10,452	10,983	10,930	1,778	16.27%	441	4.03%	181	1.66%
Chester Borough	1,649	1,514	1,480	307	20.74%	87	5.88%	94	6.35%
Chester Township	7,838	7,713	7,725	1,330	17.22%	234	3.03%	202	2.61%
Denville Township	16,635	17,107	17,084	3,565	20.87%	906	5.30%	610	3.57%
Town of Dover	18,157	18,460	18,426	2,427	13.17%	736	3.99%	2,388	12.96%
Township of East Hanover	11,157	11,105	11,102	2,638	23.76%	643	5.79%	249	2.24%
Borough of Florham Park	11,696	12,585	12,790	2,674	20.91%	449	3.51%	451	3.53%
Township of Hanover	13,712	14,677	14,602	3,100	21.23%	550	3.77%	303	2.08%



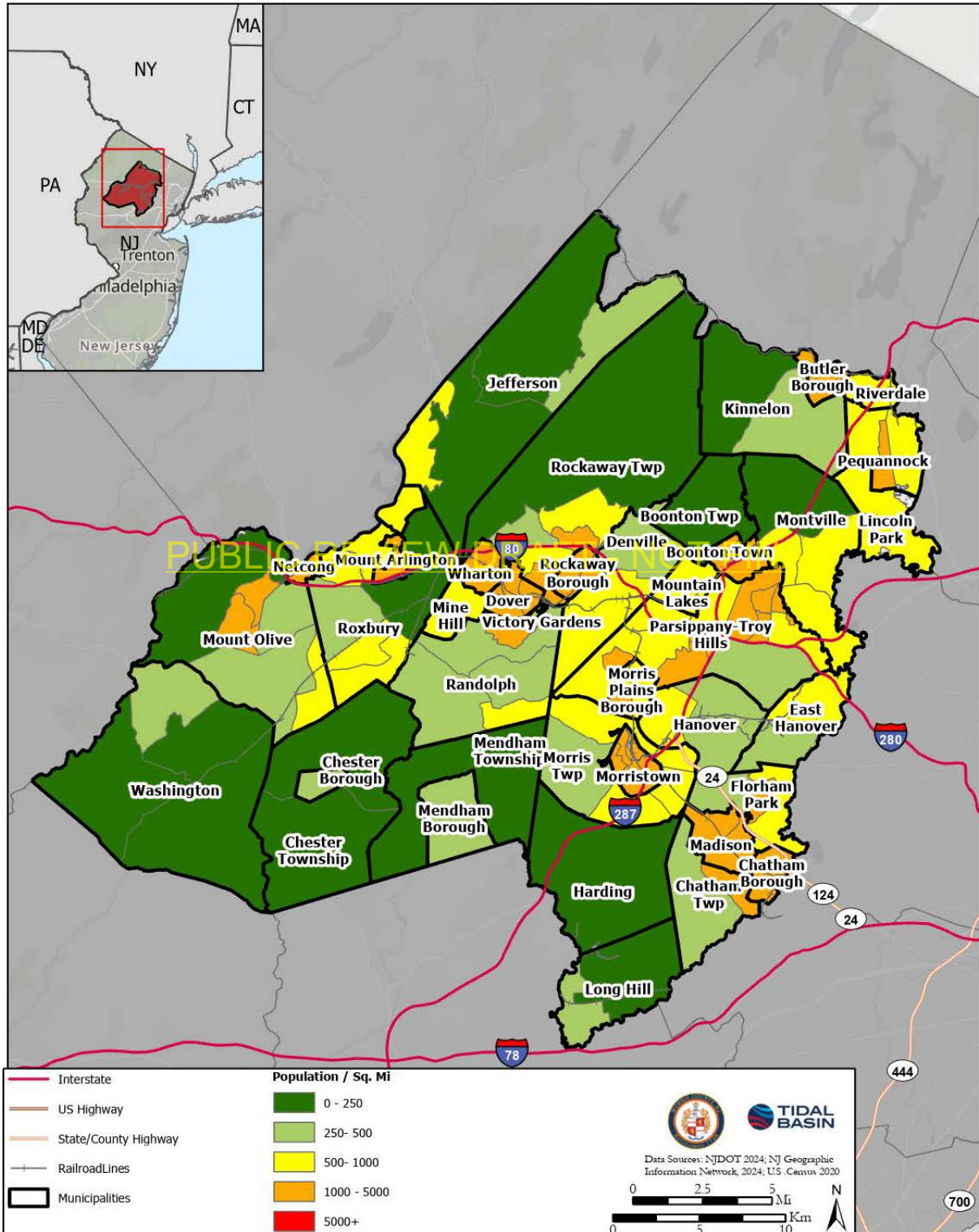
	2010 Census	2020 Census	2018-2022 ACS						
Township of Harding	3,838	3,871	3,868	1270	32.83%	37	0.96%	176	4.55%
Township of Jefferson	21,314	20,538	20,555	3617	17.60%	896	4.36%	1,194	5.81%
Borough of Kinnelon	10,248	9,966	9,986	1,522	15.24%	435	4.36%	235	2.35%
Borough of Lincoln Park	10,521	10,915	10,884	2,094	19.24%	561	5.15%	212	1.95%
Township of Long Hill	8,702	8,629	8,630	1,800	20.86%	623	7.22%	389	4.51%
Borough of Madison	15,845	16,937	16,521	2,252	13.63%	895	5.42%	525	3.18%
Borough of Mendham	4,981	4,981	4,968	975	19.63%	239	4.81%	98	1.97%
Township of Mendham	5,869	6,016	6,005	989	16.47%	223	3.71%	99	1.65%
Township of Mine Hill	3,651	3,651	3,990	605	15.16%	258	6.47%	234	5.86%
Township of Montville	21,528	22,450	22,364	4,679	20.92%	1020	4.56%	617	2.76%
Borough of Morris Plains	5,532	6,153	6,104	1,153	18.89%	273	4.47%	153	2.51%
Township of Morris	22,306	33,974	23,094	4,390	19.01%	1,313	5.69%	1,146	4.96%
Town of Morristown	18,411	20,180	21,026	2,792	13.28%	1,107	5.26%	2,202	10.47%
Borough of Mount Arlington	5,050	5,909	5,863	1,201	20.48%	339	5.78%	230	3.92%
Township of Mount Olive	28,117	28,886	28,876	3,740	12.95%	1729	5.99%	1,467	5.08%
Borough of Mountain Lakes	4,160	4,472	4,499	502	11.16%	160	3.56%	59	1.31%
Netcong Borough	3,232	3,375	3,484	504	14.47%	195	5.60%	329	9.44%
Township of Parsippany-Troy Hills	53,238	56,162	55,970	10,128	18.10%	2,388	4.27%	2,300	4.11%
Township of Pequannock	15,540	15,571	15,561	4,531	29.12%	553	3.55%	861	5.53%
Township of Randolph	25,734	26,504	26,451	2,370	8.96%	1,662	6.28%	1,154	4.36%
Borough of Riverdale	3,559	4,107	4,081	829	20.31%	209	5.12%	309	7.57%
Borough of Rockaway	6,438	6,598	6,589	953	14.46%	261	3.96%	459	6.97%
Township of Rockaway	24,156	25,341	25,539	4,439	17.38%	1,401	5.49%	1,109	4.34%
Township of Roxbury	23,324	22,950	23,101	4,098	17.74%	1019	4.41%	1,166	5.05%
Borough of Victory Gardens	1,520	1,582	1,761	135	7.67%	107	6.08%	402	22.83%
Township of Washington	18,533	18,197	18,188	3,509	19.29%	793	4.36%	534	2.94%
Borough of Wharton	6,522	7,241	7,217	1041	14.42%	654	9.06%	1,282	17.76%
Morris County (Total)	472,276	509,285	511,151	94,221	18.43%	25,585	5.01%	20,727	4.05%

Source: U.S. Census Bureau: American Census Survey (ACS) 2010, 2020, and 2018-2022



Figure 4 shows the distribution of the general population in Morris County by census tract.

Figure 4. Distribution of General Population in Morris County by Census Tract





2.3.1 VULNERABLE POPULATIONS

Research has shown that some populations, while they may not have more hazard exposure, may experience exacerbated impacts and prolonged recovery if/when impacted. This is due to many factors, including their physical and financial ability to react or respond during a hazard. Identifying concentrations of vulnerable populations can assist communities in targeting preparedness, response actions. For the purposes of this planning process, vulnerable populations in Morris County include children, elderly, low-income, the physically and intellectually disabled, non-English speakers, and the medically or chemically dependent.

2.3.1.1 AGE

Children are deemed vulnerable owing to their dependence on others for secure access to resources in emergencies. The elderly, facing a greater likelihood of lacking both the physical and economic means essential for responding to hazardous events, are at an elevated risk of enduring health-related consequences that impede swift recovery. Individuals residing independently may encounter increased challenges in evacuating their residences. Moreover, the elderly are more prone to residing in senior care and living facilities emergency preparedness is contingent upon the discretion of facility operators. These facilities, characterized by close living quarters and an elderly demographic potentially susceptible to weakened immune systems or pre-existing health conditions, are particularly vulnerable to hazards such as pandemics. The confluence of these factors underscores the heightened vulnerability of senior care and living facilities during events of this nature.

According to the 2018-2022 ACS 5-Year Estimates, 25,585 (5.1%) of the County's population is under the age of 5 and 94,221 people (18.43%) of the County's total population were age 65 and older. Figure 3-5 shows the distribution of persons under the age of 5 and over 65 in Morris County.

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2.3.1.2 INCOME

Of the total population, economically disadvantaged populations are more vulnerable because they are likely to evaluate their risk and make decisions based on the major economic impact to their family (e.g., evacuation). Based on the 2018-2022 ACS, per capita income in Morris County was estimated at \$67,555, and the median household income for Morris County is \$130,808 (in 2022 dollars). Eleven percent of households receive an income between \$50,000 and \$74,999 per year, a drop from the 2013-2017 survey of 1%, and 29.4% of households receive over \$200,000 annually, an increase of 4.9%.

According to the Census' 2022 poverty thresholds, the weighted average thresholds for a family of four in 2022 was \$29,950; for a family of three, \$23,280; for a family of two, \$18,900, and for unrelated individuals, \$14,880. The 2022 ACS data identified approximately 12,306 households as having an annual income of less than \$24,999 and are therefore below the poverty level in Morris County (household = family of 4; 2022 poverty level, \$27,750). Figure 3-5 shows the distribution of low-income persons.

2.3.1.3 DISABLED

A disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities and interact with the world around them (participation restrictions). (Center for Disease Control, 2020). These impairments may increase the level of difficulty that individuals face during an emergency. Cognitive impairments may reduce an individual's capacity to receive, process, and respond to emergency information or warnings. Individuals with a physical or sensory disability may face issues of mobility, sight, hearing, or reliance on specialized medical equipment. According to the 2018-2022 ACS, 8.9% percent of residents of Morris County are living with a disability.



2.3.1.4 NON-ENGLISH SPEAKERS

Individuals who are not fluent or have a working proficiency in English may have difficulty understanding hazard-related information. Cultural differences can also add complexity to how information is being conveyed to populations with limited English proficiency (Centers for Disease Control, 2015). According to the 2022 ACS, 25.4% of county residents over the age of 5 primarily speak a language other than English at home. This is up from 25.2% reported in the 2018 ACS. Of the county's population, 10.4% percent speak Spanish, 8.5% speak other Indo-European languages, 5.5% speak Asian and Pacific Island Languages, and 1.0% speak other languages. Figure 3 5 below shows the geographic distribution of individuals who speak English less than "very well."

The Borough of Victory Gardens (78.6%), the Town of Dover (73.4%) and the Borough of Wharton (56.2%) have the largest proportion of households that speak a language other than English. The primary non-English language spoken in these homes is Spanish.

2.3.2 POPULATION TRENDS

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.

From 1880 to 2022, the County experienced a constant growth in population. The largest increase was seen between the years 1950 to 1960, when the County experienced a 59.2% (97,249 persons) population increase. The smallest increase was seen between the years 1980 and 1990, when Morris County experienced a 3.4% (13,723 persons) population increase. displays the change in population from 1880 to 2022 in Morris County.

Table 6. Morris County Population Trends, 1880 to 2022

Year	Population	Change in Population	Percent (%) Population Change
1880	50,861	NA	NA
1890	54,101	3,240	6.4%
1900	65,156	11,055	20.4%
1910	74,704	9,548	14.7%
1920	82,694	7,990	10.7%
1930	110,445	27,751	33.6%
1940	125,732	15,287	13.8%
1950	164,371	38,639	30.7%
1960	261,620	97,249	59.2%
1970	383,454	121,834	46.6%
1980	407,630	24,176	6.3%
1990	421,353	13,723	3.4%
2000	470,212	48,859	11.6%
2010	492,276	22,064	4.7%
2017	498,847	6,571	1.3%
2022	511,151	12,304	2.4%

Source: NJ Department of Labor 2001; U.S. Census Bureau, 2018-2022 ACS



As shown in Table 7, a majority of the County's municipalities experienced a decrease in population between 2020 and the 2018-2022 ACS estimates, with the Township of Morris experiencing the greatest decrease in population during this time per capita. The Township of Mine Hill experienced the largest increase in population per capita.

Table 7. Changes in Population by Municipality, 2000-2022

Municipality	2000 Census	2010 Census	2020 Census	2018 - 2022 ACS	Change in Population (2020 to 2022 ACS)	Percent (%) Population Change
Town of Boonton	8,496	8,347	8,815	8,781	-34	1
Township of Boonton	4,287	4,263	4,380	4,377	-3	1
Borough of Butler	7,420	7,539	8,047	8,045	-2	1
Chatham Borough	8,460	8,962	9,212	9,199	-13	1
Chatham Township	10,086	10,452	10,983	10,930	-53	1
Chester Borough	1,635	1,649	1,514	1,480	-34	1
Chester Township	7,282	7,838	7,713	7,725	12	1
Denville Township	15,824	16,635	17,107	17,084	-23	1
Town of Dover	18,188	18,157	18,460	18,426	-34	1
Township of East Hanover	11,393	11,157	11,105	11,102	-3	1
Borough of Florham Park	8,857	11,696	12,585	12,790	205	1
Township of Hanover	12,898	13,712	14,677	14,602	-75	1
Township of Harding	3,180	3,838	3,871	3,868	-3	1
Township of Jefferson	19,717	21,314	20,538	20,555	17	1
Borough of Kinnelon	9,365	10,248	9,966	9,986	20	1
Borough of Lincoln Park	10,930	10,521	10,915	10,884	-31	1
Township of Long Hill	8,777	8,702	8,629	8,630	1	1
Borough of Madison	16,530	15,845	16,937	16,521	-416	1
Borough of Mendham	5,097	4,981	4,981	4,968	-13	1
Township of Mendham	5,400	5,869	6,016	6,005	-11	1
Township of Mine Hill	3,679	3,651	3,651	3,990	339	1
Township of Montville	20,839	21,528	22,450	22,364	-86	1
Borough of Morris Plains	5,236	5,532	6,153	6,104	-49	1
Township of Morris	21,796	22,306	33,974	23,094	-10,880	1
Town of Morristown	18,544	18,411	20,180	21,026	846	1
Borough of Mount Arlington	4,663	5,050	5,909	5,863	-46	1
Township of Mount Olive	24,193	28,117	28,886	28,876	-10	1
Borough of Mountain Lakes	4,256	4,160	4,472	4,499	27	1
Netcong Borough	2,580	3,232	3,375	3,484	109	1



Municipality	2000 Census	2010 Census	2020 Census	2018 - 2022 ACS	Change in Population (2020 to 2022 ACS)	Percent (%) Population Change
Township of Parsippany-Troy Hills	50,649	53,238	56,162	55,970	-192	1
Township of Pequannock	13,888	15,540	15,571	15,561	-10	1
Township of Randolph	24,847	25,736	26,504	26,451	-53	1
Borough of Riverdale	2,498	3,559	4,107	4,081	-26	1
Borough of Rockaway	6,473	6,438	6,598	6,589	-9	1
Township of Rockaway	22,930	24,156	25,341	25,539	198	1
Township of Roxbury	23,883	23,324	22,950	23,101	151	1
Borough of Victory Gardens	1,546	1,520	1,582	1,761	179	1
Township of Washington	17,592	18,533	18,197	18,188	-9	1
Borough of Wharton	6,298	6,522	7,241	7,217	-24	1

Source: U.S. Census Bureau, Census 2010, 2013-2017, 2018-2022 ACS

Over the last 15 years, new regulations, new economic realities and changing conditions influenced the rate of population growth in Morris County and will continue to influence population growth moving forward. Enactment of the Highlands Act in 2004 and subsequent adoption of related NJDEP regulations is one of the reasons for the modest rate of population growth, although nearly half of New Jersey's counties have been experiencing population decline. Within Morris County most jurisdictions experienced only modest population increases from 2010 to 2022, with the exception of a couple of jurisdictions like Riverdale (62.09% increase) in the north and the Borough of Florham Park (42.9% increase) in the southeastern part of the County.

Looking ahead, based on a forecast by the North Jersey Transportation Planning Authority, Morris County is projected to experience significant population growth. By 2050, the County is anticipated to have a population of 528,760, signifying an increase of 6.1% over the 2015 population.

2.4 GENERAL BUILDING STOCK

Morris County's residential structures primarily consist of single-family homes, which are the most common type of housing. There are also significant numbers of multi-family units, including apartments and condominiums, reflecting a diverse housing market catering to various demographic groups. The 2020 U.S. Census data identified an estimated 197,722 households (198,761 housing units) in Morris County. This is a modest increase in households from 2010 (7%), and an increase in housing units of 5%. The U.S. Census defines household as all the persons who occupy a housing unit, and a housing unit as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Therefore, you may have more than one household per housing unit.

In terms of age, the building stock in Morris County includes both historic homes and modern constructions. Many of the homes were built during the mid-20th century, particularly between 1950 and 1979, indicating a period of substantial growth and development. There are also newer buildings from the 21st century, showing ongoing development and urban expansion.



Commercial buildings in Morris County include a mix of retail spaces, office buildings, and industrial properties, supporting a robust local economy. These structures are often situated in business districts and industrial parks, contributing to the economic vitality of the region.

Overall, the building stock in Morris County reflects a balance between preserving historical architecture and accommodating modern growth, providing a comprehensive mix of residential, commercial, and industrial buildings that support a dynamic and diverse community.

Figure 5, Figure 6 and Figure 7 show the density distribution of residential, commercial and industrial buildings in Morris County by Census block; replacement cost value of structures per unit area, including building contents. The densities are shown in units of \$1,000 (\$K) per square mile. Viewing exposure distribution maps can assist communities in visualizing areas of high exposure and in evaluating aspects of the study area in relation to the specific hazard risks.

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Figure 5. Distribution of Building Stock and Value Density in Morris County by Census Block

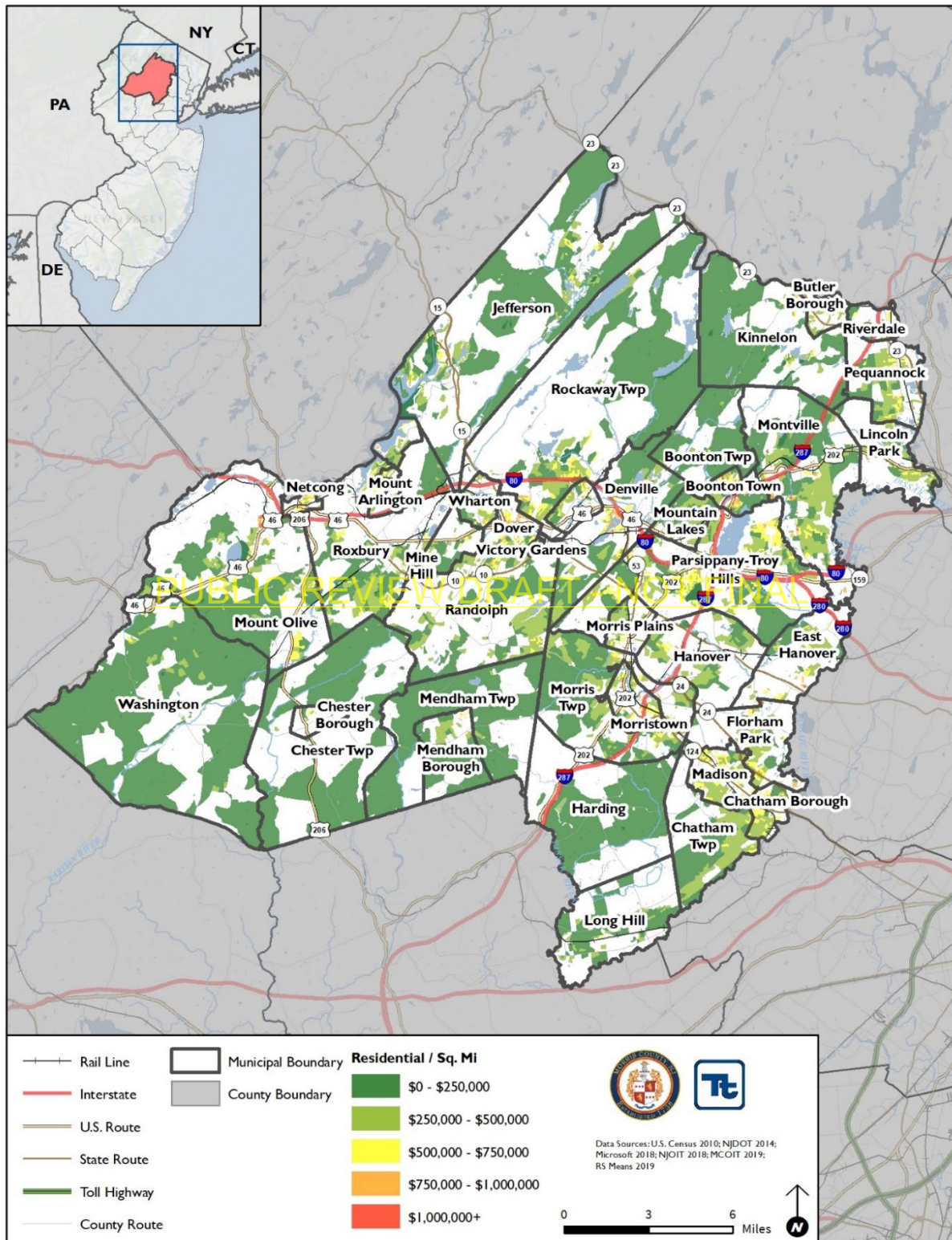




Figure 6. Distribution of Commercial Building Stock and Exposure Density in Morris County by Census Block

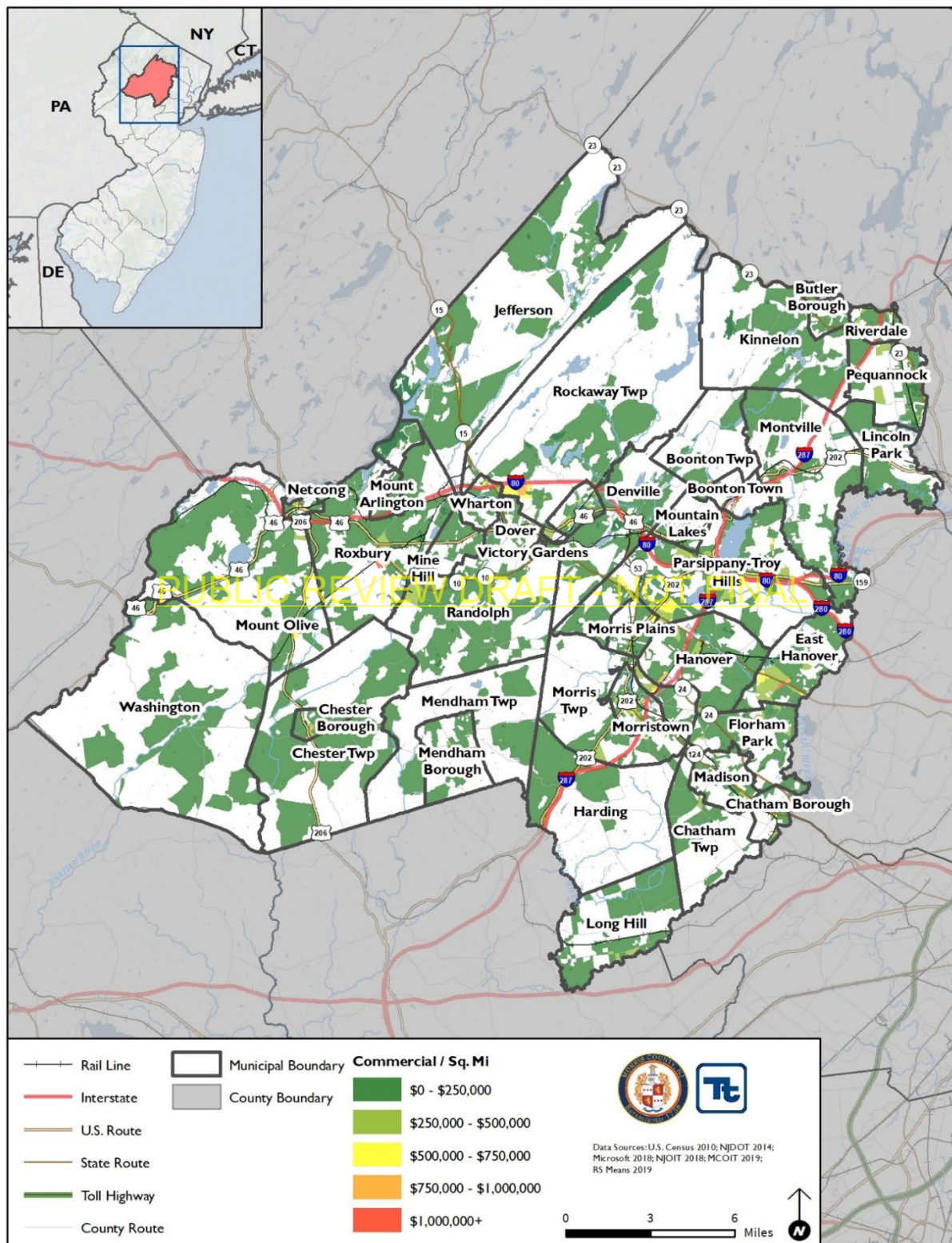
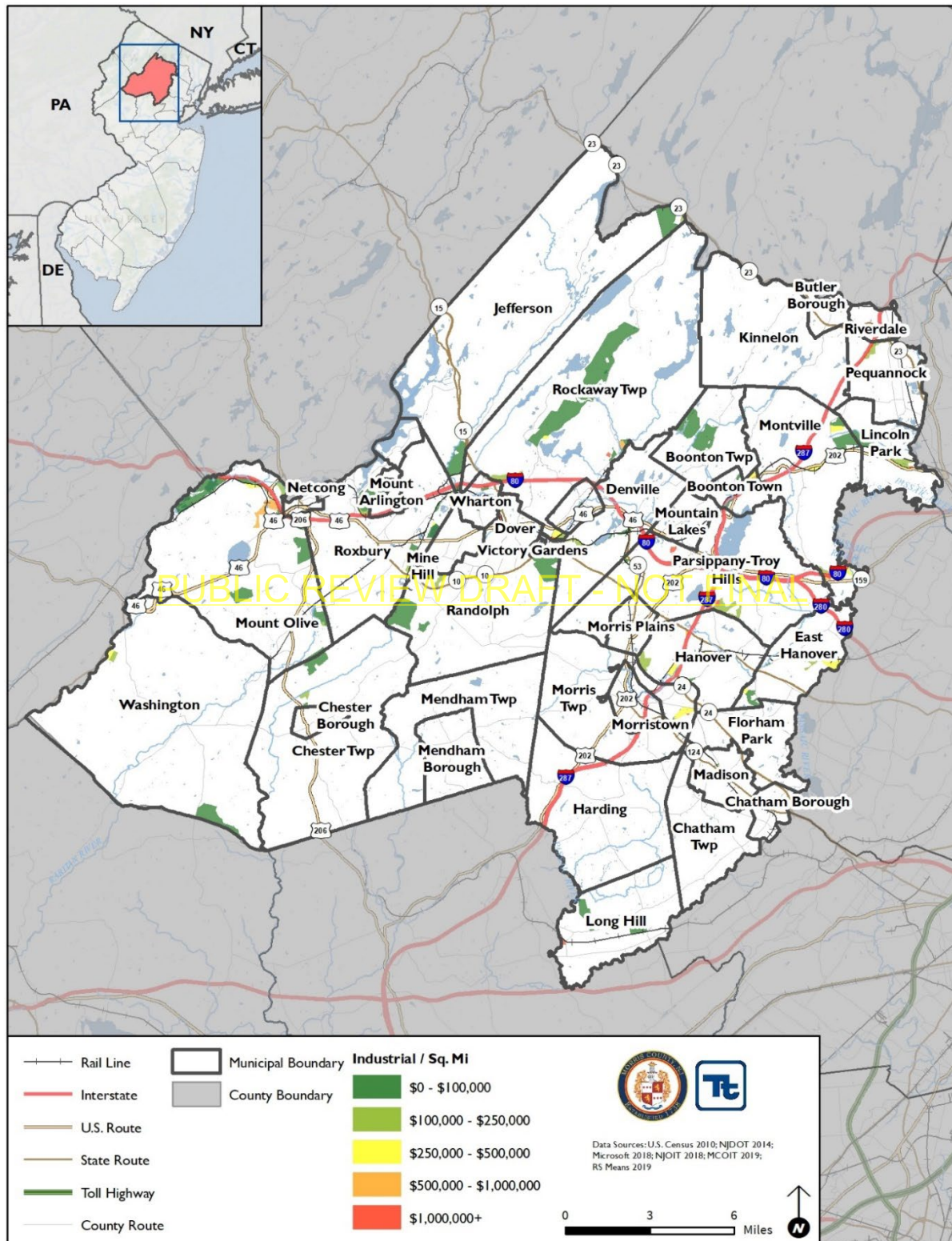




Figure 7. Distribution of Industrial Building Stock and Value Density in Morris County by Census Block





2.5 ECONOMY

As discussed in the FEMA Local Mitigation Handbook, after a natural hazard event, economic resiliency drives recovery. An understanding of the major employers and economic sectors in the County whose losses or inoperability would impact the community and its ability to recover from a disaster is essential. The following provides information regarding the economy in Morris County.

2.5.1 BUSINESS

The economy of Morris County employs approximately 268K people. The largest industries in Morris County, are Professional, Scientific, & Technical Services (34,792 people), Health Care & Social Assistance (31,652 people), and Manufacturing (29,778 people), and the highest paying industries are Finance & Insurance (\$130,495), Management of Companies & Enterprises (\$120,799), and Finance & Insurance, & Real Estate & Rental & Leasing (\$115,110). In 2022, the area's robust economy had a Gross Regional Product (GRP) of \$68.5 billion. The healthcare and wellness industry stand out as one of the County's fastest-growing sectors, showcasing a noteworthy \$3.8 billion annual GRP and a remarkable 3.2% job growth in 2020.

The history of Morris County's economic development is rooted in agriculture, but since the 1950s and the passage of the National Highway Act of 1956, the County became a home for many corporate headquarters who had moved out of New York City or added satellite offices in Morris County due to an expansion of population growth following World War II. Since then, Morris County's economy can be classified as a mix between growing business and technology sectors and a slowly shrinking agricultural sector.

In addition, the U.S. Military Picatinny Arsenal, located in northern Morris County is one of the County's major employers.

2.5.2 AGRICULTURE

Agriculture is an important part of Morris County's economy and a major contributor to New Jersey's and the United States' farming industry. The 2022 U.S. Census of Agriculture indicates that Morris County ranked 11th in the State for total market value of agricultural products sold with over \$33 million in sales. This is a 37.5% increase from 2017 (\$24 million in sales). The 2022 average sales per farm was \$72,031, a 21% increase from the 2017 Census which was an average of \$59,389. According to the United States Department of Agriculture (USDA) the top commodities, by sales, in Morris County for 2022 include: nursery, greenhouse, floriculture, and sod at \$16.9 million in sales; fruits, tree nuts, and berries at \$6.3 million in sales; vegetables, melons, potatoes, and sweet potatoes at \$6.3 million in sales.

2.5.3 DEVELOPMENT TRENDS AND NEW DEVELOPMENT

An understanding of population and development trends can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure. The DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use and development trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

New Jersey's Highlands stretch about 60 miles, from Phillipsburg in the southwest to Oakland in the northeast. They lie within portions of seven northwest New Jersey counties — Bergen, Hunterdon, Morris, Passaic, Somerset, Sussex, and Warren — and include 88 municipalities within the legislated region. The NJ Highlands provides nearly two-thirds of New Jersey's population, 6.2 million people, with clean drinking water. A large sector of the State's



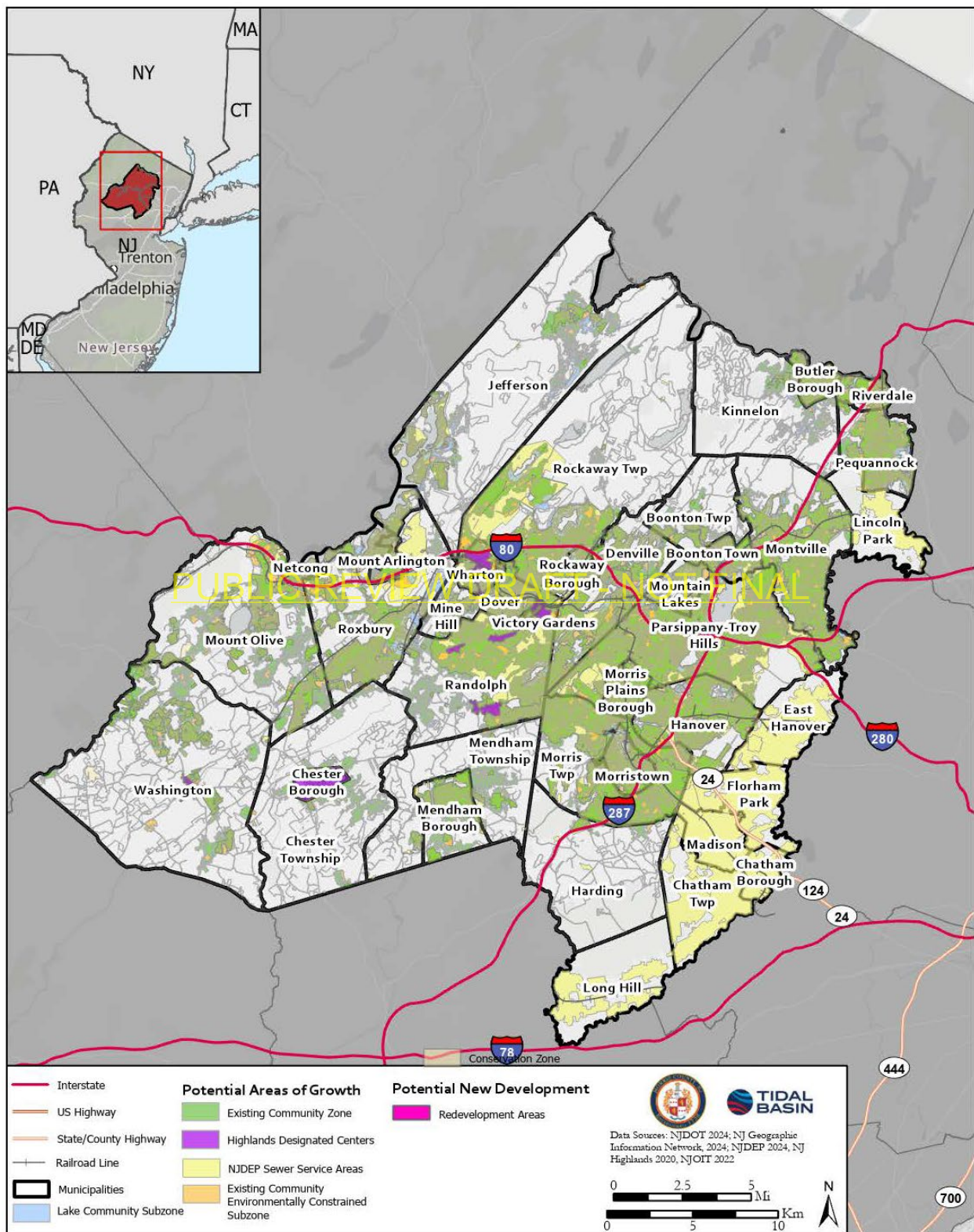
industrial base also relies on abundant clean water from the Highlands. The Highlands Region was officially formed in 2004 to support more regional approaches to land and water conservation, preservation, and management. The Region is found in New Jersey but also neighboring states of New York, Pennsylvania, and Connecticut. The presence of the New Jersey Highlands Region in the majority of Morris County is unique and has significant implications. The most obvious impact is the concentration of future development in designated urban areas (inside the Highlands Region) like Morristown, Dover, or Parsippany-Troy Hills Township and additional less-regulated development outside of the Highlands in the easternmost parts of the County, like parts of Hanover Township and East Hanover Township. The three westernmost Townships, Mount Olive, Washington, and Chester are almost exclusively located in the Highlands' Preservation Area. The Preservation Area in the Highlands is where development is most strictly regulated. The remainder of the Highlands Region in Morris County is located in the Planning Area where development potential is greater and provides an avenue for enhanced development through Transfer of Development Rights (TDR) and smart growth programs.

The New Jersey Highlands Council has identified areas of existing development as well as areas of potential growth that may provide insight as to where potential new development may occur in Morris County. These areas include the Existing Community Zone (both in-fill of new development and re-development) and Designated Centers. Figure 8 illustrates the potential new development identified by each jurisdiction, as well as Highlands Existing Community Zones, Designated Centers and Sewer Service Areas which are areas of potential future growth in Morris County. The New Jersey Highlands Council assists with planning and considers hazard areas such as floodplains when evaluating new and re-development in the region. In addition, the NJDEP Sewer Service Areas are also shown. These areas show the planned method of wastewater disposal for specific areas, i.e., whether the wastewater will be collected to a regional treatment facility or treated on site and disposed of through a surface water discharge or groundwater discharge.

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Figure 8. Areas of Potential Growth and Potential New Development Identified by Each Jurisdiction





2.6 CRITICAL FACILITIES

Critical facilities and infrastructure provide services and functions essential to a community, especially during and after a disaster. Critical facilities include essential facilities, transportation systems, lifeline utility systems, high potential loss facilities and hazardous material facilities. Transportation systems include roadways, bridges, airways, and waterways. Utility systems include potable water, wastewater, oil, natural gas, electric power facilities, and emergency communication systems.

The inventory of critical facilities identified for the HMP is considered sensitive information. It is protected by the Protected Critical Infrastructure Information (PCII) program and under New Jersey Executive Order 21. Therefore, individual facility names and addresses are not provided in this HMP update. A summary of the facility types used for the risk assessment are presented further in this section.

2.6.1 ESSENTIAL FACILITIES

This section provides information regarding Morris County's emergency facilities, hospital and medical facilities, schools, shelters, senior care and living facilities and government facilities. As stated above, these assets provide indispensable services that need to remain in operation before, during and after natural hazard events. Figure 9 shows these facilities.

2.6.2 EMERGENCY FACILITIES

For the purposes of this HMP, emergency facilities include police, fire, emergency medical services (EMS) and emergency operations centers (EOC). The County has a highly coordinated and interconnected network of emergency facilities and services at the county and municipal level. The Morris County Office of Emergency Management (MCOEM) serves as the primary coordinating agency between local, state and federal agencies. In response to an emergency event, MCOEM 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.

Each municipality is responsible for maintaining its own police department, fire department and emergency operation center. There are 37 enforcement facilities, 99 fire stations, 36 emergency medical services facilities and 39 emergency operation centers.

2.6.3 CORRECTIONAL FACILITIES

The Morris County Correctional Facility is located in Morris Township.

2.6.4 HOSPITAL AND MEDICAL FACILITIES

There are 17 hospitals located within the County.

2.6.5 SCHOOLS

There are 261 schools ranging from pre-kindergarten to higher education learning establishments in the County. During an emergency event, schools can be used as a shelter for residents.

2.6.6 SHELTERS

According to the County's official website, there are 66 warming and cooling centers shelters identified within the County; many schools, community centers and municipal buildings could serve as a shelter during an emergency.



2.6.7 SENIOR CARE AND LIVING FACILITIES

It is important to identify and account for senior facilities, as they are highly vulnerable to the potential impacts of disasters. Understanding the location and numbers of these types of facilities can help manage effective response plan post disaster. There are 47 senior facilities located in the County.

2.6.8 GOVERNMENT BUILDINGS

In addition to the facilities discussed, county and municipal buildings, department of public works facilities and public health departments are essential to the continuity of operations pre-, during and post-disasters. These facilities are included in the risk assessment.

2.7 TRANSPORTATION SYSTEMS

The County is bisected by a network of approximately 2,000 miles of federal interstate freeways, and state, county and municipal roads. Major interstate highways in Morris County included Interstate 80, 280, and 287, and State Routes 10 and 46. In addition to the roadways, the County is served by rail, bus and air, which are described below. Figure 3 13 illustrates the regional transportation lifelines serving the County. The transportation inventory included as part of this HMP includes airports, major bus stations, and major rail facilities.

2.7.1 RAIL SERVICE

Morris County benefits from the services of three prominent freight railroad companies: the Morristown & Erie Railway, the New York, Susquehanna, and Western Railway, and the Norfolk Southern Railway. Moreover, the county possesses ownership of three vital railroads, all diligently managed and maintained through a contractual partnership with the Morristown & Erie Railway. These pivotal lines include the Chester Branch, High Bridge Branch Railroad, and the Dover & Rockaway Railroad. Together, these railroads play a crucial role in the transportation and logistics infrastructure of Morris County.



Figure 9. Essential Facilities in Morris County

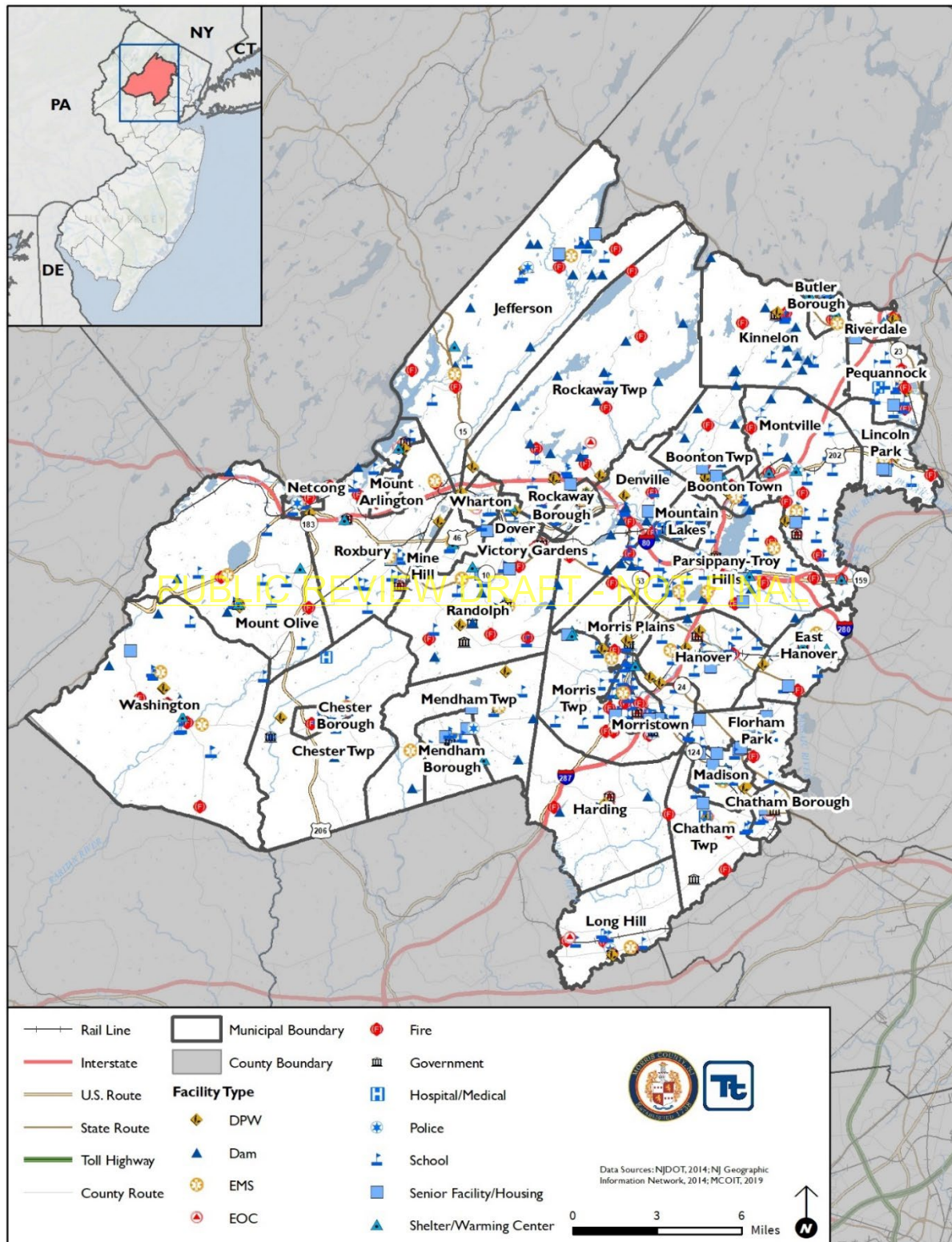
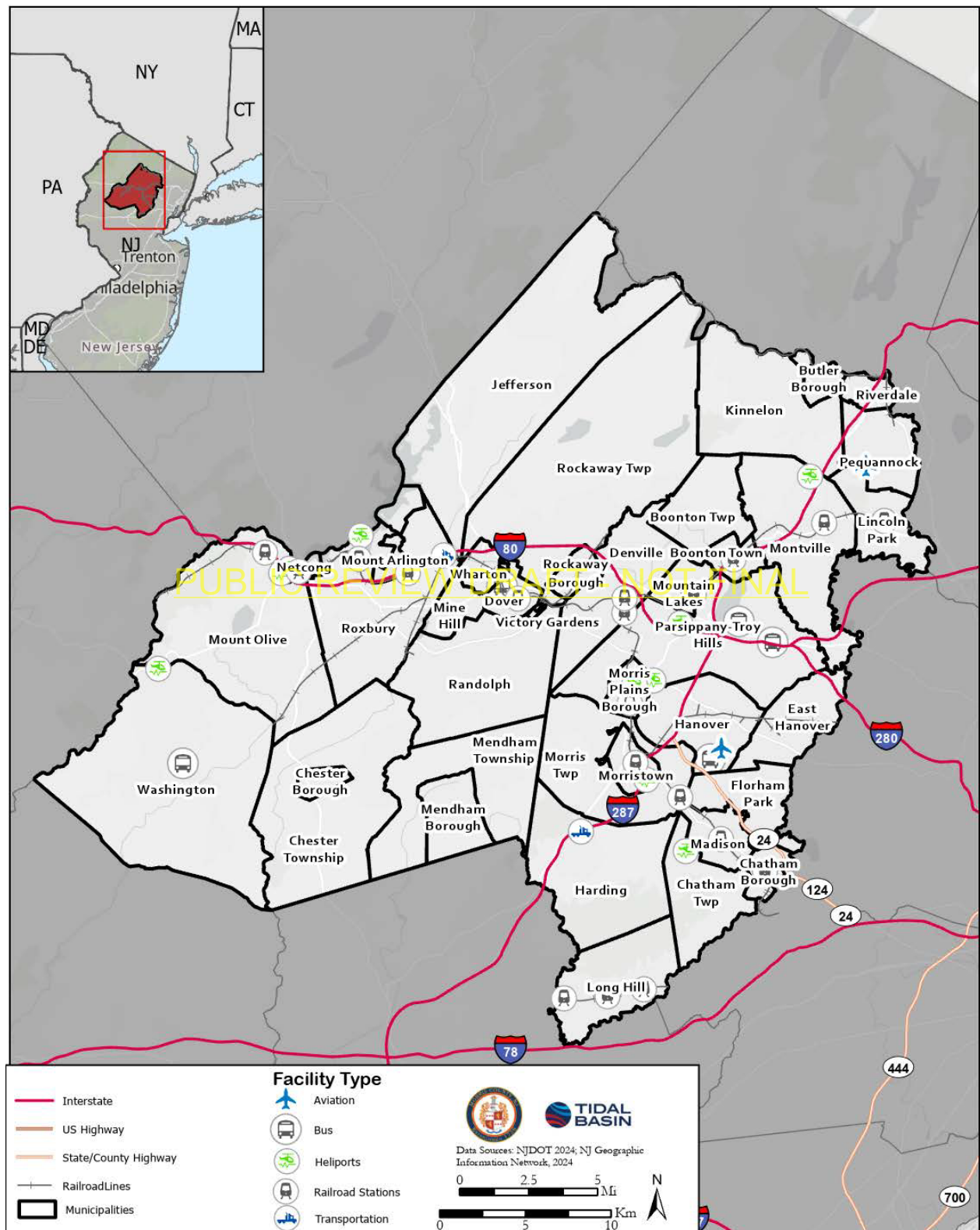




Figure 10. Transportation Facilities in Morris County

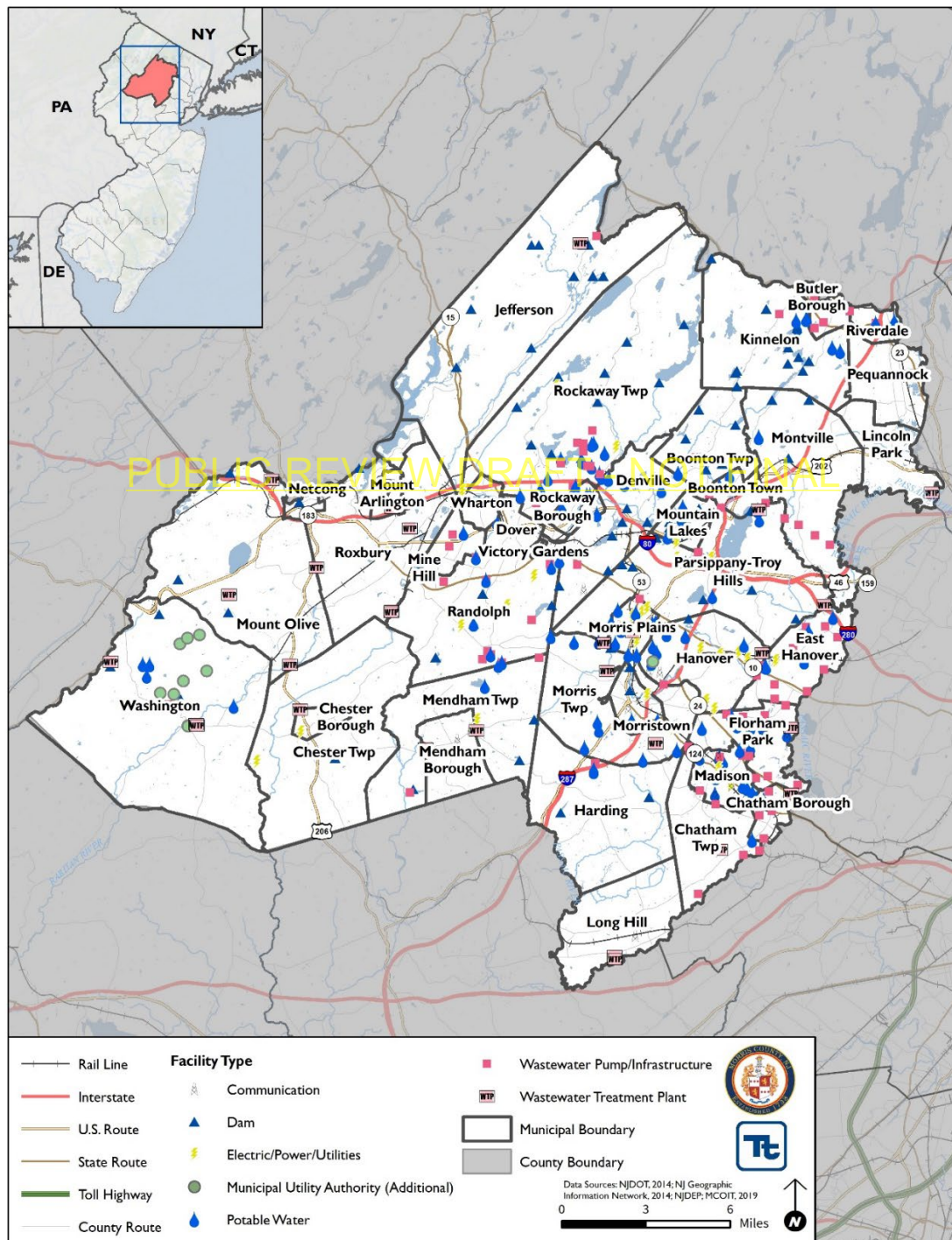




2.8 LIFELINE UTILITY SYSTEMS

This section presents communication, potable water, wastewater, and energy resource utility system data. Due to heightened security concerns, local utility lifeline data sufficient to complete the analysis have only partially been obtained.

Figure 11. Utility Lifelines in Morris County





2.8.1 COMMUNICATION

Morris County has a network of both public and private communication facilities and towers. Telecommunication services are provided by multiple organizations, including Verizon, Sprint International, and TRANSCOM. There were nine essential communication facilities identified in the County.

2.8.2 POTABLE WATER

Public community water supply systems in Morris County serve approximately 55% of the total County area and approximately 85% of the County's population. The water supply infrastructure generally serves areas that are also served by sewers. Individual onsite wells typically serve the more rural and less densely populated areas in the County. There are 121 potable water pumps, tanks, and facilities identified in the County for the purposes of this analysis. The following table provides the water supply utilities in the County and the municipalities each serve.

Table 8. Potable Water Supply Systems in Morris County

Municipality	Major Water Systems
Boonton Town	Boonton WD
Boonton Twp.	Denville WD, Boonton Twp. WD, Mt. Lakes WD
Butler Boro.	Butler WD
Chatham Boro.	Southeast Morris County MUA, Chatham Boro. WD
Chatham Twp.	NJ American Water Co. (Passaic Basin), Southeast Morris County MUA
Chester Boro.	NJ American Water Co. (Raritan and Passaic Basin), Washington Twp. MUA-Hager
Chester Twp.	NJ American Water Co. (Passaic Basin), AWM Four Seasons at Chester
Denville Twp.	Denville WD, Mt. Lakes WD, Rockaway Boro. WD
Dover Town	Dover Water Commission
East Hanover Twp.	East Hanover WD
Florham Park Boro.	NJ American Water Co. (Passaic Basin), Florham Park WD
Hanover Twp.	Southeast Morris County MUA
Harding Twp.	Southeast Morris County MUA, NJ American Water Co. (Passaic Basin), Lake Shore Water Co.
Jefferson Twp.	Sparta Twp. Water Utility, Jefferson Twp. Water Utility (Lake Hopatcong, Milton & Vassar Road), Sun Valley Park
Kinnelon Boro.	Kinnelon WD, Butler WD, Fayson Lakes Water Co.
Lincoln Park Boro.	Lincoln Park WD, Lincoln Park Jacksonville System, Pequannock WD, Pequannock Twp. WD-Cedar Crest
Madison Boro.	Madison WD
Mendham Boro.	NJ American Water Co. (Passaic Basin)
Mendham Twp.	Southeast Morris County MUA, NJ American Water Co. (Passaic Basin)
Mine Hill Twp.	Mine Hill WD, Dover Water Commission, Wharton WD
Montville Twp.	Montville MUA, Jersey City MUA, Green Briar Res Health, Signature Care Home@Montville
Morris Twp.	Southeast Morris County MUA, Sisters of Charity South Elizabeth
Morris Plains Boro.	Southeast Morris County MUA
Morristown Town	Southeast Morris County MUA
Mt. Lakes Boro.	Mt. Lakes WD, Denville WD, Parsippany-Troy Hills WD
Mt. Arlington Boro.	Mt. Arlington WD (Kadel & Main System), Roxbury WD (Shore), Suez Water (Arlington Hills)



Municipality	Major Water Systems
Mount Olive Twp.	Mt. Olive WD (Goldmine, Sand, Pinecrest, Lynwood, Tinc Farm, Carlton Hills, Village and Main Systems (Flanders), AWM Country Oaks, Mt. Olive Villages WD, NJ American Water Co. (West Jersey, Passaic Basin and ITC) NJ Vasa Home Water, Hackettstown MUA, Morris Chase/Morris Hunt Water System, Netcong WD, Mount Olive Twp.-Flanders, NJ American Water-Mount Olive/West Jersey
Netcong Boro.	Netcong WD
Parsippany Troy Hills Twp.	Parsippany Troy Hills WD, Denville WD, Mt. Lakes WD,
Long Hill Twp.	NJ American Water Co. (Passaic Basin)
Pequannock Twp.	Pequannock WD (Main and Cedar Crest)
Randolph Twp.	Randolph WD, Denville WD, Morris County MUA, Dover Water Commission
Riverdale Boro.	Riverdale WD
Rockaway Boro.	Rockaway Boro WD, Denville Twp. WD
Rockaway Twp.	Rockaway Twp. WD, Denville WD, Wharton WD, Picatinny Arsenal, Hoffman Homes Community LLC, Rockaway Boro WD, Dover WD
Roxbury Twp.	Roxbury WD (Evergreen, Sky View, Shore), Netcong WD, NJ American Water-Roxbury
Victory Gardens Boro.	Dover Water Commission
Washington Twp.	Washington MUA (Hager and Schooley's Mountain), Hackettstown MUA, Sherwood Village, Aqua, Cliffside Park Assoc. Inc.
Wharton Boro.	Dover Water Commission, Wharton WD

Source: NJDEP Data Miner; Mobile Home Parks Excluded

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2.8.3 WASTEWATER FACILITIES

2.8.3.1 CURRENT SEWER SERVICE AREAS AND FACILITIES

Centralized wastewater treatment systems in Morris County play a pivotal role in servicing a substantial portion of the region. They cover approximately 41% of the county's total area and serve around 70% of its population. Similarly, public community water supply systems have a wide reach, covering roughly 55% of the county's area and meeting the water needs of approximately 85% of its population. Notably, these water supply systems are primarily concentrated in areas also served by sewer systems.

In contrast, individual onsite wells are the primary water source for the more rural and less densely developed areas of the county. Overall, there are 25 major facilities dedicated to serving Morris County's wastewater needs. These major facilities fall into several categories, including non-industrial facilities providing treatment for entire municipalities, regionalized treatment plants serving multiple municipalities across counties, and residential or multi-use facilities catering to specific areas within municipalities, where potential future wastewater generation is anticipated. These facilities collectively ensure the effective management and distribution of water resources across Morris County.

Table 9. Current Sewer Service Utilities and Municipalities Served

Wastewater Utility	Municipalities Served in Morris County
Ajax Terrace Water Pollution Control Plant	Roxbury Twp.
Butterworth Sewage Treatment Plant	Morris Plains Boro., Parsippany-Troy Hills Twp., Randolph Twp.
Chatham Twp. WPCP #1 (Chatham Main)	Chatham Twp.
Chester Boro. Wastewater Treatment Plant	Chester Boro.
Clover Hill Sewage Treatment Plant	Mount Olive Twp.



Wastewater Utility	Municipalities Served in Morris County
Florham Park Sewerage Utility	Florham Park Boro., East Hanover Twp., Morris Twp.
Greystone Park Psychiatric Hospital	Parsippany-Troy Hills Twp.
Hackettstown Municipal Utilities Authority Sewage Treatment Plant	Mount Olive Twp., Washington Twp.
Hanover Municipal Utilities Authority Sewage Treatment Plant	East Hanover Twp. Hanover Twp., Morris Plains Boro., Morris Twp., Parsippany-Troy Hills Twp.
Hercules Company WPCP	Roxbury Twp.
Long Hill Twp. Sewage Treatment Plant	Long Hill Twp.
Mendham Boro. Sewage Treatment Plant	Mendham Boro.
Molitor Water Pollution Control Facility (Madison-Chatham Joint Meeting)	Chatham Boro., Chatham Twp., Madison Boro.
Moosepac Pond Sewage Treatment Plant/Water's Edge	Jefferson Twp.
Morristown Sewer Utility Sewage Treatment Plant	Hanover Twp., Morris Twp. Morristown
Mount Olive Villages Sewer Company Sewage Treatment Plant	Mount Olive Twp.
Musconetcong Sewerage Authority Sewage Treatment Plant (MSA)	Mount Arlington Boro., Mount Olive Twp., Netcong Boro., Roxbury Twp., Jefferson Twp.
Parsippany-Troy Hills Sewage Treatment Plant	Denville Twp., East Hanover Twp., Montville twp., Mountain Lakes Boro., Parsippany-Troy Hills Twp.
Rockaway Valley Regional Sewerage Authority Sewage Treatment Plan (RVRSA)	Boonton Town, Boonton Twp., Denville Twp., Dover Town, Mine Hill Twp., Montville Twp., Parsippany-Troy Hills Twp., Randolph Twp., Rockaway Boro., Rockaway Twp. Victory Gardens Boro., Wharton Boro.
Two Bridges Wastewater Treatment Plant	Butler Boro., Kinnelon Boro., Lincoln Park Boro., Pequannock Twp., Riverdale Boro.
United Water (Suez) Mid-Atlantic (Arlington Hills) Sewage Treatment Plant	Mount Arlington Boro., Roxbury Twp.
Schooley's Mountain Wastewater Treatment Plant	Washington Twp.
White Rock Lake Sewage Treatment Plant	Jefferson Twp.
Woodland Sewage Treatment Plant	Florham Park Boro., Madison Boro., Harding Twp., Morris Twp., Morristown Town

Source: NJDEP Office of Water Resource Management Coordination

2.8.4 PACKAGE PLANTS

Despite the existence of regional facilities, many areas of the County remain outside sewer service areas. As a result, many commercial and housing developments are served by small on-site discharge to groundwater (DGWs) and discharge to surface water (DSWs) systems that provide treatment for individual or small sites. Typically identified as “package plants,” these small, dedicated treatment systems are designed to serve specific users that typically generate over 2,000 gallons per day (gpd), with some older package treatment systems treating less than 2,000 gpd; they are not part of a regional system capable of addressing multiple users. These facilities provide a level of sewage treatment, which may be less rigorous than the treatment provided by the regional systems, but more effective than that provided by individual septic systems. According to analysis conducted by the Morris County Office of Planning and Preservation in October 2019, there are approximately 110 of these sites located throughout the County.



2.9 ENERGY RESOURCES

Jersey Central Power & Light (JCP&L) is the primary energy service provider for Morris County. Other service providers include Public Service Electricity & Gas (PSE&G), New Jersey Natural Gas, Transco Gas Transmission, Madison Electric Department, Elizabethtown Gas, Duke Energy, Columbia Gas Transmission, Butler Electric Company and Algonquin Pipeline Company. There are seven electric generation facilities, eight electric substations, seven natural gas facilities, three nuclear facilities, and three oil facilities identified in the County for the purposes of the risk assessment.

2.10 HIGH POTENTIAL LOSS FACILITIES

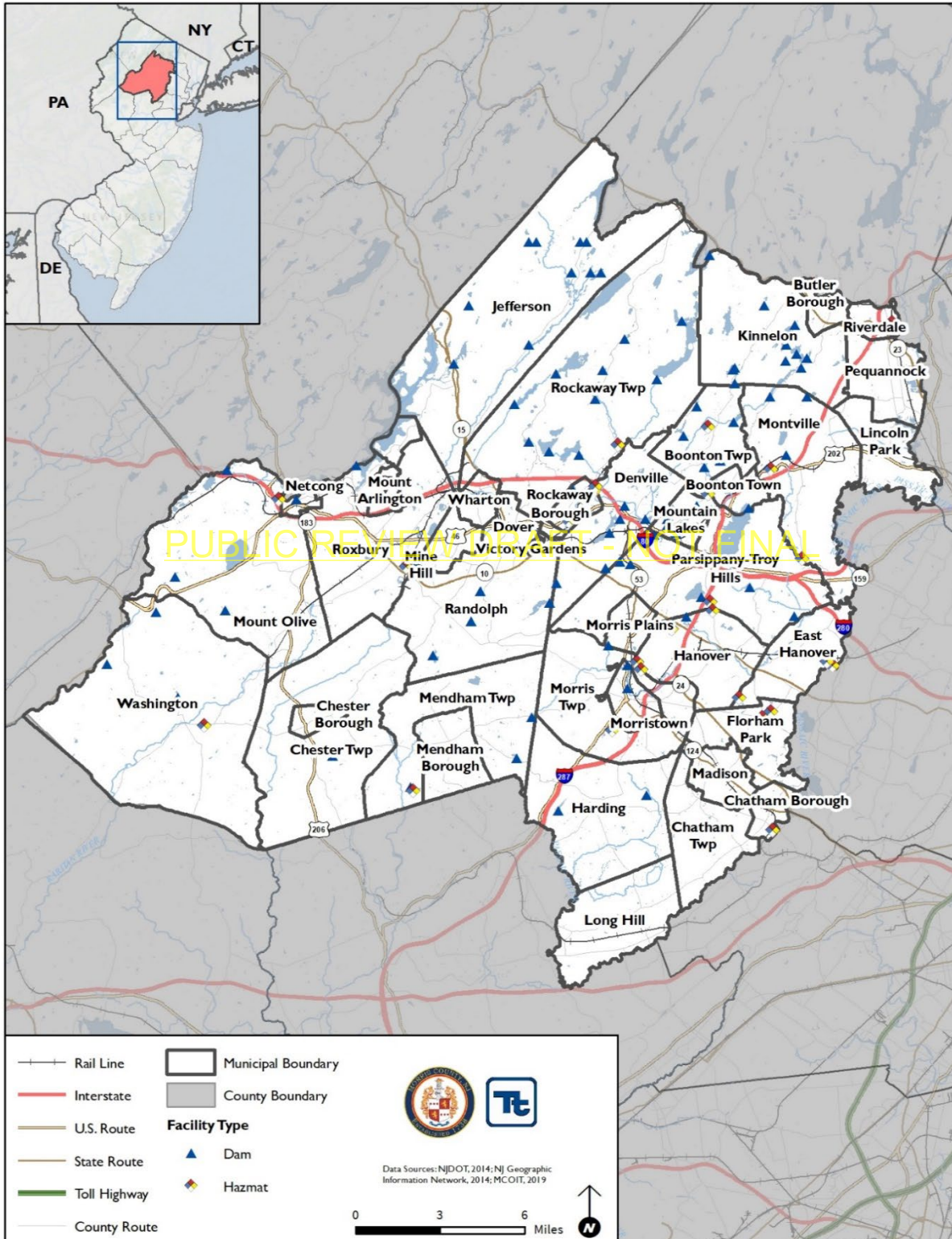
High-potential loss facilities include dams/levees, chemical storage facilities and military installations.

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Figure 12 displays the general locations of these facilities in the County.

Figure 12. High Potential Loss Facilities





2.11 DAMS AND LEVEES

According to the National Inventory of Dams there are 120 dams located in Morris County, 42 of which are classified with a high-hazard potential. Please see the Flooding section of the HIRA for more information on dams and levees in Morris County.

2.12 HAZARDOUS MATERIALS FACILITIES

There are 115 hazardous waste sites within Morris County for the purposes of this assessment. Please see the Hazardous Materials section of the HIRA for more information on fixed sites, known contaminated sites, and how substances are transported in Morris County.

2.13 MILITARY

Picatinny Arsenal is the Joint Center of Excellence for Guns and Ammunition, providing products and services to all branches of the U.S. military. Nestled in the northern New Jersey Highlands, there are more than 6,000 personnel which includes Soldiers, Sailors, Airmen, Marines, U.S. Federal employees and contractor personnel who lead in the research, development, acquisition and lifecycle management of advanced conventional weapon systems and ammunition.

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SECTION 3: HAZARD ANALYSIS AND RISK ASSESSMENT

3.1 RISK ASSESSMENT

A risk assessment is the process of measuring the potential loss of life, personal injury, and economic and property damage resulting from identified hazards. It allows planning personnel to address and reduce hazard impacts and emergency management personnel to establish early response priorities by identifying potential hazards and vulnerable assets. Results of the risk assessment are used to inform mitigation planning processes, including determining and prioritizing mitigation actions that reduce a community's risk to a specified hazard. Past, present, and future conditions must be evaluated to assess risk most accurately for each jurisdiction. The Morris County risk assessment includes the following:

- Identification of hazards of concern that impact Morris County
- Methodology and tools used to conduct the risk assessment
- Hazard ranking
- Hazards of concern profiles and vulnerability assessment

3.2 HAZARD SUMMARY

3.2.1 IDENTIFICATION OF HAZARDS

Morris County considered a full range of natural hazards that could impact the planning area, and then identified and ranked those hazards that presented the greatest concern. The process incorporated input from the County and participating jurisdictions; review of the State of New Jersey Hazard Mitigation Plan (NJ HMP) and previous hazard identification efforts; research of local, state, and federal information on the frequency, magnitude, and costs associated with the various hazards that have previously, or could feasibly, impact the region; and qualitative or anecdotal information regarding natural hazards and the perceived vulnerability of the study area's assets to them.

Except for hazardous substance release (fixed and in-transit), Morris County continued to focus on natural hazards in this update.

A total of eight natural hazards and one human-caused hazard of concern were identified as significant hazards affecting the entire planning area, to be addressed at the county level in this plan:

- Drought
- Earthquake
- Extreme Temperatures
- Flood
- Geological Hazards
- Hazardous Materials
- Severe Weather
- Severe Winter Weather
- Wildfire



3.2.2 CHANGES IN HAZARDS FOR THE 2025 HMP UPDATE

The planning team reviewed the hazards in the 2020 Morris County Hazard Mitigation Plan (HMP) to ensure that all hazards were still relevant to the county and to the hazard mitigation process. Three hazards were identified for removal from the updated strategy:

- Disease Outbreak
- Infestation
- Algae Bloom

These hazards were removed after discussion with the participating jurisdictions. It was decided that these three hazards were better and more effectively captured by other agencies and efforts. After examining the hazards list, it was also observed that the Dam Failure chapter predominantly contained impacts and data related to flood hazards. To enhance usability and streamline the plan, pertinent dam failure information has been incorporated as a subset within the Flood hazard chapter.

3.3 ASSESSMENT METHODOLOGY

Once the list of hazards for the 2025 plan update were finalized, an assessment of each hazard was conducted. Each hazard was assessed using the following criteria:

Hazard Profile

- Location – geographic area most affected by the hazard
- Extent – severity of each hazard
- Previous Occurrences and Losses
- Probability of Future Hazard Events
- Impacts of Climate Change

Following the hazard profiles, each hazard was assessed for the following vulnerabilities:

- Impact to Life, Health, and Safety
- Impact to the General Building Stock
- Impact to Critical Facilities and Lifelines
- Impact to the Economy
- Future Changes that May Impact Vulnerability
- Change of Vulnerability Since the 2020 HMP

Hazards were ranked on three metrics to determine an overall significance – Probability of Occurrence, Severity of Impact, and Extent, based on the following metrics:

Probability of Occurrence. Probability was assessed and ranked based on a hazard's likelihood over the next ten years.

Indicator	Probability of Future Incidents	Numerical Hazard Score
Highly Likely	An event probable in the next year	4
Likely	An event probable in the next 2–3 years	3
Possible	An event possible in the next 4–5 years	2
Unlikely	An event is unlikely in the next 10 years	1



Severity of Impact. Severity was assessed and ranked based on a hazard’s likely impacts to people, facilities, and property.

Severity Indicator	Deaths/Injuries	Shutdown of Facilities	Percentage of Property Destroyed	Numerical Hazard Score
Catastrophic	High number of deaths and/or injuries	Complete shutdown for 30 days or more	More than 50% damaged or destroyed	4
Critical	Multiple deaths and/or injuries	Complete shutdown for a week to 30 days	25% to 50% of property damaged or destroyed	3
Limited	Minor injuries only	Complete shutdown of facilities for one day to one week	10% to 25% of property damaged or destroyed	2
Minor	Few, if any, injuries	Shutdown of facilities only temporary	Less than 10% of property damaged or destroyed	1

Extent. Extent was assessed and ranked based on a hazard’s geographic impact on the planning area.

Extent Indicator	Spatial Extent	Numerical Hazard Score
Extensive	Expected to affect more than 50% of people and/or property	4
Moderate	Expected to affect 25–50% of people and/or property	3
Limited	Expected to affect 10–25% of people and/or property	2
Minimal	Expected to affect less than 10% of people and/or property	1

Public Perception. Public perception was measured through the results of the public survey.

Public Perception Indicator	Public Survey Result	Numerical Hazard Score
High	Most survey respondents marked high level of concern	3
Moderate	Most survey respondents marked moderate level of concern	2
Low	Most survey respondents marked low level of concern	1

3.3.1 GEOGRAPHIC INFORMATION SYSTEMS (GIS) METHODOLOGY

Leveraging Geographic Information Systems (GIS) in hazard mitigation planning allows readers and decision-makers to visualize hazard risks within the study area. Risk mapping and analysis through GIS can benefit decision-making throughout the emergency management lifecycle.

Advances in the geospatial field have resulted in numerous open-source datasets being made available to general users. The decision not to update the GIS system for the current plan was made in conjunction with county officials, considering the age of the previous update and the minimal changes to base data that did not justify a comprehensive mapping overhaul. Consequently, select information from the previous plan remains visible in the risk assessment. The decision not to update this information reflects the stability of the underlying data and strategic approach to maintain consistency in the risk assessment process.



3.4 HAZARD RANKINGS

Following the specific scoring for probability, severity and extent, hazards were given a total ranking based on each individual score.

- 1–5 Low
- 6–10 Moderate
- 11–15 High

The following table notes the scoring for each hazard assessed in this plan, on a countywide level.

Hazard	Probability	Severity of Impact	Extent	Public Perception	Total
Drought	Possible - 2	Minor - 1	Limited - 1	Moderate - 2	Moderate - 6
Earthquake	Unlikely – 1	Critical – 3	Moderate – 3	Low - 1	Moderate - 8
Extreme Temps	Highly Likely - 4	Limited - 2	Minimal - 1	High - 3	Moderate - 10
Flood	Highly Likely - 4	Critical – 3	Moderate - 3	High – 3	High - 13
Geological Hazards	Possible – 2	Limited - 2	Limited – 2	Moderate – 2	Moderate - 8
Hazardous Materials	Highly Likely – 4	Critical – 3	Limited – 2	High – 3	High - 12
Severe Weather	Highly Likely - 4	Limited – 2	Moderate - 3	High – 3	High - 12
Severe Winter Weather	Highly Likely - 4	Limited – 2	Moderate - 3	High – 3	High - 12
Wildfire	Possible - 2	Limited - 2	Limited - 2	Medium - 2	Moderate - 8

3.5 DROUGHT

3.5.1 2025 HMP UPDATE CHANGES

- All subsections have been updated using the best available data.
- Previous occurrences were updated with events that occurred between 2019 and 2024.

3.5.2 PROFILE

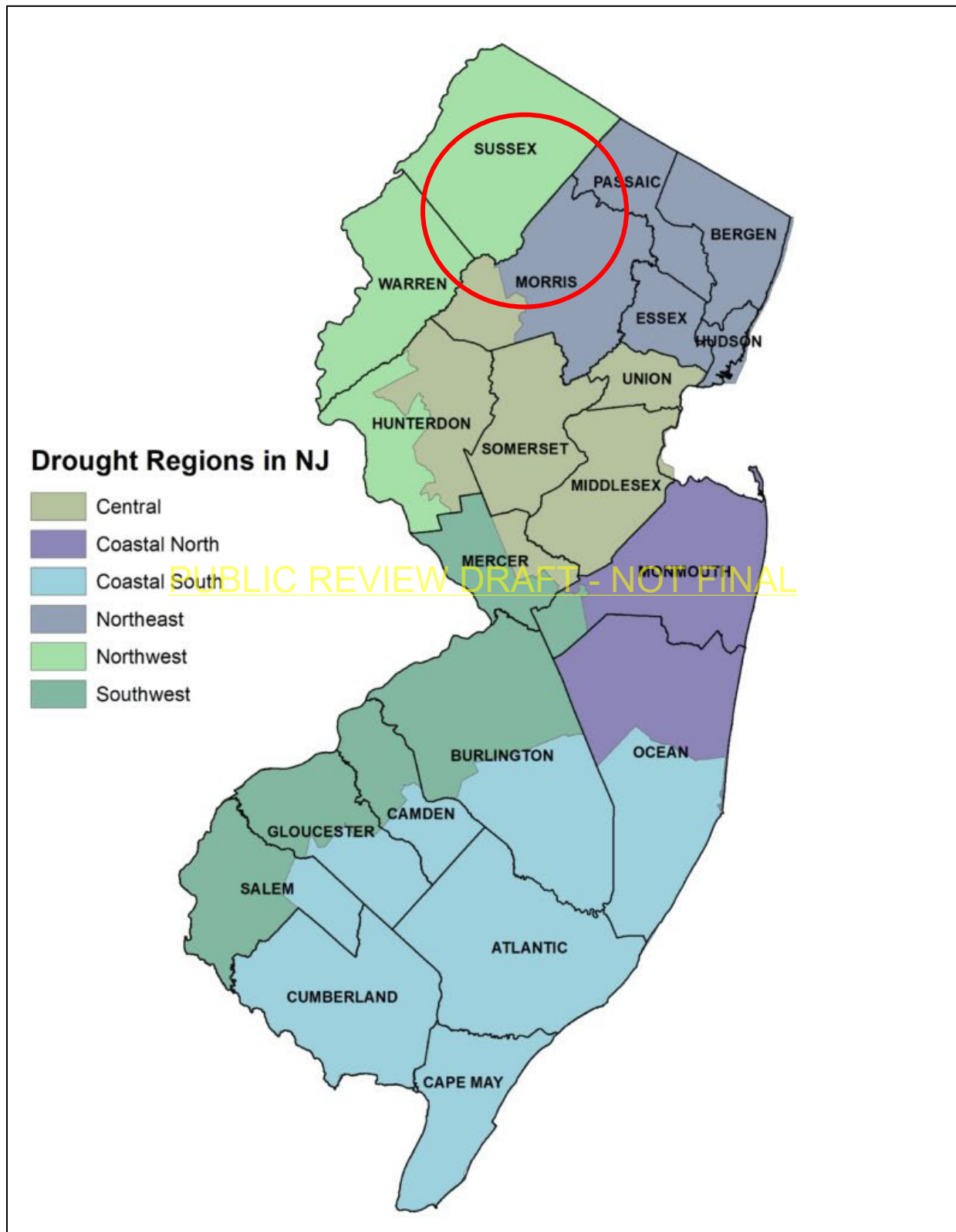
Drought is a period characterized by long durations of below-normal precipitation. Drought conditions occur in virtually all climatic zones, yet characteristics of drought vary significantly from one region to another, relative to normal precipitation within respective regions. Drought can affect agriculture, water supply, aquatic ecology, wildlife, and plant life. Drought is a temporary irregularity in typical weather patterns and differs from aridity, which reflects low rainfall within a specific region and is a permanent feature of the climate of that area.

3.5.3 LOCATION

Drought is a regional hazard that can impact the entire planning area at once. To better respond to drought conditions, New Jersey is separated into drought regions, allowing the state to respond to changing conditions without imposing restrictions on areas not experiencing water supply shortages. New Jersey is divided into six drought regions that are based on regional similarities in water supply sources and rainfall patterns; Figure 13 shows these drought regions. Morris County is mainly located in the Northeast Drought Region, with the western portion of the county located in the Central Drought Region.



Figure 13. Drought Regions of New Jersey



Source: NJOEM (State HMP) 2019; red circle indicates location of Morris County



Morris County's water supply sources are from confined groundwater, unconfined groundwater, and surface water sources.

3.5.4 EXTENT

The severity of a drought depends on the degree of moisture deficiency, duration, and 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. The State of New Jersey uses a multi-index system that takes advantage of some of these indices to determine the severity of a drought or extended period of dry conditions.

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 10 lists the PDSI classifications.

Table 10. Palmer Drought Severity Index (PDSI) Classifications

Category	Description	Possible Impacts	Palmer Drought Index
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.	-1.0 to -1.99
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.	-2.0 to -2.99
D2	Severe drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-3.0 to -3.99
D3	Extreme drought	Major crop or pasture losses; extreme fire danger; widespread water shortages or restrictions.	-4.0 to -4.99
D4	Exceptional drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.	-5.0 or less

Source: NOAA

The Division of Water Supply and Geoscience within the NJDEP regularly monitors various water supply conditions across the state based on the different Water Supply Regions. The water supply conditions aid the department in declaring the regions as being within one of the four stages of water supply drought - Normal, Drought Watch, Drought Warning, and Drought Emergency.

- A *Drought Watch* is an administrative designation made by the department when drought or other factors begin to adversely affect water supply conditions. A Watch indicates that conditions are dry but not yet significantly so. During a drought Watch, the department closely monitors drought indicators (including precipitation, stream flows, reservoir and groundwater levels, and water demands) and consults with affected water suppliers.
- A *Drought Warning* represents a nonemergency phase of managing available water supplies during the developing stages of drought and falls between the Watch and Emergency levels of drought response. A Drought Watch aims to avert a more serious water shortage that would necessitate the declaration of a water emergency, imposition of mandatory water use restrictions, bans on water use, or other potentially drastic measures.
- A *Drought Emergency* can only be declared by the governor. While drought warning actions focus on increasing or shifting the supply of water, efforts initiated under an Emergency focus on reducing water



demands. During an Emergency, a phased approach to restricting water consumption is typically initiated. Phase I water use restrictions typically target nonessential, outdoor water use.

3.5.5 PREVIOUS OCCURRENCES

Precipitation variability coupled with concentrated population centers can produce wide fluctuations in water availability and demands. The state and county have experienced several episodes of drought that have resulted in water shortages of varying degrees (e.g., mid-1960's, early to mid-1980's and 2001-2002). New Jersey experienced drought conditions in 2016 and 2017. A Drought Warning was declared for 14 counties in October 2016 that ended for all but two counties on April 12, 2017. The Drought Warning was lifted in full on August 11, 2017.

The State of New Jersey has experienced two FEMA-declared drought-related disasters or emergencies classified as a water shortage, as shown in Table 11. Generally, these disasters cover a wide region of the state and impact many counties. Morris County was included in both declarations.

Table 11. FEMA Declarations Related to Drought

Declaration	Event Date	Declaration Date	Event Description
DR-205	August 18, 1965	August 8, 1967	Drought: Water Shortage
EM-3083	October 19, 1980	May 21, 1983	Drought: Water Shortage

Source: FEMA

Agriculture-related drought disasters are quite common. The USDA Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans to producers suffering losses in those counties and in counties that are contiguous to a designated county. Table 12 shows agricultural declarations that included Morris County.

Table 12. Agricultural Drought Declarations Including Morris County

Year	Declaration Number	Causes
2015	S3930	Excessive heat and drought
2016	S4071	Freeze, excessive heat and drought
2022	S5342	Drought and excessive heat
2022	S5345	Drought and excessive heat
2022	S5346	Drought and excessive heat
2024	34027	Drought and excessive heat

Source: USDA

Major drought events that have impacted Morris County between 2014 and 2023 are identified in Table 13.

The National Centers for Environmental Information (NCEI) Storm Events Database records 41 instances of drought between January 1, 1997, and September 30, 2024. No injuries, deaths, property damages, or crop damages were reported by the NCEI. Recorded impacts include reduced reservoir and river levels, stress on vegetation, and reduction in crop yields. Protective measures implemented during these drought incidents included forest fire warnings, as well as voluntary and mandatory water restrictions. The University of Nebraska Lincoln's Drought Impact Reporter was also consulted for the same timeframe; recorded impacts for Morris County included impacts to tourism and recreation, water supply and quality, and restrictions.

Drought is a normal climate pattern that has occurred in varying degrees of length, severity, and size throughout history. The US Drought Monitor provides data on a week-by-week basis for drought conditions in counties. Table 13 shows drought data in Morris County for 1,303 weeks between January 2000 and December 2024, along with



the percentage of time that the county spent in each drought condition. Most of the time spent in drought conditions was spent in D0 or D1 drought.

Table 13. Time Spent in Drought Conditions 2000 - 2023

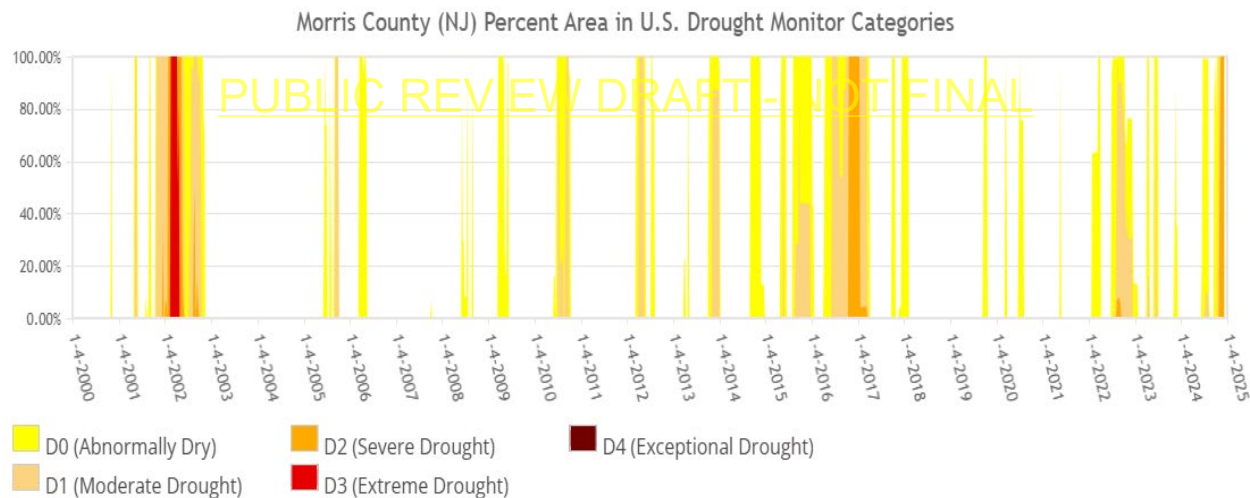
Drought Category	Number of Weeks Spent in Each Category*	Percentage of Time Spent in Each Category
None	1050	80.66%
D0	364	27.42%
D1	178	13.27%
D2	61	4.40%
D3	10	0.80%
D4	0	0.00%

*Different areas of the county can be in different drought categories in the same week

Source: US Drought Monitor

Figure 14 shows weekly drought conditions in Morris County graphically between the year 2000 and December 2024.

Figure 14. Drought History in Morris County 2000-2023



From the U.S. Drought Monitor website, <https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>, 12-18-2024



Source: US Drought Monitor

3.5.6 PROBABILITY

Based on the historical occurrences for drought, Morris County can anticipate a range of drought from abnormally dry to severe, or D0 to D2, based on the Palmer Drought Category. It is estimated that Morris County will continue to experience direct and indirect impacts of drought and its impacts on occasion, with the secondary effects causing potential disruption or damage to agricultural activities and creating shortages in water supply within communities. Morris County experienced some level of drought condition for approximately 20% of the period from 2000 to 2024. Extrapolating this trend, there is a 20% likelihood that Morris County will be in some level of drought condition in any given year, with an even lower probability of experiencing major drought conditions.



3.5.7 CLIMATE CHANGE IMPACTS

The future drought potential that New Jersey is modeled to experience indicates the State will experience more frequent but not necessarily more severe droughts. While all droughts impose some level of stress on water supplies, some will have long-term effects. If the projected more frequent droughts are spaced out over time, then New Jersey's water supply systems should be capable of recovering between droughts. However, more frequent droughts raise the potential for sequential droughts that do not allow for recovery of reservoir levels or aquifer storage, resulting in a scenario where moderate droughts could have aggregate results that severely test water supply capabilities.

As temperatures rise, people and animals will need more water to maintain their health and to thrive. Many economic activities, such as hydropower, raising livestock, and growing foods, will also require water. The amount of water available for these activities may be reduced as temperatures rise and if competition for water resources increases.

3.5.8 VULNERABILITY ASSESSMENT

3.5.8.1 IMPACT TO LIFE, HEALTH, AND SAFETY

The entire population of Morris County is exposed to drought events. Drought conditions can cause a shortage of potable water for human consumption, both in quantity and quality. A decrease in available water may also impact power generation and availability to residents.

Public health impacts may include an increase in heat-related illnesses, waterborne illnesses, recreational risks, limited food availability, and reduced living conditions. Vulnerable populations could be particularly susceptible to the drought hazard and cascading impacts due to age, health conditions, and limited ability to mobilize to shelter, cooling, and medical resources. Other possible impacts to health due to drought include increased recreational risks; 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. Health implications of drought are numerous. Some drought-related health effects are short-term while others can be long-term.

3.5.8.2 IMPACT ON GENERAL BUILDING STOCK

No structures are anticipated to be directly affected by a drought event. However, droughts contribute to conditions conducive to wildfires and reduce fire-fighting capabilities. Risk to life and property is greatest in those areas where forested areas adjoin urbanized areas (high density residential, commercial and industrial) also known as the wildfire urban interface (WUI). Therefore, all assets in and adjacent to, the WUI zone, including population, structures, critical facilities, lifelines, and businesses are considered vulnerable to wildfire. Refer to Section 1.14 for the Wildfire risk assessment.

3.5.8.3 IMPACT ON CRITICAL FACILITIES

While drought events generally do not impact buildings, droughts have the potential to impact agriculture-related facilities and critical facilities that rely on potable water supplies. Additionally, critical facilities in and adjacent to wildfire hazard areas are also considered vulnerable.

3.5.8.4 IMPACT ON THE ECONOMY

Drought can produce a range of impacts that span many economic sectors and can reach beyond areas experiencing physical drought. As previously discussed, water withdrawals are not only used for potable water but



for use in the commercial/industrial/mining sectors and power generation. When a state of water emergency is declared by the governor, the NJDEP may impose mandatory water restrictions and require specific actions to be taken by water suppliers. According to the New Jersey Water Supply Plan, a water emergency seeks to cause as little disruption as possible to commercial activity and employment.

A prolonged drought can have a serious economic impact on a community. Increased demand for water and electricity can 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.

Direct impacts of drought include reduced crop yield, increased fire hazard, reduced water levels, and damage to wildlife and fish habitat. The many impacts of drought can be listed as economic, environmental, or social. Direct and indirect losses include the following:

- Damage to crop quality and crop losses.
- Insect infestation leading to crop and tree losses.
- Plant diseases leading to loss of agricultural crops and trees.
- Reduction in outdoor activities.
- Increased risk of brush fires and wildfires due to dried crops, grasses, and dying trees.

The 2017 Census of Agriculture provides the most recent data for agriculture in Morris County. 418 farms are present in Morris County, encompassing 14,514 acres of total farmland. Most of the farms are under 49.9 acres in size; the median operation size of a farm is 12 acres. Table 14 lists the acreage of agricultural land exposed to the drought hazard.

Table 14. Agricultural Land in Morris County

Number of Farms	Land in Farms (acres)	Total Cropland (acres)	Harvested Cropland (acres)
471	14,552	6,831	5,084

Source: USDA 2022 Census of Agriculture

3.5.9 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

Understanding future changes that impact vulnerability in the county can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place. The County considered the following factors to examine potential conditions that may affect hazard vulnerability:

- Potential or projected development
- Projected changes in population
- Other identified conditions as relevant and appropriate, including the impacts of climate change.

3.5.9.1 PROJECTED DEVELOPMENT

The New Jersey Water Supply Plan indicates seasonal outdoor water use is rising and is attributable to continued suburbanization and increases in residential and commercial lawn and landscape maintenance. Changes in water demands by commercial/industrial users will depend on future development of this water type use and how effectively efficiency techniques are implemented.



3.5.9.2 PROJECTED CHANGES IN POPULATION

Potable water use is the second largest water use sector and largest consumptive use in New Jersey. As such, population projections, per capital water use, and percent nonresidential water use by water system are important factors to consider when assessing future water needs. According to the 2018 Morris County Strategic Plan, Morris County's population is projected to continue to increase. An increasing population will add new demands to existing water infrastructure. NJDEP assessed future water needs for public water systems factoring in future projected population growth for each municipality, culminating in the NJDEP New Jersey Water Supply Plan 2017-2022. The analysis suggests an additional 68 million gallons per day (mgd) (over 2015 rates) will be needed by 2025 to meet the anticipated growth in potable water demand, 103 mgd by 2030, 134 mgd by 2035, and 164 mgd by 2040.

3.5.9.3 CLIMATE CHANGE

The State of New Jersey is anticipated to undergo a rise in average annual temperatures in the future. The State is projected to encounter more frequent droughts which may affect the availability of water supplies and placing an increased stress on the population and available potable water sources. Agricultural water 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 for future changes.

3.5.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

Overall, the entire County remains vulnerable to droughts. Potable water withdrawal and demand continues to increase as population increases. In terms of the agricultural industry, from 2012 to 2017, there was a 28% increase in number of farms (366 farms to 471 farms), and a 0.65% increase in land in farms (14,458 acres to 14,552 acres) in Morris County. This may suggest an increase in water withdrawals, typically with peaks in the summer months, for traditional agricultural uses like irrigation of crops, plants, and animals as well as other horticultural uses.

3.6 EARTHQUAKE

3.6.1 2025 HMP UPDATE CHANGES

- All subsections have been updated using best available data.
- Previous occurrences were updated with events that occurred between 2019 and 2023.
- The New Jersey Geological and Water Survey (NJGWS) updated liquefaction data has been integrated into the vulnerability assessment.

3.6.2 PROFILE

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, a volcanic eruption, or by a manmade explosion. Most earthquakes occur at the boundaries where the earth's tectonic plates meet; less than 10% of earthquakes occur within plate interiors. New Jersey is in an area where the rarer plate interior-related earthquakes occur. As plates continue to move and plate boundaries change geologically over 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, also called the focus or hypocenter. The epicenter of an earthquake is the point on the earth's surface directly above the hypocenter or focus, where the earthquake originates. Earthquakes usually occur without warning, and their effects can impact areas of great distance from the epicenter.

According to the United States Geological Survey (USGS) Earthquake Hazards Program, an earthquake hazard is any disruption associated with an earthquake that may affect residents' normal activities. This includes surface faulting, ground shaking, landslides, liquefaction, tectonic deformation, tsunamis, and seiches, and other impacts as defined below:

- Surface faulting: Displacement that reaches the earth's surface during a slip along a fault. Commonly occurs with shallow earthquakes—those with an epicenter less than 20 kilometers.
- 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 a 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 the wet sand near the water at the beach. Earthquake shaking can cause this effect.
- Tectonic deformation: A change in the original shape of a material caused by stress and strain.
- Tsunami: A sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major sub-marine slides, or exploding volcanic islands.
- Seiche: The sloshing of a closed body of water, such as a lake or bay, from earthquake shaking.

Earthquakes can cause large and sometimes disastrous landslides and mudslides. Any steep slope is vulnerable to slope failure, often as a result of loss of cohesion in clay-rich soils. Unless properly secured, hazardous materials can be released, causing significant damage to the environment and people. Earthen dams and levees are highly susceptible to seismic events and the impacts of their eventual failures can be considered secondary risks for earthquakes.

Earthquakes can also cause dam failures. The most common mode of earthquake-induced dam failure is slumping or settlement of earth-fill dams where the fill has not been properly compacted. If the slumping occurs when the dam is full, then overtopping of the dam, with rapid erosion leading to dam failure is possible. Dam failure is also possible if strong ground motions heavily damage concrete dams. Earthquake-induced landslides into reservoirs have also caused dam failures.

Another secondary effect of earthquakes that is often observed in low-lying areas near water bodies is ground liquefaction. Liquefaction is the conversion of water-saturated soil into a fluid-like mass. This can occur when loosely packed, waterlogged sediments lose their strength in response to strong shaking. Liquefaction effects may occur along the shorelines of the ocean, rivers, and lakes and they can also happen in low-lying areas away from water bodies in locations where the ground water is near the earth's surface.

3.6.3 LOCATION

Earthquakes are most likely to occur in the northern parts of New Jersey (including Morris County) where significant faults are concentrated; however, low-magnitude events can and do occur in many other areas of the state. The National Earthquake Hazard Reduction Program (NEHRP) developed five soil classifications defined by their shear-wave velocity that impact the severity of an earthquake. The soil classification system ranges from A to E, where A represents hard rock that reduces ground motions from an earthquake and E represents soft soils that amplify and magnify ground shaking and increase building damage and losses.



Table 15. National Earthquake Hazard Reduction Program (NEHRP) Soil Classifications

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

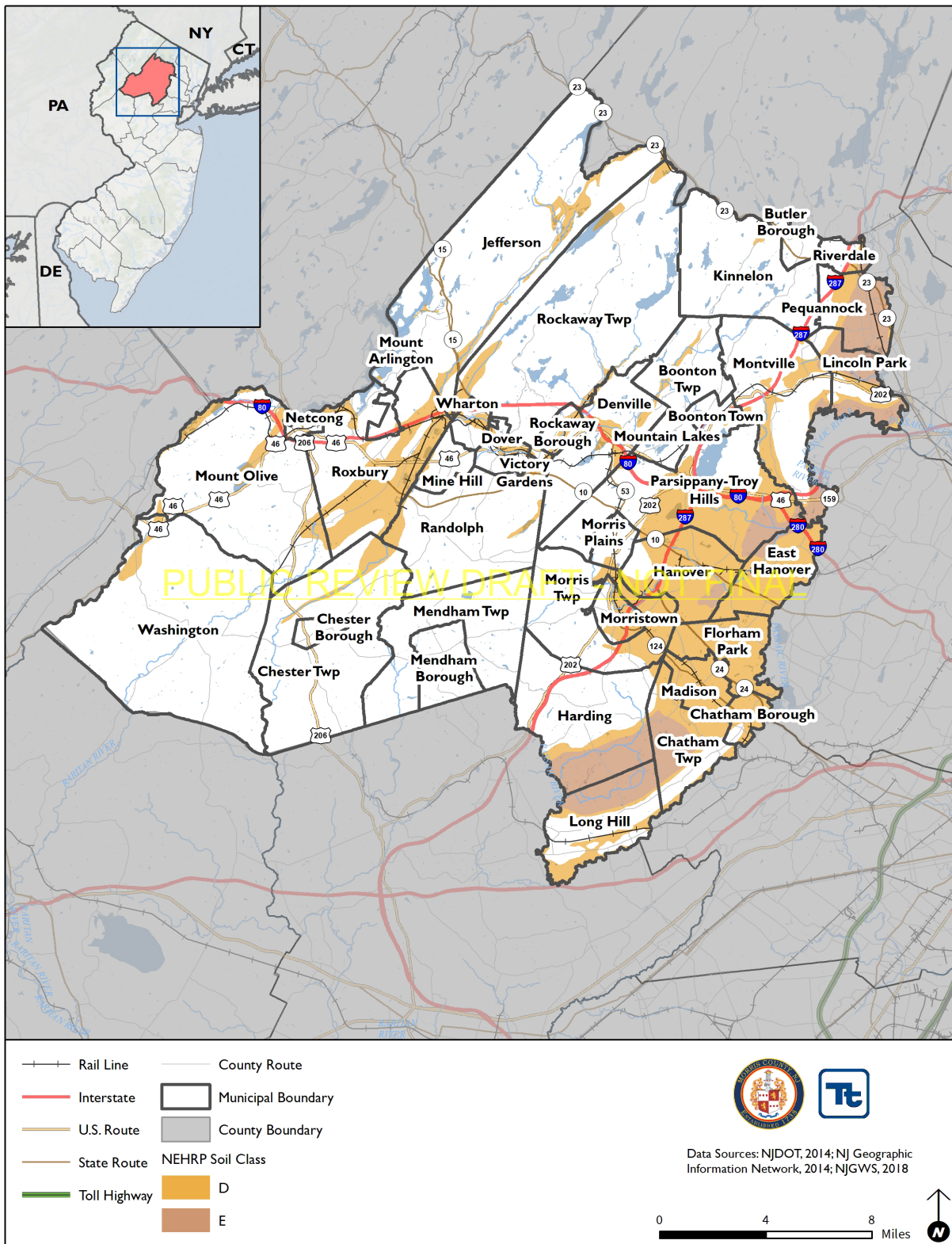
Source: FEMA

Figure 15 illustrates the NEHRP soils located in the northeast quadrant of the state. The available NEHRP soils information is incorporated into the HAZUS-MH earthquake model for the risk assessment (discussed in further detail later in this section). According to this figure, Morris County is predominately underlain by class C soils, with bands of class A in the norther portion of the county, bands of class D in the central portion of the county, and large areas of class D and E in the eastern areas.

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Figure 15. NEHRP Soils in Morris County

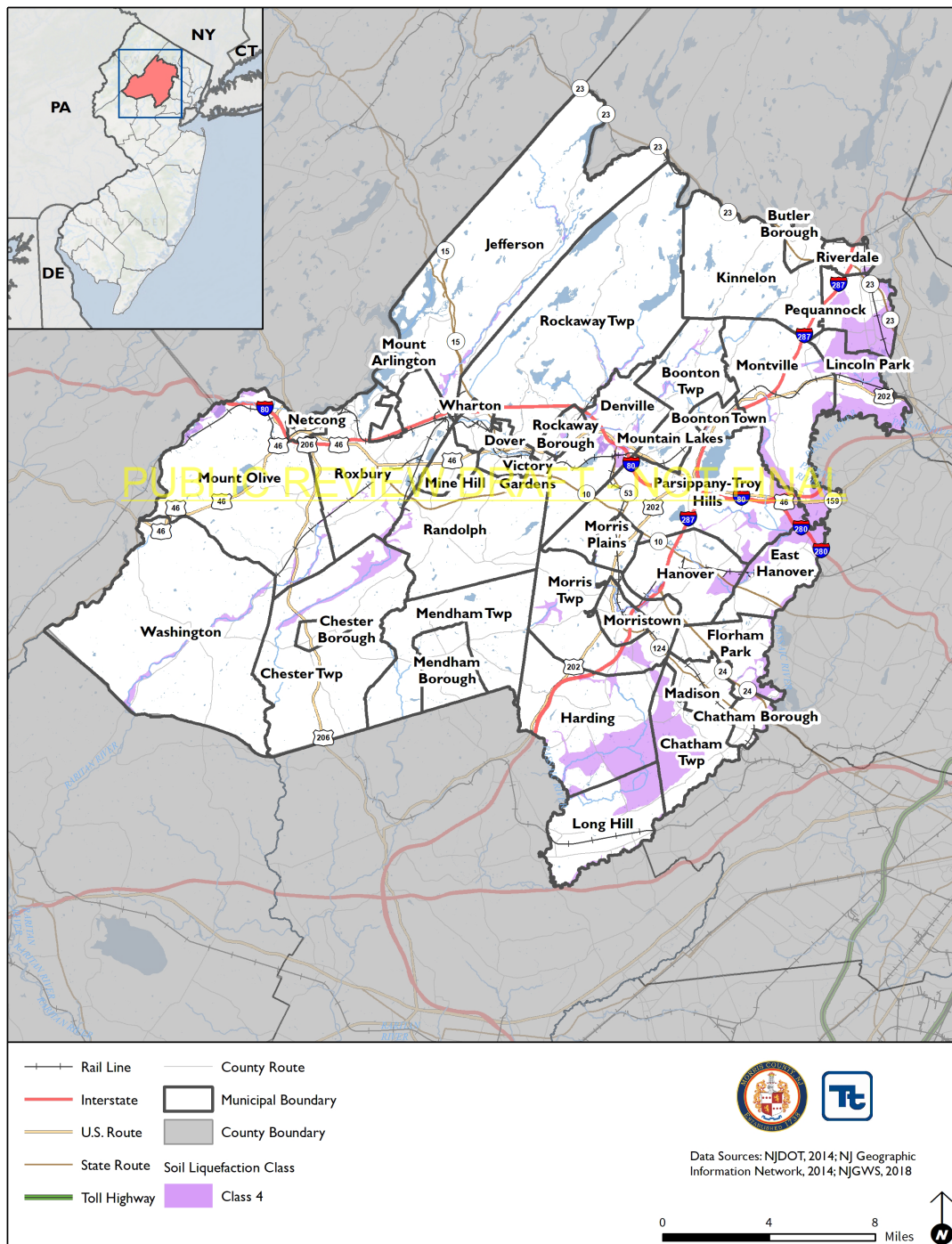


Source: 2020 Morris County Hazard Mitigation Plan



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. In terms of liquefaction susceptibility, the majority of the susceptibility is found in the eastern portion of Morris County with small areas throughout other areas of the county.

Figure 16. Liquefaction Susceptibility in Morris County



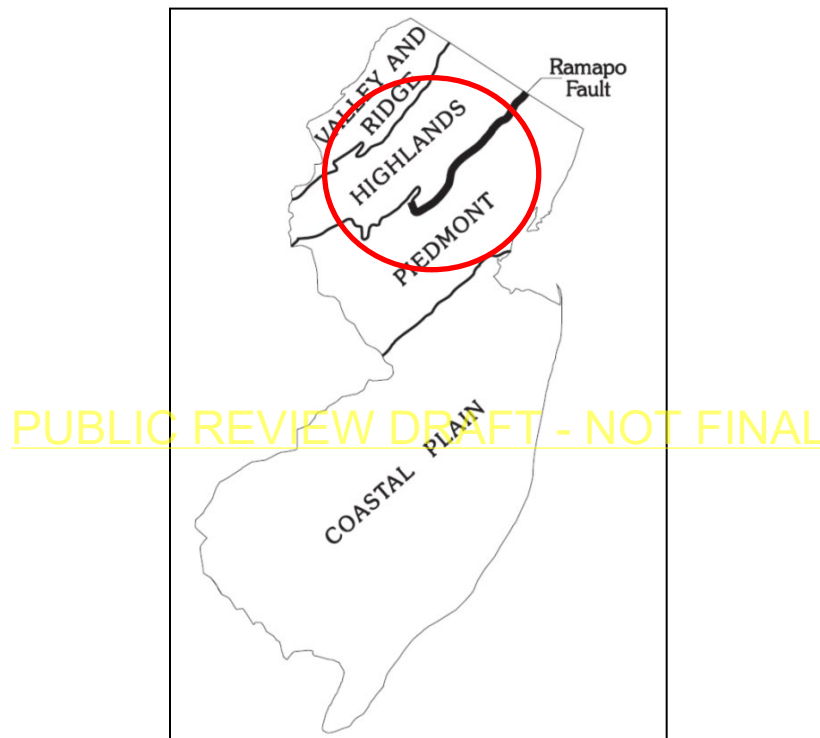
Source: 2020 Morris County Hazard Mitigation Plan



Faults are observed and mapped at the surface. There is no known surface ground displacement along faults in the eastern U.S. from historic earthquakes. Earthquake epicenters in eastern North America and the New Jersey area, in general, occur on known faults. The faults in these parts are from tectonic activity more than 200 million years ago.

There are many faults in New Jersey; however, the Ramapo Fault, which separates the Piedmont and Highlands Physiographic Provinces, is best known and runs through Morris County. 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. Figure 17 illustrates the relationship of the Ramapo fault line with the physiologic provinces of New Jersey.

Figure 17. Physiographic Provinces of New Jersey and the Ramapo Fault Line



Source: New Jersey Department of Environmental Protection

Note: The red circle indicates the approximate location of Morris County. The County is part of Piedmont Province and the Highlands Province.

3.6.4 EXTENT

An earthquake's magnitude and intensity are used to describe the size and severity of the event. Magnitude describes the size at the focal point of an earthquake, and intensity describes the overall severity of shaking felt during the event. The earthquake's magnitude is a measure of the energy released at the source of the earthquake. Magnitude was formerly expressed by ratings on the Richter scale but is now most commonly expressed using the moment magnitude (M_w) 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). The scale is as follows:

- Great $M_w > 8$
- Major $M_w = 7.0 - 7.9$
- Strong $M_w = 6.0 - 6.9$
- Moderate $M_w = 5.0 - 5.9$



- Light Mw = 4.0 – 4.9
- Minor Mw = 3.0 – 3.9
- Micro Mw = 3.0 – 3.9

The most used intensity scale is the Modified Mercalli (MM) Intensity scale. The lower numbers of the intensity scale generally describe how the earthquake is felt by people, while the higher numbers of the scale are based on observed structural damage. Ratings of the scale detailed further in Table 16.

Table 16. 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 2016

The MM Intensity Scale is generally represented visually using shake maps, which show the expected ground shaking at any given location produced by an earthquake with a specified magnitude and epicenter. 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. A USGS shake map shows the variation of ground shaking in a region immediately following significant earthquakes. Table 17 displays the MM Intensity Scale and its relationship to the areas peak ground acceleration (PGA).

Table 17. Modified Mercalli Intensity and PGA Equivalents

Modified Mercalli Intensity	Acceleration (%g) (PGA)	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

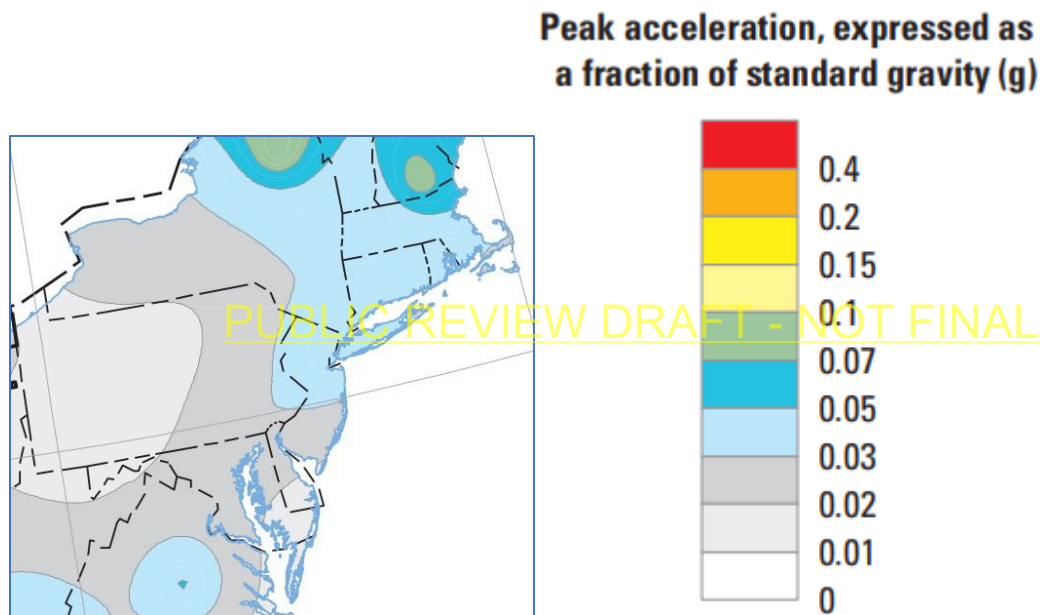
Source: Freeman et al. 2004



The ground experiences acceleration as it shakes during an earthquake. The peak ground acceleration (PGA) is the largest acceleration recorded by a monitoring station 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. 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. Damage levels experienced in an earthquake vary with the intensity of ground shaking and with the seismic capacity of structures.

According to the USGS Earthquake Hazards Program, PGA maps (also known as earthquake hazard maps) are used as planning tools when designing buildings, bridges, highways, and utilities so that they can withstand shaking associated with earthquake events. These maps are also used as planning tools for the development of building codes that establish construction requirements appropriate to preserve public safety.

Figure 18. Peak Ground Acceleration



Source: USGS

Table 18. Damage Levels Experienced in Earthquakes

Ground Motion Percentage	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, with higher levels of damage in poorly designed buildings. At this level of ground shaking, 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

Note: %g Peak Ground Acceleration



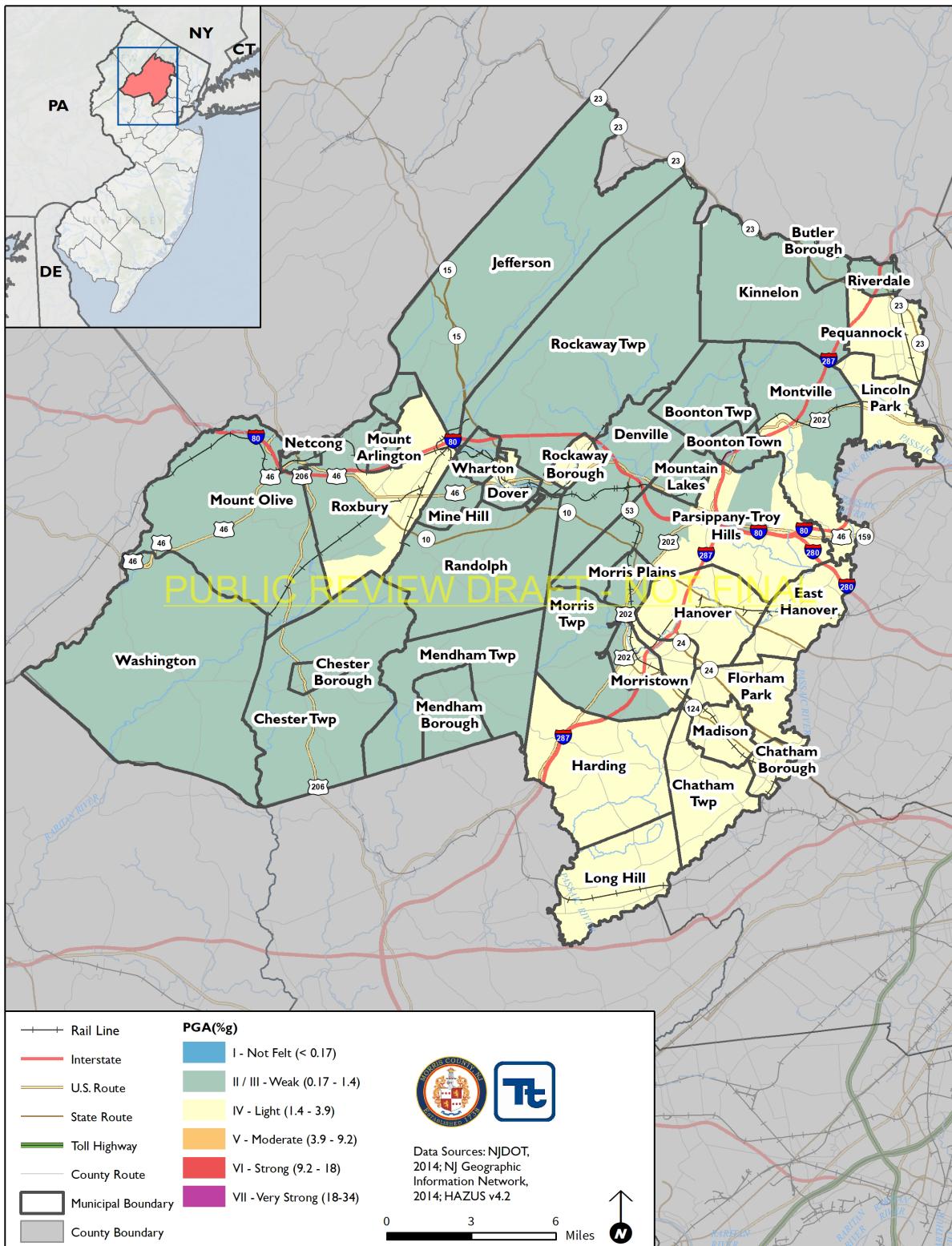
National maps of earthquake shaking hazards provide information for creating and updating seismic design requirements for building codes, insurance rate structures, earthquake loss studies, retrofit priorities, and land use planning. After thorough review of the studies, professional organizations of engineers update the seismic-risk maps and seismic design requirements contained in building codes. The USGS updated the National Seismic Hazard Maps in 2014. New seismic, geologic, and geodetic information on earthquake rates and associated ground shaking were incorporated into these revised maps.

Figure 19, Figure 20 and Figure 21 illustrate geographic distributions of the modified Mercalli scale based on PGAs (%g) across Morris County for 100 , 500-, and 2,500-year MRP events by U.S. Census tract. A 100-year mean return period (MRP) event is an earthquake with 1-percent chance that mapped ground motion levels (PGA) will be exceeded in any given year. 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.

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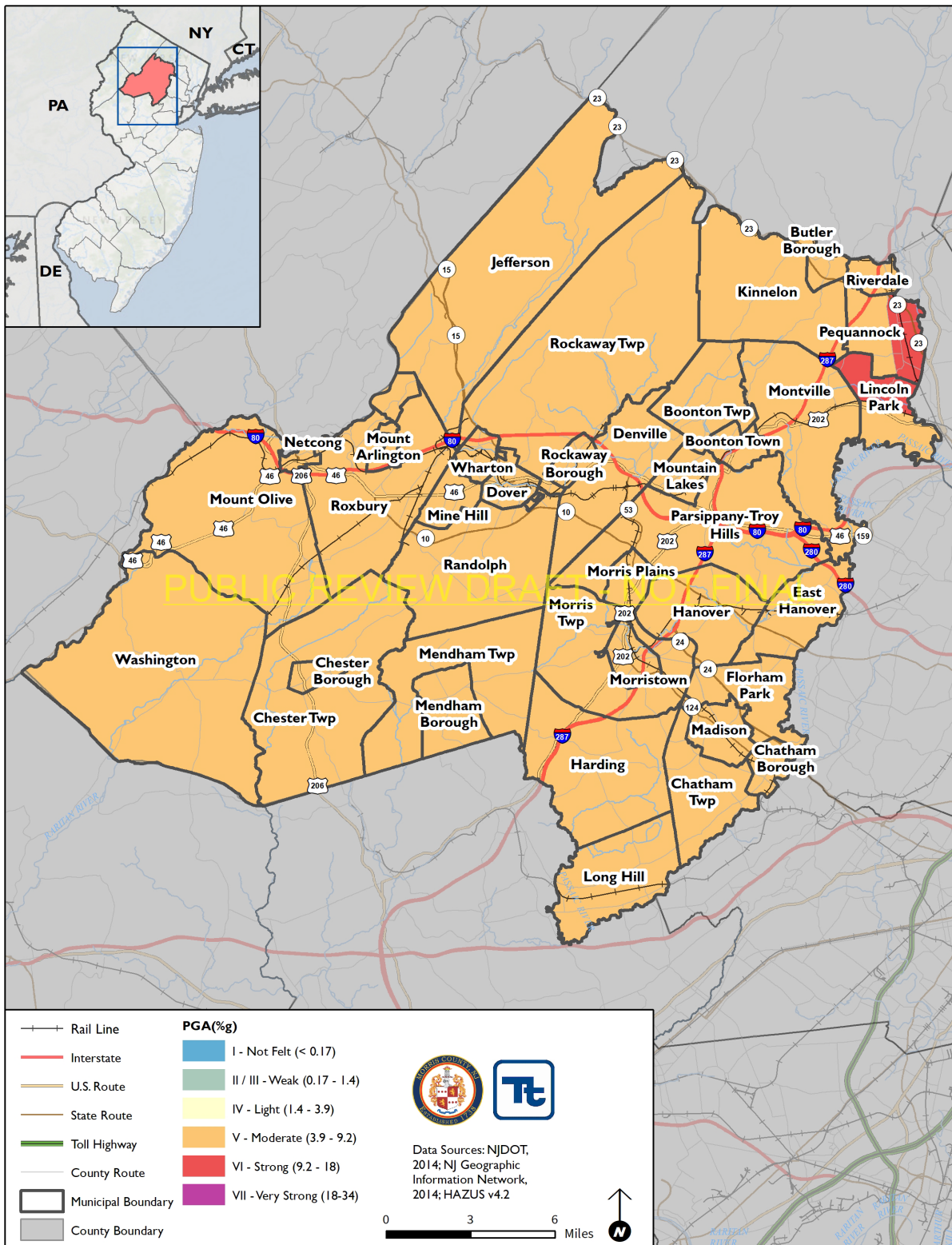
Figure 19. PGA 100-Year Mean Return Period for Morris County



Source: 2020 Morris County Hazard Mitigation Plan



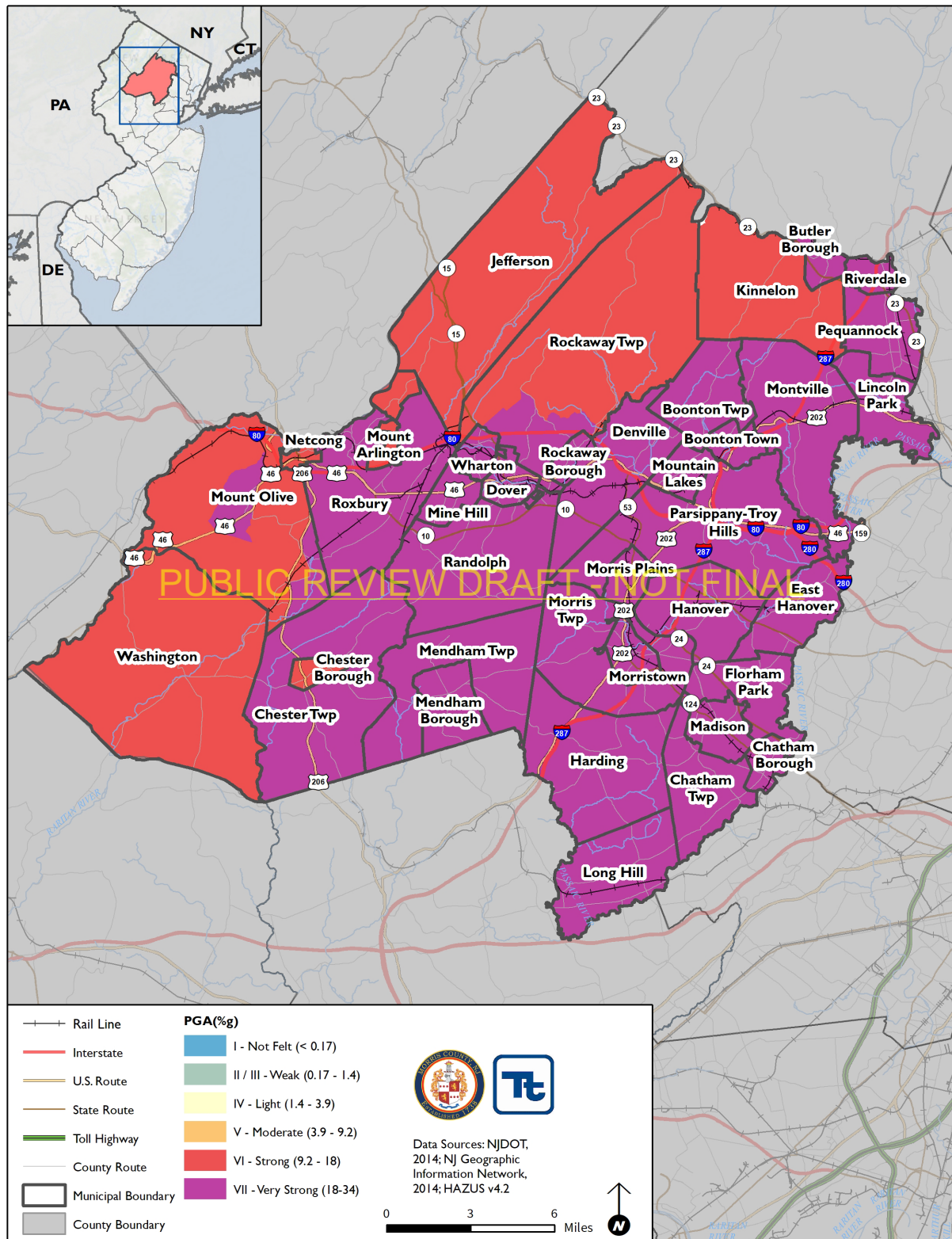
Figure 20. PGA 500-Year Return Period for Morris County



Source: 2020 Morris County Hazard Mitigation Plan



Figure 21. Peak Ground Acceleration 2,500-Year Mean Return Period for Morris County



Source: 2020 Morris County Hazard Mitigation Plan



3.6.5 PREVIOUS OCCURRENCES

New Jersey has an extensive history of earthquakes. Small earthquakes occur several times a year and generally do not cause significant damage. The largest earthquake to impact New Jersey occurred in 1783. That earthquake, a magnitude 5.3 quake, occurred west of New York City and was felt from New Hampshire to Pennsylvania.

Figure 22 illustrates earthquake epicenters in Morris County; Figure 23 illustrates earthquake events with epicenters located in New Jersey. Of the 178 events in the State, 17 earthquake epicenters were in Morris County.

Figure 22. Earthquakes with Epicenters in Morris County

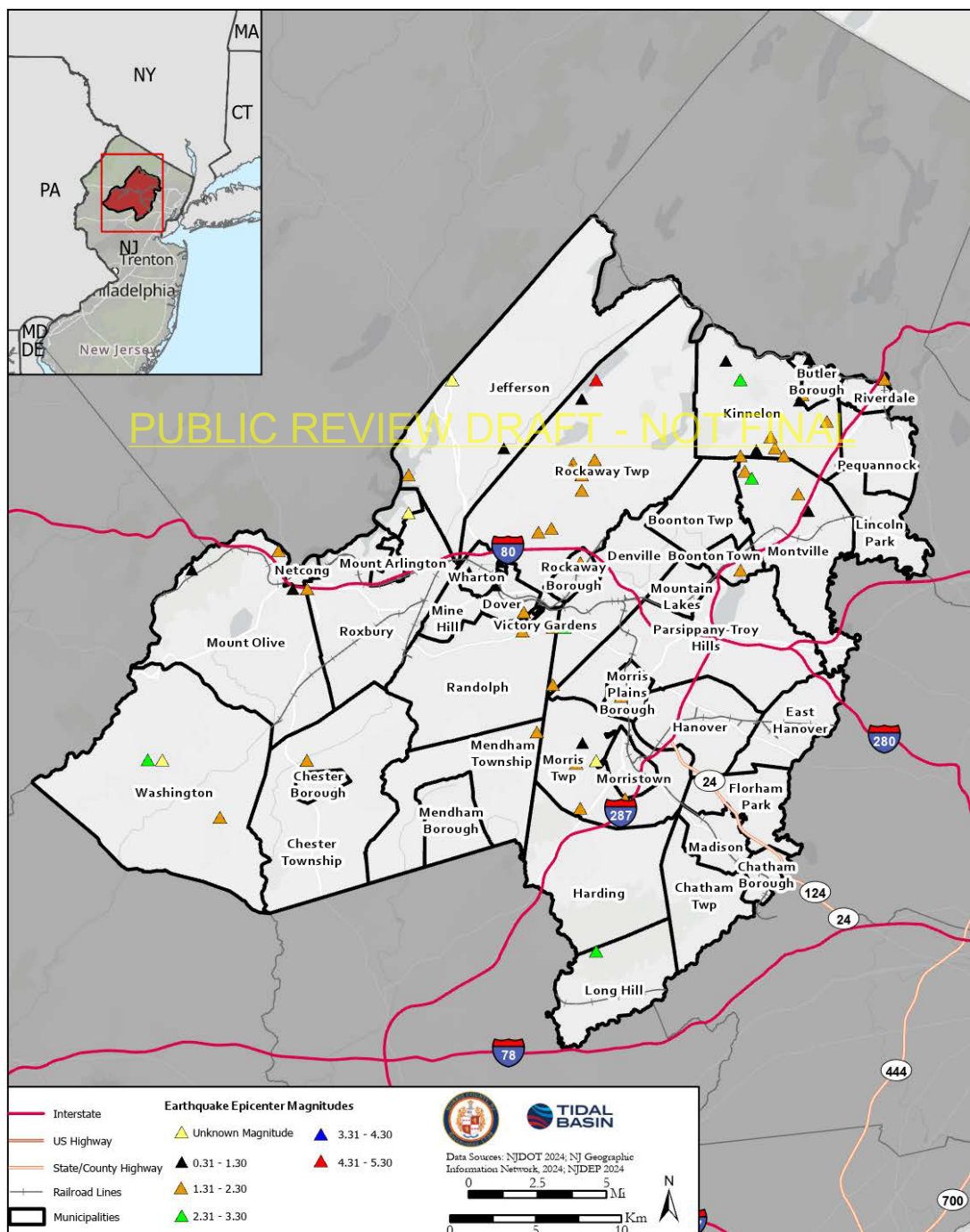
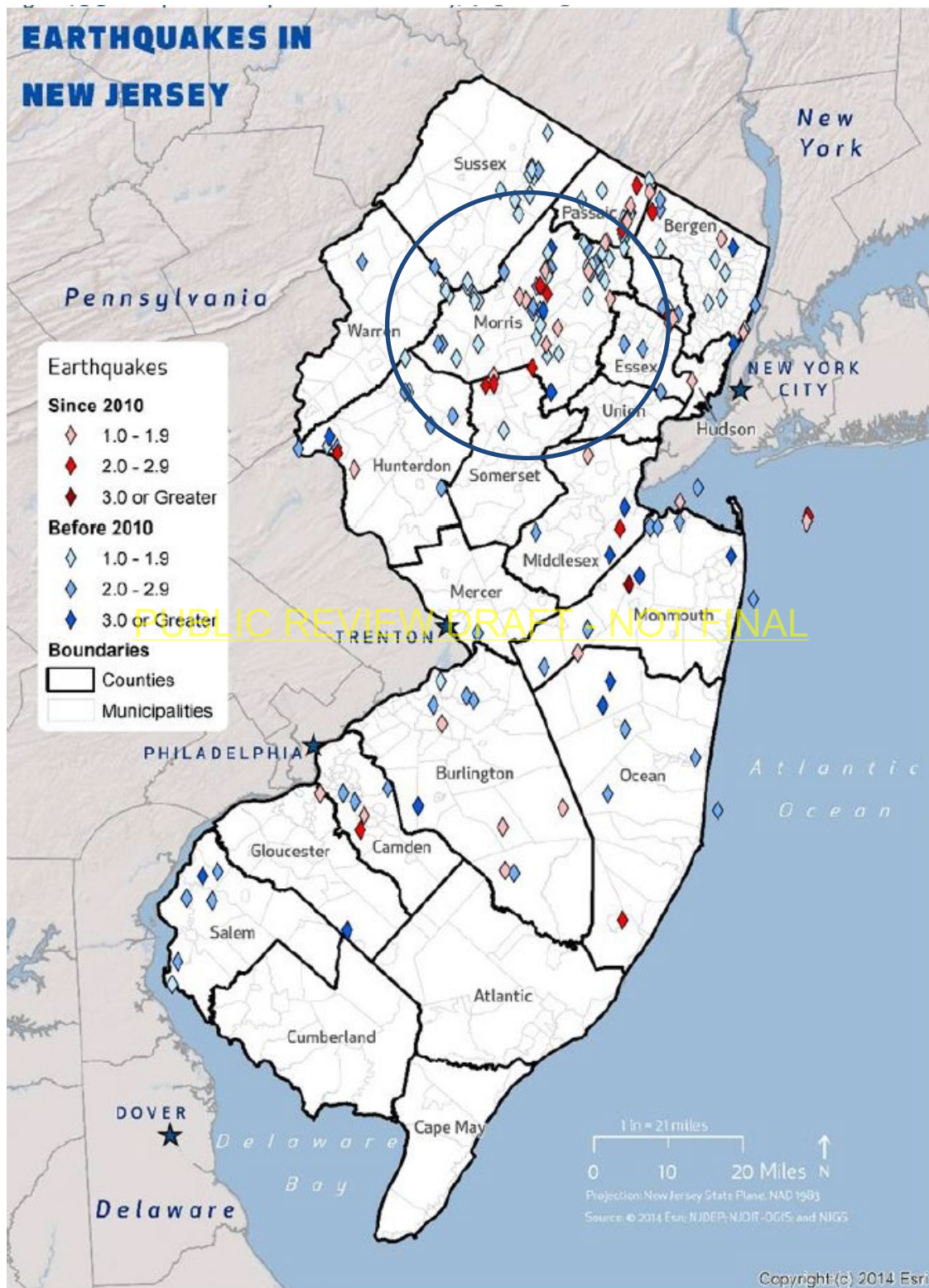




Figure 23. Earthquakes with Epicenters in New Jersey, 1783 - 2023



Source: New Jersey Hazard Mitigation Plan 2024; NJDEP

Note: The blue circle indicates the location of Morris County. The figure shows that several earthquakes have been epicentered in Morris County.



Earthquake events that have impacted Morris County between 2019 and 2024 are listed in Table 19. Neither Morris County nor the State of New Jersey has not been included in any FEMA disaster (DR) or emergency (EM) declarations for earthquake events.

Table 19. Earthquakes Impacting Morris County, 2014 - 2024

Date of Event	Magnitude	Location	Losses/Impacts
August 14, 2015	2.6 Earthquake	Bernardsville, NJ	A magnitude 2.6 earthquake took place in Bernardsville, NJ at the border of Morris and Somerset County. The quake was faintly felt in Morris County.
August 22, 2015	1.2 Earthquake	Fairfield	A magnitude 1.2 earthquake took place in Fairfield at the border of Essex and Morris County.
January 2, 2016	2.1 Earthquake	Ringwood, NJ	A magnitude 2.1 earthquake took place in Ringwood, NJ. The quake was faintly felt in Morris County.
February 19, 2016	1.1 Earthquake	Butler	A magnitude 1.1 Earthquake took place just north of Butler at the border of Morris and Passaic County.
February 21, 2016	0.5 Earthquake	Kinnelon	A magnitude 0.5 earthquake took place just north of Kinnelon at the border of Morris and Passaic County.
July 4, 2016	1.1 Earthquake	Kinnelon	A magnitude 1.1 earthquake took place in Kinnelon.
March 29, 2017	1.2 Quarry Blast	Riverdale	A quarry blast registered a 1.2 magnitude earthquake at Riverdale.
March 25, 2017	1.3 Earthquake	Morris Plains	A magnitude 1.3 earthquake took place in Morris Plains.
September 25, 2017	1.7 Earthquake	Morristown	A magnitude 1.7 earthquake took place in Morristown.
September 30, 2017	1.0 Earthquake	Morristown	A magnitude 1.0 earthquake took place in Morristown.
November 30, 2017	4.1 Earthquake	Dover, DE	Morris County residents felt ground shake from nearby 4.1 magnitude earthquake in Dover, Delaware. The quake was felt from central Virginia to Massachusetts.
April 12, 2019	1.8 Earthquake	Clifton, NJ	A magnitude 1.8 earthquake took place in Clifton, NJ. The quake was faintly felt in Morris County.
August 4, 2019	0.8 Earthquake	Pompton Lakes	A magnitude 0.8 earthquake took place in Pompton Lakes.
August 30, 2022	1.7 Earthquake	Telemark, NJ	A magnitude 1.7 earthquake took place one mile from Lake Telemark, NJ.
August 30, 2022	2.3 Earthquake	Dover, NJ	A magnitude 2.3 earthquake hit near Dover, New Jersey. According to documented reports, 66 people felt the earthquake. No tsunami was triggered due to the quake.
April 5, 2024	4.8 Earthquake	Tewksbury, NJ	A magnitude 4.8 earthquake occurred on April 5 around 10:23 AM, centered in Tewksbury. While it was felt across the New York metropolitan area, the Washington DC metropolitan area and other parts of the northeastern US between Virginia and Maine, no major damage was reported. Several aftershocks were felt.
July 31, 2024	2.2 Earthquake	Califon, NJ	A magnitude 2.2 earthquake occurred at 1:44 AM. No reports of damages or injuries in the area.

Source: NJGWS, USGS

3.6.6 PROBABILITY

Earthquakes cannot be predicted and may occur any time of the day or year. The probability of damaging earthquakes affecting New Jersey and Morris County is low. However, there is a definite threat of major earthquakes that could cause widespread damage and casualties in New Jersey. Major earthquakes are infrequent in the State and may occur only once every few hundred years or longer, but the consequences of major earthquakes would be very high.



3.6.7 CLIMATE CHANGE IMPACTS

The potential impacts of global climate change on earthquake probability are unknown. Some scientists feel 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 and stimulate volcanic activity according to research into prehistoric earthquakes and volcanic activity. National Aeronautics and Space Administration (NASA) and USGS scientists found that retreating glaciers in southern Alaska might be opening the way for future earthquakes.

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. There are currently no models available to estimate these impacts.

3.6.8 VULNERABILITY ASSESSMENT

3.6.8.1 IMPACT TO LIFE, HEALTH AND SAFETY

The entire county may experience an earthquake. However, the degree of impact is dependent on many factors including the age and type of construction people live in, the soil types their homes are located on, the intensity of the earthquake. Whether directly or indirectly impacted, residents could be faced with business closures, road closures that could isolate populations, and loss of function of critical facilities and utilities.

The U.S. Census Morris County population estimate for 2022 was 511,151. Overall, risk to public safety and loss of life from an earthquake in the county is expected to be 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.

As noted earlier, NEHRP soil classes D and E and liquefaction class 4 soils can amplify ground shaking to damaging levels even during a moderate earthquake, and thus increase risk to the population. Populations within municipalities located on NEHRP class D and E soils and high liquefaction susceptible soils were estimated and are listed in Table 20. Overall, approximately 170,939 people (34.3% of the county's population) reside on NEHRP class D and E soils. In addition, 22,461 people (4.5% of the county's population) reside in areas of high susceptibility to liquefaction. The Borough of Florham Park and the Borough of Madison have the greatest percent of their population living on NEHRP class D and E soils (100% and 99.9%, respectively). The Township of Pequannock has the greatest percent of its population living on liquefaction class 4 soils (53.6%).

Table 20. Approximate Population Living on NEHRP Class D and E and Liquefaction-Susceptible Soils

Municipality	American Community Survey (2017-2021) Population	Estimated Population Exposed			
		NEHRP D&E Soils	% of Total	Liquefaction Class 4	% of Total
Town of Boonton	8,815	85	1.0%	0	0.0%
Township of Boonton	4,380	231	5.3%	13	0.3%
Borough of Butler	8,047	0	0.0%	0	0.0%
Chatham Borough	9,212	7,682	85.3%	49	0.5%
Chatham Township	10,983	5,628	53.6%	572	5.4%
Chester Borough	1,514	0	0.0%	0	0.0%



Municipality	American Community Survey (2017-2021) Population	Estimated Population Exposed			
		NEHRP D&E Soils	% of Total	Liquefaction Class 4	% of Total
Chester Township	7,713	175	2.2%	3	0.0%
Denville Township	17,107	3,234	19.2%	1,357	8.1%
Town of Dover	18,460	5,195	28.4%	0	0.0%
Township of East Hanover	11,105	11,055	98.3%	822	7.3%
Borough of Florham Park	12,585	11,792	100.0%	76	0.6%
Township of Hanover	14,677	10,984	76.1%	43	0.3%
Township of Harding	3,871	295	7.6%	315	8.1%
Township of Jefferson	20,538	2,622	12.2%	11	0.1%
Borough of Kinnelon	9,966	189	1.8%	0	0.0%
Borough of Lincoln Park	10,915	6,010	57.4%	4,911	46.9%
Township of Long Hill	8,629	911	10.4%	184	2.1%
Borough of Madison	16,937	16,066	99.9%	0	0.0%
Borough of Mendham	4,981	0	0.0%	0	0.0%
Township of Mendham	6,016	0	0.0%	0	0.0%
Township of Mine Hill	3,651	492	13.6%	0	0.0%
Township of Montville	22,450	5,942	27.3%	1,896	8.7%
Township of Morris	6,153	9,838	43.7%	783	3.5%
Borough of Morris Plains	33,974	630	11.2%	0	0.0%
Town of Morristown	20,180	11,365	60.3%	160	0.9%
Borough of Mount Arlington	5,909	127	2.3%	0	0.0%
Township of Mount Olive	28,886	5,052	17.4%	171	0.6%
Borough of Mountain Lakes	4,472	0	0.0%	0	0.0%
Netcong Borough	3,375	0	0.0%	0	0.0%
Township of Parsippany-Troy Hills	56,162	20,629	38.6%	2,503	4.7%
Township of Pequannock	15,571	14,633	94.4%	8,308	53.6%
Township of Randolph	26,504	728	2.8%	0	0.0%
Borough of Riverdale	4,107	2,110	49.8%	134	3.2%
Borough of Rockaway	6,598	1,685	26.0%	12	0.2%
Township of Rockaway	25,341	587	2.4%	15	0.1%
Township of Roxbury	22,950	12,948	55.2%	29	0.1%
Borough of Victory Gardens	1,582	160	9.7%	0	0.0%
Township of Washington	18,197	1,183	6.3%	93	0.5%
Borough of Wharton	7,241	675	10.2%	0	0.0%
Morris County (Total)	509,285	170,939	34.3%	22,461	4.5%

Sources: American Community Survey 5-year Estimate, 2017-2021; NJGWS, 2016

Populations considered most vulnerable are those located in/near the built environment, particularly those near unreinforced masonry structures. Of these most vulnerable populations, socially vulnerable populations, including



the elderly (persons over age 65) and individuals living below the poverty threshold, are most susceptible. Factors leading to this higher susceptibility include decreased mobility and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Within the NEHRP class D and E soils, there are 29,464 people over the age of 65 and 8,484 people below the poverty level. Within liquefaction class 4 soils, there are 4,350 people over the age of 65 and 946 people below the poverty level.

Residents may be displaced or require temporary to long-term sheltering due to an earthquake event. The number of people requiring shelter is generally less than the number displaced because some displaced persons use hotels or stay with family or friends following a disaster event. Table 21 summarizes the households HAZUS-MH estimates will be displaced and population that may require short-term sheltering as a result of the 100-, 500- and 2,500-year MRP earthquake events.

Table 21. Summary of Estimated Sheltering Needs for Morris County

Scenario	Displaced Households	Persons Seeking Short-Term Shelter
100-Year Earthquake	0	0
500-Year Earthquake	69	37
2,500-Year Earthquake	905	483

Source: HAZUS-MH v4.2

According to the 1999-2003 NYCEM Summary Report (Earthquake Risks and Mitigation in the New York / New Jersey / Connecticut Region), a strong correlation exists between structural building damage and number of injuries and casualties from an earthquake event. Further, time of day also exposes different sectors of the community to the hazard. For example, HAZUS-MH considers residential occupancy at its maximum at 2:00 AM, whereas educational, commercial, and industrial sectors are at their maximum at 2:00 PM, and peak commute time is at 5:00 PM. Whether directly impacted or indirectly impacted, the entire population will be affected to some degree. Business interruption could prevent people from working, road closures could isolate populations, and loss of utilities could impact populations that suffered no direct damage from an event.

Table 22 summarizes the County-wide injuries and casualties estimated for the 100-, 500-, and 2,500-year MRP earthquake events.

Table 22. Estimated Number of Injuries and Casualties from 100-, 500- and 2,500-Year MRP Earthquakes

Level of Severity	Time of Day		
	2:00 AM	2:00 PM	5:00 PM
100-year MRP			
Injuries	0	0	0
Hospitalization	0	0	0
Casualties	0	0	0
500-year MRP			
Injuries	20	31	23
Hospitalization	3	4	3
Casualties	0	1	0
2,500-year MRP			
Injuries	2004	312	227
Hospitalization	37	61	45
Casualties	7	12	9

Source: HAZUS-MH v4.2



3.6.8.2 IMPACT ON GENERAL BUILDING STOCK

The entire County's general building stock is considered at risk and exposed to this hazard. As stated earlier, soft soils (NEHRP soil classes D and E) can amplify ground shaking to damaging levels even during a moderate earthquake (State of New Jersey 2019). Therefore, buildings located on NEHRP classes D and E soils and high liquefaction susceptible soils are at increased risk of damage from an earthquake. Table 23 summarizes the number and replacement cost value of buildings in Morris County located on NEHRP soils classes D and E and liquefaction class 4 soils.

Table 23. Number and Replacement Cost Value of Buildings Located on Seismic and Liquefaction Susceptible Soils

Municipality	Total Number of Buildings	Total RCV (Structure and Contents)	Buildings NEHRP Class "D" and "E" Soils			Buildings Liquefaction Class 4		
			Number	RCV	% of Total RCV	Number	RCV	% of Total RCV
Town of Boonton	3,262	\$1,832,625,537	33	1.0%	\$33,927,506	1.9%	0	0.0%
Township of Boonton	1,898	\$1,388,780,135	111	5.8%	\$166,548,877	12.0%	10	0.5%
Borough of Butler	2,701	\$1,489,686,071	0	0.0%	\$0	0.0%	0	0.0%
Chatham Borough	3,286	\$1,673,960,469	2,820	85.8%	\$1,458,301,271	87.1%	29	0.9%
Chatham Township	4,080	\$2,300,237,613	2,448	60.0%	\$1,368,843,490	59.5%	258	6.3%
Chester Borough	853	\$694,668,411	0	0.0%	\$0	0.0%	0	0.0%
Chester Township	3,680	\$2,782,631,274	70	1.9%	\$28,867,739	1.0%	4	0.1%
Denville Township	7,198	\$4,397,845,504	1,382	19.2%	\$894,700,008	20.3%	507	7.0%
Town of Dover	4,514	\$2,640,787,978	1,384	30.7%	\$951,675,214	36.0%	0	0.0%
Township of East Hanover	4,848	\$4,740,072,304	4,779	98.6%	\$4,703,188,849	99.2%	347	7.2%
Borough of Florham Park	3,805	\$3,768,421,982	3,805	100.0%	\$3,768,421,982	100.0%	26	0.7%
Township of Hanover	7,090	\$5,609,469,027	5,662	79.9%	\$5,073,465,211	90.4%	108	1.5%
Township of Harding	2,230	\$1,808,255,972	207	9.3%	\$130,159,850	7.2%	192	8.6%
Township of Jefferson	9,625	\$4,421,074,958	1,101	11.4%	\$484,647,435	11.0%	6	0.1%
Borough of Kinnelon	4,093	\$2,858,766,250	76	1.9%	\$47,482,164	1.7%	0	0.0%
Borough of Lincoln Park	4,166	\$2,125,371,898	2,055	49.3%	\$1,341,526,568	63.1%	1623	39.0%
Township of Long Hill	3,643	\$2,253,461,094	480	13.2%	\$342,138,859	15.2%	97	2.7%
Borough of Madison	6,301	\$3,066,320,935	6,301	100.0%	\$3,066,320,935	100.0%	0	0.0%
Borough of Mendham	2,139	\$1,479,178,043	0	0.0%	\$0	0.0%	0	0.0%
Township of Mendham	2,667	\$2,099,041,883	0	0.0%	\$0	0.0%	0	0.0%
Township of Mine Hill	1,590	\$766,971,485	204	12.8%	\$60,911,396	7.9%	0	0.0%
Township of Montville	8,179	\$6,714,034,036	2,250	27.5%	\$2,434,175,958	36.3%	749	9.2%



Municipality	Total Number of Buildings	Total RCV (Structure and Contents)	Buildings NEHRP Class "D" and "E" Soils			Buildings Liquefaction Class 4		
			Number	RCV	% of Total RCV	Number	RCV	% of Total RCV
Township of Morris	9,713	\$6,091,077,654	4,299	44.3%	\$2,785,036,128	45.7%	317	3.3%
Borough of Morris Plains	2,378	\$1,738,775,034	298	12.5%	\$227,122,566	13.1%	0	0.0%
Town of Morristown	4,413	\$2,945,511,672	2,314	52.4%	\$1,714,784,391	58.2%	52	1.2%
Borough of Mount Arlington	2,333	\$1,065,424,961	63	2.7%	\$35,122,417	3.3%	0	0.0%
Township of Mount Olive	9,115	\$7,181,400,421	1,402	15.4%	\$854,794,139	11.9%	54	0.6%
Borough of Mountain Lakes	1,642	\$1,183,405,498	0	0.0%	\$0	0.0%	0	0.0%
Netcong Borough	1,100	\$695,081,980	2	0.2%	\$4,579,971	0.7%	0	0.0%
Township of Parsippany-Troy Hills	17,064	\$11,747,551,200	6,953	40.7%	\$5,608,078,333	47.7%	833	4.9%
Township of Pequannock	5,642	\$3,911,039,941	5,348	94.8%	\$3,590,341,293	91.8%	3008	53.3%
Township of Randolph	8,600	\$6,709,486,516	294	3.4%	\$375,887,519	5.6%	1	0.0%
Borough of Riverdale	1,183	\$1,165,082,666	563	47.6%	\$469,298,571	40.3%	39	3.3%
Borough of Rockaway	2,617	\$1,612,749,951	851	32.5%	\$636,285,299	39.5%	18	0.7%
Township of Rockaway	11,485	\$7,225,058,745	471	4.1%	\$802,365,022	11.1%	23	0.2%
Township of Roxbury	9,544	\$5,918,169,131	5,670	59.4%	\$3,685,412,618	62.3%	23	0.2%
Borough of Victory Gardens	339	\$163,035,099	41	12.1%	\$47,807,502	29.3%	0	0.0%
Township of Washington	8,062	\$5,265,032,309	491	6.1%	\$397,709,902	7.6%	50	0.6%
Borough of Wharton	2,051	\$1,539,335,501	250	12.2%	\$729,851,119	47.4%	0	0.0%
Morris County (Total)	189,129	\$127,068,881,137	64,478	34.1%	48,319,780,104	38.0%	8,374	4.4%

Sources: Morris County 2019; Microsoft, 2018; Open Street Map, 2019; NJOIT, 2018; NJGWS, 2016

RCV Replacement Cost Value

There is a strong correlation between PGA and damage a building might suffer. The HAZUS-MH probabilistic earthquake model was applied to analyze effects from the earthquake hazard on general building stock in Morris County.

A building's construction determines how well it can withstand the force of an earthquake. FEMA has written guides to help homebuilders design homes based on their vulnerability to an earthquake event. Extra caution must be taken for structures with masonry chimneys, old chimneys, and open-front configurations such as one or two-family homes where the fronts are attached garages that have inadequate bracing length. The State of New Jersey HMP indicates that unreinforced masonry buildings are most at risk during an earthquake because the walls are prone to collapse outward, whereas steel and wood buildings absorb more of the earthquake's energy. Additional attributes that affect a building's capability to withstand an earthquake's force include its age, number of stories, and quality of construction. During the second planning meeting, attendees noted that there are no separate



building regulations that specifically account for the earthquake hazard in construction outside of the state building code.

HAZUS-MH considers building construction and age of building as part of the analysis. Because a custom general building stock inventory was developed for Morris County, the building ages and types, where available, were incorporated into the HAZUS-MH model.

3.6.8.3 IMPACT ON CRITICAL FACILITIES

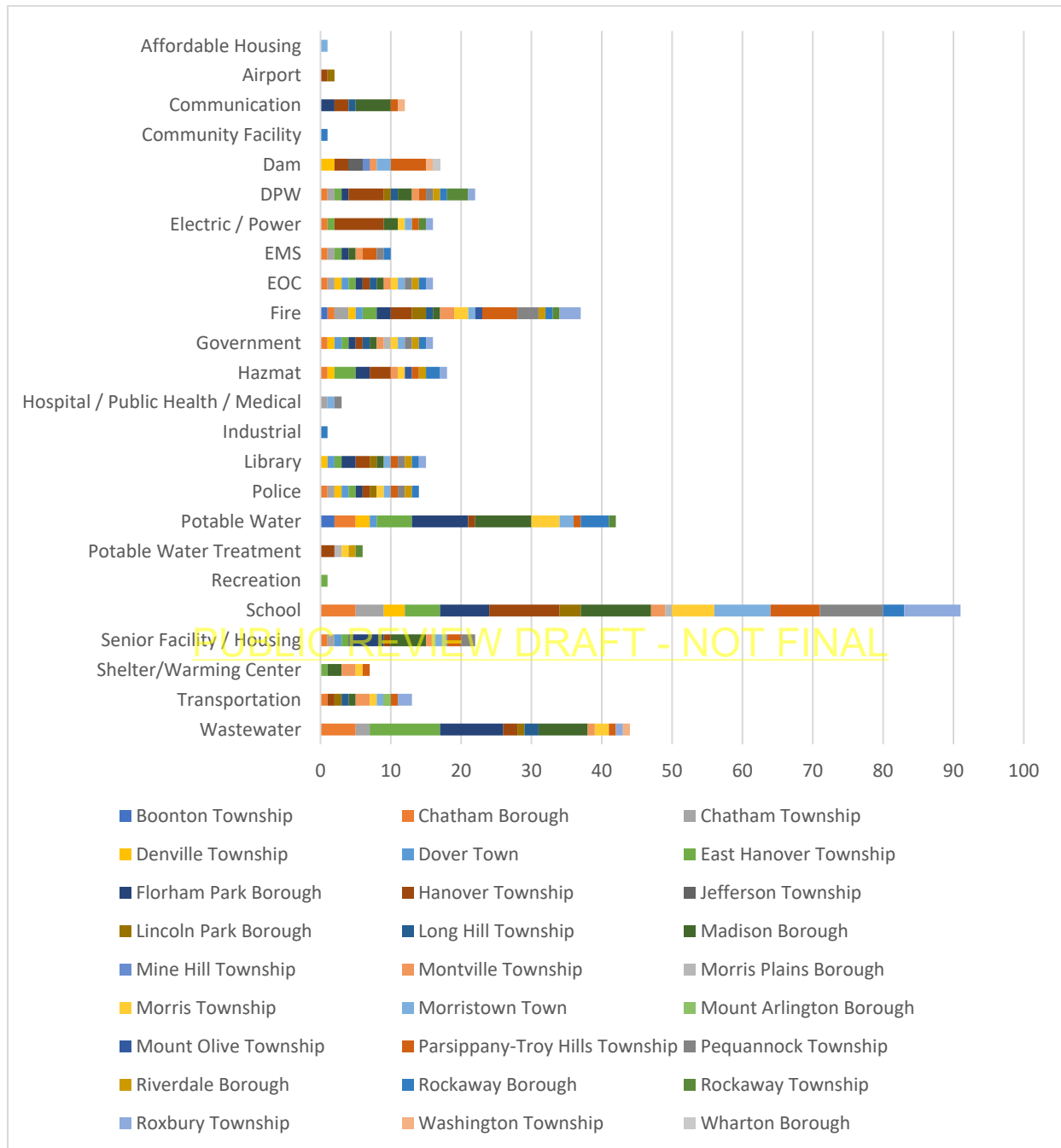
All critical facilities in Morris County are considered exposed to the earthquake hazard. Two sets of exposure analyses were conducted for critical facilities located in Morris County. The first analysis reviewed the number of County critical facilities and determined which facilities are constructed on NEHRP classes D or E soils and liquefaction class 4 soils. The analysis shows that 13 County critical facilities are located on NEHRP soils class D or E, and 5 are located on liquefaction class 4 soils.

Furthermore, 1,137 additional critical facilities are exposed countywide. The Borough of Madison has the greatest number of critical facilities located on NEHRP classes D or E soils (47 facilities), followed by the Township of Hanover with 45 facilities. Of the 47 facilities in the Borough of Madison, 27 were identified as community lifelines, and of the 45 facilities in the Township of Hanover 14 were identified as community lifeline. The Township of Pequannock has the greatest number of critical facilities located on liquefaction class 4 soils (11 facilities). Two of these facilities in the Town of Pequannock are considered community lifelines. Figure 24 shows the number of critical facilities by municipality that are exposed to NEHRP D and E soils and liquefaction class 4 soils, respectively.

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Figure 24. Critical Facilities Exposed to NEHRP Soil Type D/E in Morris County Municipalities



3.6.8.4 IMPACT ON THE ECONOMY

Earthquakes also impact the economy, including loss of business function, damage to inventory (buildings, transportation, and utility systems), relocation costs, wage loss, and rental loss due to repair and replacement of buildings. Roads and railroad tracks would also presumably suffer earthquake damages, resulting in disruptions in regional transportation and distribution of materials. Earthquake events can significantly affect road bridges, many of which provide the only access to certain neighborhoods. Because softer soils generally follow floodplain boundaries, bridges that cross watercourses should be considered vulnerable. Another key factor in degree of



vulnerability is age of facilities and infrastructure, which correlates with standards in place at times of construction of these.

Debris is another risk after an earthquake, potentially resulting in thousands of tons of material that will need to be disposed of.

3.6.9 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

3.6.9.1 PROJECTED DEVELOPMENT

New development located in areas with softer NEHRP soil classes and high liquefaction susceptibility may be more vulnerable to the earthquake hazard. Information regarding new development, both recent and expected development, within Morris County was received during the planning process. Any development location that could be located using an address or Parcel ID were geocoded and overlaid with the NEHRP Class D and E soils spatial layer to determine vulnerability. In total, there are 24 new development sites located on NEHRP Class D and E soils. 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.

3.6.9.2 PROJECTED CHANGES IN POPULATION

The County has and is projected to continue experiencing population growth. As noted above, vulnerability greatly depends upon the location residents reside. The HAZUS-MH earthquake model indicates the Borough of Lincoln Park and the Township of Pequannock are most vulnerable to greater ground shaking and building impacts as a result of more frequent events such as the 100-year MRP event. Populations moving to Morris County and living in older buildings may be vulnerable to this hazard. As noted earlier, if moving into new construction, current building codes require seismic provisions that should render new construction less vulnerable to seismic impacts.

3.6.9.3 CLIMATE CHANGE

Because the impacts of climate change on the earthquakes are not well understood, a change in the County's vulnerability is difficult to determine. However, climate change has the potential to magnify secondary impacts of earthquakes, including landslides and mudslides.

3.6.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

There is no significant change in vulnerability since the 2020 HMP.

3.7 EXTREME TEMPERATURES

3.7.1 2025 HMP CHANGES

- All subsections have been updated using best available data.
- Previous occurrences are updated with events that occurred between 2019 and 2023.
- The NJTPA Climate Resilience Planning Study has been integrated.

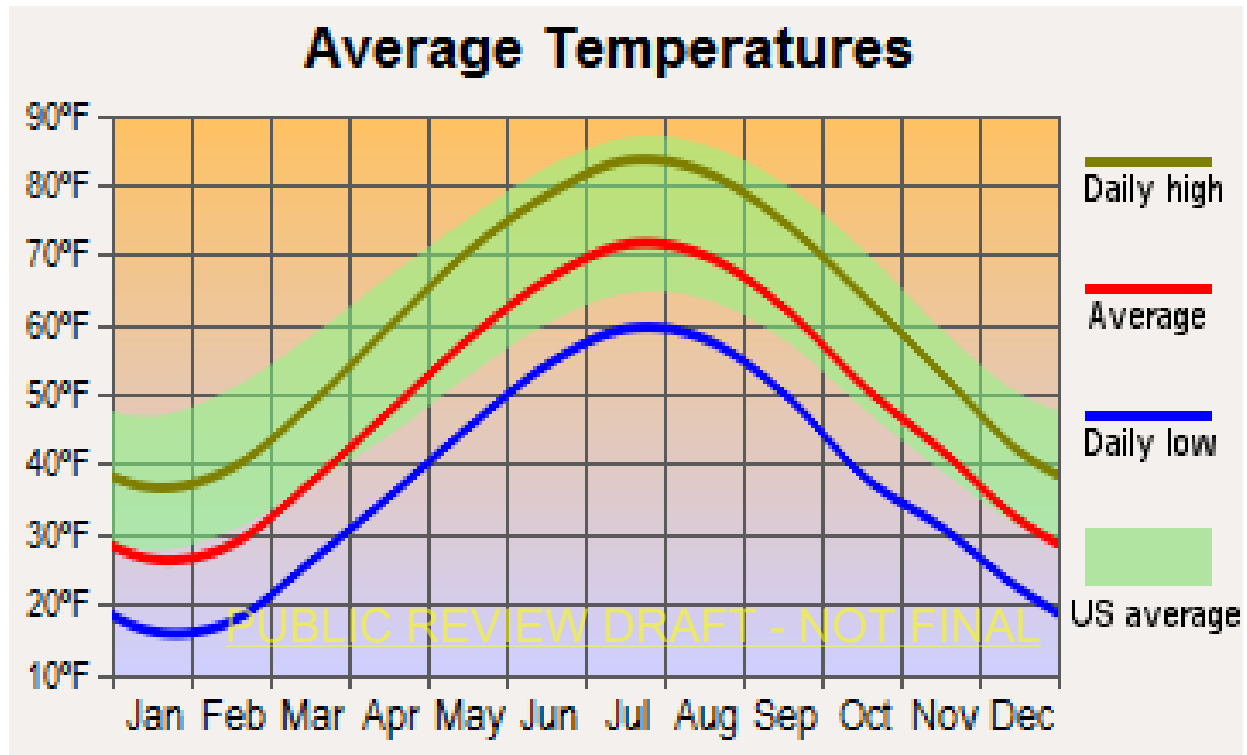
3.7.2 PROFILE

Extreme temperature includes both heat and cold events that can have significant direct impacts to human health and commercial/agricultural businesses and primary and secondary effects on infrastructure (e.g., burst pipes and



power failure). Distinguishing characteristics of “extreme cold” or “extreme heat” vary by location, based on the conditions to which the population is accustomed. Figure 25 shows the average low and high temperatures each month at the Boonton station in the center of Morris County.

Figure 25. Average Temperatures at Boonton




Source: *citi-data.com, based on data reported by over 4,000 weather stations*

Meteorologists can accurately forecast extreme temperature event development and the severity of the associated conditions with several days lead time. These forecasts provide an opportunity for public health and other officials to notify vulnerable populations. The National Weather Service (NWS) and National Oceanic and Atmospheric Association (NOAA) issues Outlooks, Watches, and Warnings to communicate local hazardous weather risks. It is important to understand the difference between each type of alert, and the appropriate actions to take. Of note, warnings issues for severe thunderstorms, tornadoes, and flash flooding typically have shorter lead times than other natural hazards.



Figure 26. NWS Definitions



What does it mean?

Warning	Watch	Advisory	Outlook
Weather hazard Is occurring, Imminent or likely	Risk of weather hazard in the near future	Weather hazard Is occurring, Imminent or likely	Risk of weather hazard in the next 7 days
Poses a threat to life/property	Could pose a threat to life/property	Could cause significant inconvenience	Could pose a threat to life/property
Take Protective Action	Have a Plan of Action	Use Caution	Prepare a Plan of Action

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Source: National Weather Service (NWS)

3.7.2.1 EXTREME COLD

Extreme cold events occur when temperatures drop well below normal in an area. In regions relatively unaccustomed to winter weather, near freezing temperatures are considered “extreme cold.” Extreme cold temperatures are generally characterized in temperate zones by the ambient air temperature dropping to approximately 0°F or below. Winter temperatures may fall to extreme cold readings with no wind occurring. At present, extremely cold temperatures are only highlighted by using the NWS-designated Wind Chill Advisory or Warning products. When actual temperatures reach Wind Chill Warning criteria with little to no wind, extreme cold warnings may be issued.

Extremely cold temperatures often accompany a winter storm, which can cause power failures and icy roads. Although staying indoors as much as possible can help reduce the risk of car crashes and falls on the ice, individuals may also face indoor hazards. Many homes will be too cold—either due to a power failure or because the heating system is not adequate for the weather. The use of space heaters and fireplaces to keep warm increases the risk of household fires and carbon monoxide poisoning.



3.7.2.2 EXTREME HEAT

Extreme heat is defined as summertime temperatures that are much hotter and/or humid than average. A heat wave is a period of abnormally hot weather generally lasting more than two days.

According to the NWS, extreme heat is the leading weather-related killer in the U.S. This is especially true in urban areas where population density, the urban heat island, and building construction exacerbate the effects of extreme heat, compared to rural and suburban areas. For heat events, the NWS issues excessive heat outlooks when the potential exists for an excessive heat event in the next 3-7 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.

As defined by the U.S. Census, urban areas are classified as all territory, population, and housing units located within urbanized areas and urban clusters. The term urbanized area denotes an urban area of 50,000 or more people. Urban areas under 50,000 people are called urban clusters.

As these urban areas develop and change, so does the landscape. Buildings, roads, and other infrastructure replace open land and vegetation. Surfaces that were once permeable and moist are now impermeable and dry. These changes cause urban areas to become warmer than the surrounding areas. This forms an 'island' of higher temperatures.

The term "heat islands" are urbanized areas that experience higher temperatures than outlying areas. The annual mean air temperature of a city with more than one million people can be between 1.8 °F and 5.4°F warmer than its surrounding areas. In the evening, the difference in air temperatures can be as high as 22°F. Heat islands occur on the surface and in the atmosphere. On a hot, sunny day, the sun can heat dry, exposed urban surfaces to temperatures 50°F to 90°F hotter than the air. 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.

3.7.3 LOCATION

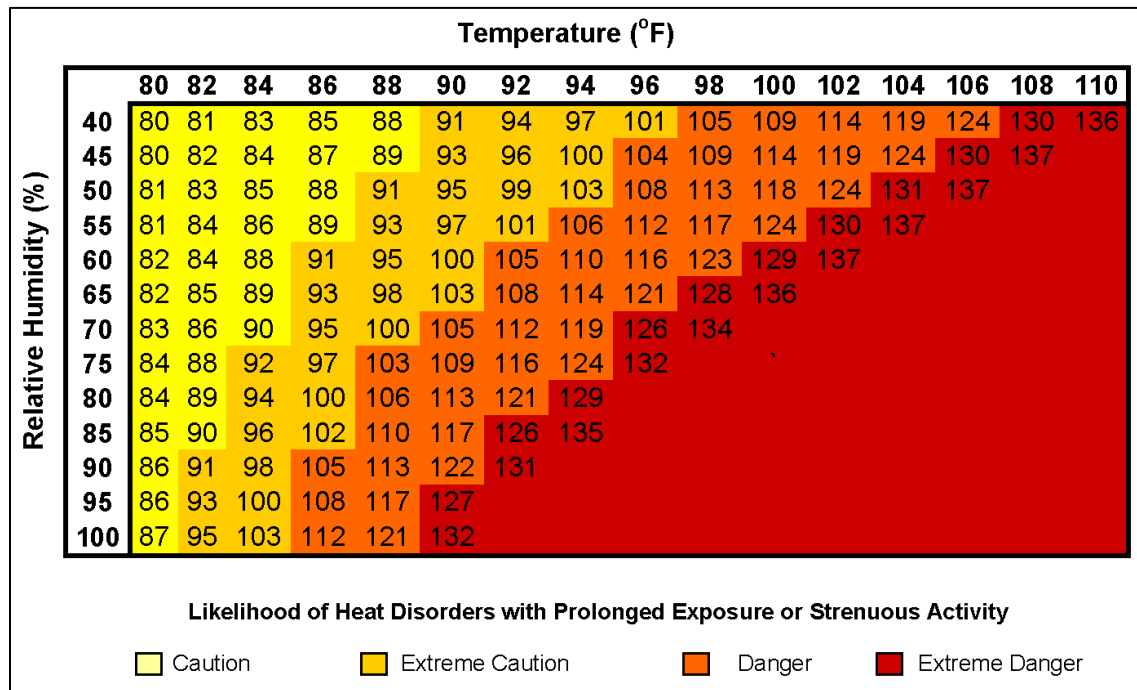
Extreme temperatures impact a large footprint at once, almost always encompassing the entirety of Morris County with minor variations in temperature in different areas.

3.7.4 EXTENT

NOAA's heat alert procedures are based mainly on Heat Index values. The Heat Index is given in degrees Fahrenheit. The Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature. To find the Heat Index temperature, the temperature and relative humidity need to be known. Once both values are known, the Heat Index will be the corresponding number with both values. The Heat Index indicates the temperature the body feels. It is important to know that the Heat Index values are devised for shady, light wind conditions. Exposure to full sunshine can increase heat index values by up to 15°F. Strong winds, particularly with very hot dry air, can also be extremely hazardous. The NWS will activate alert procedures when the Heat Index is expected to exceed 105°-110°F.



Figure 27. National Weather Service Heat Index Chart



Source: NWS

Figure 28. Adverse Effects of Prolonged Exposure to Heat on Individuals

Category	Heat Index	Health Hazards
Extreme Danger	130 °F – Higher	Heat Stroke / Sunstroke is likely with continued exposure.
Danger	105 °F – 129 °F	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Extreme Caution	90 °F – 105 °F	Sunstroke, muscle cramps, and/or heat exhaustions possible with prolonged exposure and/or physical activity.
Caution	80 °F – 90 °F	Fatigue possible with prolonged exposure and/or physical activity.

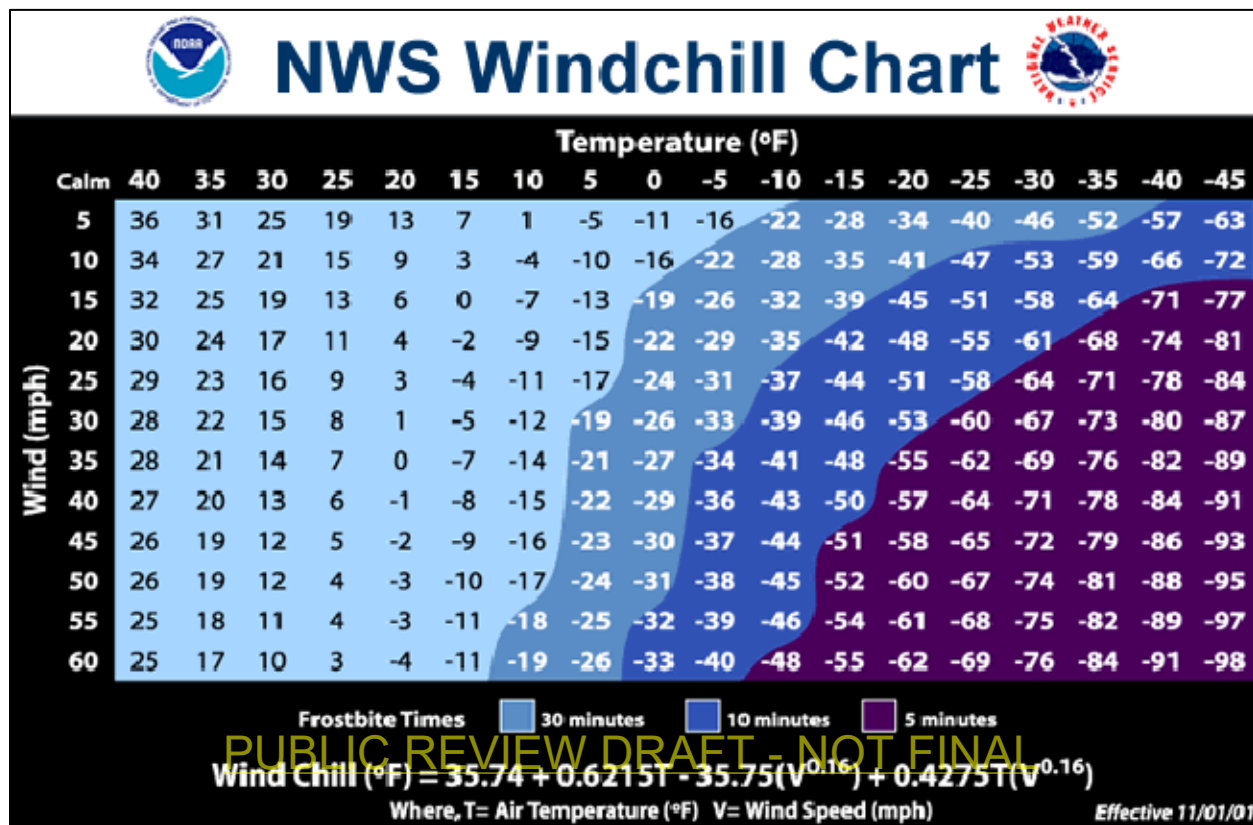
Source: NWS

The extent (severity or magnitude) of extreme cold temperatures is generally measured through the Wind Chill Temperature (WCT) Index. Wind Chill Temperature is the temperature that people and animals feel when outside, and it is based on the rate of heat loss from exposed skin by the effects of wind and cold. As the wind increases, the body is cooled at a faster rate, causing the skin's temperature to drop.

The WCT Index includes a frostbite indicator, showing points where temperature, wind speed, and exposure time will produce frostbite to humans. Figure 29 shows three shaded areas of frostbite danger. Each shaded area shows how long a person can be exposed before frostbite develops.



Figure 29. NWS Wind Chill Index



Source: NWS

Morris County and its communities are vulnerable to the fullest extent of both the heat index and wind chills.

3.7.5 PREVIOUS OCCURRENCES

New Jersey has been experiencing an increase in extreme temperatures across the state. The number of very hot days has been above average since the early 2000's. According to NOAA, declines in the number of extreme cold days have occurred since the early 1990's.

Between 1954 and 2024, Morris County was not included in any major disaster (DR) or emergency (EM) declarations due to extreme temperatures. However, during the same time period, the Federal Emergency Management Agency (FEMA) included Morris County in six winter storm-related DR or EM declarations classified as one or a combination of the following disaster types that may have had associated extreme cold temperatures: severe winter storm, snowstorm, snow, ice storm, winter storm, and blizzard.

Table 24. Winter Weather Related Disaster (DR) and Emergency (EM) Declarations 1954 - 2023

Declaration	Event Date	Declaration Date	Event Description
DR-528	February 8, 1977	February 8, 1977	Severe Ice Storm
EM-3106	March 13-17, 1993	March 17, 1993	Snow: Severe Blizzard
DR-1088	January 7-12, 1996	January 13, 1996	Snow: Blizzard of 96 (Severe Snowstorm)
EM-3181	February 16-17, 2003	March 20, 2003	Snow: Snow



Declaration	Event Date	Declaration Date	Event Description
EM-1954	December 26-27-2010	February 4, 2011	Snow: Severe Winter Storm and Snowstorm
DR-4597	January 31-February 2, 2021	April 28, 2021	Severe Winter Storm and Snowstorm

Source: FEMA 2024

The NOAA National Centers for Environmental Information (NCEI) Storm Events Database records and defines extreme temperature events as follows:

- Cold/Wind Chill is reported in the NOAA-NCEI database when a period of low temperatures or wind chill temperatures reach or exceed locally or regionally defined advisory conditions (typical value is -18 °F or colder).
- Excessive Heat is reported in the NOAA-NCEI database whenever heat index values meet or exceed locally or regionally established excessive heat warning thresholds.
- Extreme Cold / Wind Chill is reported in the NOAA-NCEI database when a period of extremely low temperatures or wind chill temperatures reaches or exceeds locally or regionally defined warning criteria (typical value around -35 °F or colder).
- Heat is reported in the NOAA-NCEI database whenever heat index values meet or exceed locally or regionally established advisory thresholds.

Extreme temperature events that have impacted Morris County between 2014 and 2023 are identified in Table 25.

Table 25. Extreme Temperature Incidents in Morris County, 2014 - 2024

Date(s) of Event	Event Type	Description
January 7, 2015	Cold/wind Chill	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. In addition, gusty northwest winds continued into the morning and lowest hourly wind chill factors reached around degrees below zero throughout the state. Temperatures dipped to 4 degrees above zero in Morristown.
February 13, 2015	Cold/wind Chill	Northwest winds that persisted into the morning of February 13 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 throughout most of New Jersey.
February 15-16, 2015	Cold/wind Chill	The combination of strong to high winds and an approaching arctic air mass produced windchill factors of 10 to 15 degrees below zero during the first half of the day on the 15 th in New Jersey. One person in Ocean County died from hypothermia. Actual morning low temperatures were around 10 degrees above zero. In Lakewood (Ocean County), a 66-year-old woman died from hypothermia while walking home early on the 15 th . Many municipalities declared code blues. Plumbers were swamped with frozen pipe calls. Some say it was the busiest they have been in over 20 years. Shelters were full. Even oil lines were freezing. Some homes ran out of heating oil. Temperatures dipped to one degree above zero in Morristown.
February 20, 2015	Cold/wind Chill	The arrival of another arctic air mass brought some of the lowest wind chills as well as the lowest temperatures of the winter season to New Jersey on the 20 th and 21 st . As far as wind chill factors went, the first half of the day on the 20 th was colder with wind chill factors as low as around 20 degrees below zero during the morning. Actual low temperatures were around zero. On the morning of the 21 st , little, if any, wind was present as the arctic high pressure system was nearby. Low temperatures in more rural inland areas were lower, many were below zero, some well below zero. But, because of the lack of wind, wind chill factors nearly matched the air temperatures and it felt relatively warmer on the morning of the 21 st . A low temperature of five degrees below zero was recorded in Denville.



Date(s) of Event	Event Type	Description
February 24, 2015	Cold/wind Chill	The high pressure system responsible for third and last arctic blast of the month of February arrived in New Jersey on the morning of the 24 th . Unlike the two previous arctic outbreaks earlier this month, this one was not accompanied by strong winds during the first half of the day. 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 and comparably cold to the 20 th and 21 st weather in the rest of the state. Morning low temperatures averaged 25 to 35 degrees colder than normal.
July 19, 2015	Heat	Unseasonably hot and humid weather affected most of New Jersey on the 19 th and 20 th . High temperatures in most areas reached into the lower to mid-90s both days. The 19 th was slightly hotter and more humid overall. The combination of heat and humidity brought afternoon heat index values as high as 100F to 105F on the 19 th . These were some of the highest heat index values of the entire summer. A high temperature of 95 degrees was recorded in Madison.
February 14, 2016	Cold/wind Chill	Bitter cold temperatures and strong northwest winds associated with an Arctic outbreak combined to create dangerous wind chill temperatures across the entire northeast quadrant of the county beginning Saturday morning, February 13 th into Sunday afternoon, February 14 th . Many local governments set up Code Blue shelters for the vulnerable population. The lowest wind chill values were reported at the following locations during the early morning hours of February 14 th : 26 degrees below zero in Stanhope, 22 degrees below zero in Basking Ridge, and 20 degrees below zero in Riverdale.
July 1, 2018	Excessive Heat	Temperatures in the middle to upper 90s and dew points in the upper 60s to lower 70s led to excessive heat across northern and western New Jersey. Heat indices reached 107 degrees at the Morristown Airport AWOS on July 3.
June 29, 2021	Excessive Heat	A multi-day excessive heat event occurred across much of the mid-Atlantic near the end of June 2021. High temperatures in the mid to locally upper 90s combined with dew points in the upper 60s to near 70 caused heat index values to reach 105 to 110 over much of the region. Heat index values reached 105F on both June 29 and 30, especially across the eastern half of the county, and locally reached 110F.
August 8, 2021	Excessive Heat	A multi-day excessive heat event occurred across much of the mid-Atlantic from August 11-13, 2021. Temperatures in the mid to upper 90s combined with dew point values near 70 caused widespread heat index values near to above 105F on both August 11 and 12, and locally into the 13th before a cold front brought relief. Heat index values reached 105F on August 11 and 12.
June 23, 2024	Excessive Heat	A strong ridge of high pressure both at the surface and aloft combined with a flow of moist air northward from the Gulf of Mexico resulted in excessive heat across parts of central and southern New Jersey. The heat index reached 105F at Morristown Municipal Airport.
July 5-16, 2024	Excessive Heat	A Bermuda high pressure resulted in high heat across parts of the state. The heat index reached 106F at Morristown Municipal Airport during this time.

Source: NOAA-NCDC 2024; NWS 2023

°F degrees Fahrenheit

N/A Not applicable

Note: With documentation for New Jersey and Morris County being so extensive, not all sources have been identified or researched; therefore, Table 4.3.5-2 may not include all events that have occurred or impacted the County.

3.7.6 PROBABILITY

It is anticipated that Morris County will continue to experience extreme temperatures annually that may coincide with or induce secondary hazards such as snow, hail, ice or windstorms, thunderstorms, drought, human health



impacts, and utility failures. Table 26 shows the annual number of events, recurrence interval, annual probability, and the annual percentage chance of occurrence for the hazards associated with extreme temperatures are reported in the NOAA-NCEI Storm Events Database.

Table 26. Probability of Occurrence of Extreme Temperatures

Hazard Type	Number of Occurrences Between 1954 and 2024	Rate of Occurrence or Annual Number of Events (average)	Recurrence Interval (in years)	Probability of event Occurring in Any Given Year	% Chance of Occurring in Any Given Year
Cold/Wind Chill	30	0.42	2.4	0.41	41.4
Excessive Heat	13	0.16	6.4	0.16	15.7
Extreme Cold/Wind Chill	2	0.03	35.0	0.03	2.9
Heat	54	0.78	1.3	0.77	77.1
Total	99	1.39	0.73	1.37	100

Source: NOAA-NCEI 2024

3.7.7 CLIMATE CHANGE IMPACTS

Over the past century, average annual temperatures have increased by 5°F in Morris County and 4°F in New Jersey overall; most of this warming has occurred since 1970. The State of New Jersey has observed an increased average temperature rate of 0.66°F/decade, the equivalent rate of 6.6°F century. Out of the 20 warmest years on record, 15 have occurred since 2000, with 2021 representing the third warmest. Statewide, temperatures for the winter of 2022/2023 averaged 38.5°. This is 4.5° above normal and ranks as the 2nd mildest of the past 128 winters. The average temperature of New Jersey in 2022 was 54.3° F.

3.7.8 VULNERABILITY ASSESSMENT

3.7.8.1 IMPACT TO LIFE, HEALTH AND SAFETY

The entire population of Morris County is exposed to extreme temperature events. These events can have potential health impacts, leading to injuries and fatalities. According to the Centers for Disease Control and Prevention (CDC), certain populations are particularly vulnerable to extreme cold and heat events, including:

- The elderly, due to their age, health conditions, and limited mobility to access shelters.
- Infants and children up to four years old.
- Individuals with chronic medical conditions like heart disease and high blood pressure.
- Low-income individuals who may lack access to proper heating and cooling.
- The general public, who may overexert during extreme heat events or experience hypothermia during extreme cold events.

Approximately 30.6% of the total population in Morris County falls under these vulnerable groups, including persons under 5, persons over 65, and persons in poverty, according to the 2021 ACS 5-Year Population Estimate. For example, 90,810 individuals in Morris County are over 65 years of age, with the highest concentration found in the Township of Harding and the Township of Pequannock (25.1% and 29.3% of total municipal population, respectively).



People with low incomes may face housing challenges, such as poor insulation and heating supply, making them more susceptible to cold temperatures. The Borough of Victory Gardens in Morris County has the highest concentration of population below the poverty level (18.8% of total municipal population).

According to the U.S. Fire Administration, the risk of structural fires increases during winter months, and although winter home fires only account for 8% of fires in the U.S., they contribute to approximately 30% of all fire deaths. Cooking and heat sources placed too close to combustible materials are leading factors in these incidents (U.S. Fire Administration 2018). Power outages are also common during extreme cold events, and individuals using generators without proper ventilation procedures are at risk of carbon monoxide poisoning. Improperly connected portable generators can also pose dangers to utility workers trying to restore power and may damage house wiring and/or generators.

3.7.8.2 IMPACT ON GENERAL BUILDING STOCK

All buildings are exposed to 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 (mobile homes) and antiquated or poorly constructed facilities can have inadequate capabilities to withstand extreme temperatures.

3.7.8.3 IMPACT ON CRITICAL FACILITIES

All critical facilities in the County are exposed to extreme temperature hazards. 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 brown-outs, due to increased usage from air conditioners and other energy-intensive appliances. Similarly, heavy snowfall and ice storms, associated with extreme cold temperature events, can cause power interruption. Backup power is recommended for critical facilities and infrastructure.

In 2019, the North Jersey Transportation Planning Authority (NJTPA) released a report for the Passaic River Basin that discusses climate change including extreme heat and impacts to transportation infrastructure. Impacts associated with extreme heat events on bridges, culverts, facilities, rail, roads and mass transit include stress, sagging, thermal expansion and system failure.

3.7.8.4 IMPACT ON THE ECONOMY

Extreme temperature events also have impacts on the economy, including loss of business function and damage to and loss of inventory. Business-owners can be faced with increased financial burdens due to unexpected damage to the building (e.g., pipes bursting), higher than normal utility bills, or business interruption due to power failure (i.e., loss of electricity, telecommunications). Disruptions in public transportation service will also impact the economy for both commuters and customers alike.

Extreme temperature events can impact agriculture yields. Based on information from the 2022 Census of Agriculture, 471 farms were present in Morris County, encompassing 14,552 acres of total farmland.



3.7.9 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

3.7.9.1 PROJECTED DEVELOPMENT

The ability of new development to withstand extreme temperature impacts lies in sound land use practices, building design considerations (e.g. Leadership in Energy and Environmental Design [LEED]), and consistent enforcement of codes and regulations for new construction. New development will change the landscape where buildings, roads, and other infrastructure potentially replace open land and vegetation. Surfaces that were once permeable and moist are now impermeable and dry. These changes cause urban areas to become warmer than the surrounding areas forming heat islands.

3.7.9.2 PROJECTED CHANGES IN POPULATION

Municipalities that experience increases in population may require utility system upgrades to keep up with utility demands (e.g., water, electric) during extreme temperature events to prevent increased stresses on these systems. NJTPA includes high population growth forecasts as one criterion to prioritize transportation adaptation strategies.

3.7.9.3 CLIMATE CHANGE

Most studies project that the State of New Jersey will see an increase in average annual temperatures. As the climate warms, extreme cold events might decrease in frequency, while extreme heat events might increase in frequency; the shift in temperatures could also result in hotter extreme heat events. With increased temperatures, vulnerable populations could face increased vulnerability to extreme heat and its associated illnesses, such as heatstroke and cardiovascular and kidney disease. Additionally, as temperatures rise, more buildings, facilities, and infrastructure systems may exceed their ability to cope with the heat.

3.7.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

Overall, the entire county remains vulnerable to extreme temperatures. As existing development and infrastructure continue to age, they can be at increased risk to failed utility and transportation systems if they are not properly maintained and do not adapt to the changing environment.

3.8 FLOOD

3.8.1 2025 HMP CHANGES

- All subsections have been updated using best available data.
- Previous events between 2020 and 2024 are added.
- The discussion of urban flooding has been expanded.
- The FEMA 2017 preliminary DFIRM was used to conduct the risk assessment.
- Dam failure has been integrated into the flood hazard chapter and is no longer a standalone hazard.

3.8.2 PROFILE

A flood is the inundation of normally dry land resulting from the rising and overflowing of a body of water. It can develop slowly over a period of days or quickly, with disastrous effects both local or regional. Floods are frequent and costly natural hazards in New Jersey in terms of human hardship and economic loss, particularly to communities that lie within flood-prone areas or floodplains of a major water source.

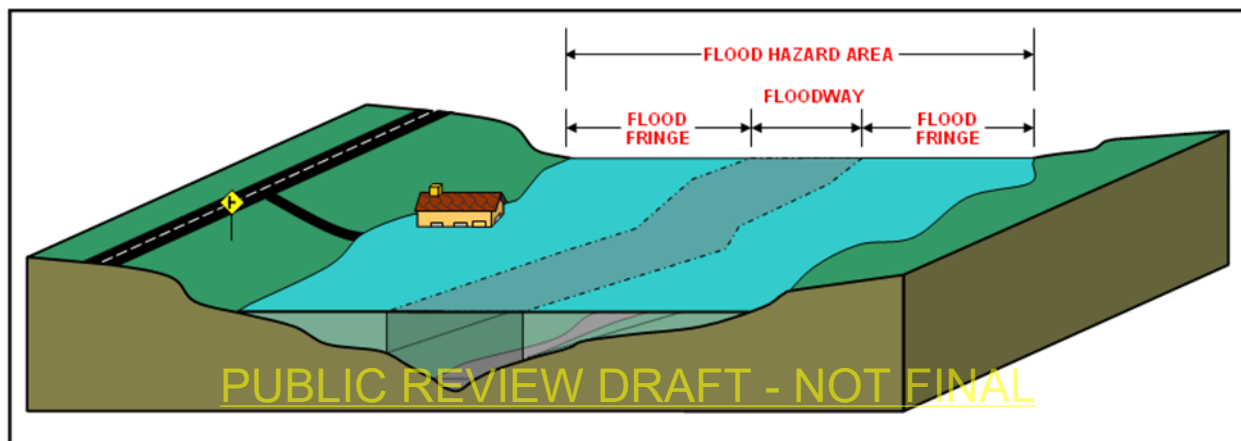


The flood-related hazards most likely to impact Morris County are riverine (inland) flooding, urban flooding, and flooding as a result of a dam failure.

3.8.2.1 RIVERINE FLOODING

FEMA defines a floodplain as any land susceptible to being inundated by floodwaters from any source, particularly waterways. In Morris County, floodplains line the rivers and streams of the county. The boundaries of the floodplains are altered as a result of changes in land use, the amount of impervious surface, placement of obstructing structures in floodways, changes in precipitation and runoff patterns, improvements in technology for measuring topographic features, and utilization of different hydrologic modeling techniques.

Figure 30. Illustrated Floodplain



Source: NJDEP

3.8.2.2 URBAN FLOODING

Heavy rainfall that overwhelms a developed area's stormwater infrastructure causing flooding is commonly referred to as urban flooding or flash flooding. Urban flooding can be worsened by aging and inadequate infrastructure and over-development of land. The growing number of extreme rainfall events that produce intense precipitation are resulting in increased urban flooding. While riverine and coastal flooding is mapped and studied by FEMA, urban flooding is not.

High groundwater levels can be a concern and cause problems even where there is no surface flooding. Basements are susceptible to high groundwater levels. Seasonally high groundwater is common in many areas, while elsewhere high groundwater occurs only after a long period of above-average precipitation.

3.8.2.3 DAM FAILURE

A dam or a levee is an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water. They can be built for many purposes, including power production, agriculture, water supply, recreation, and flood protection. Dam failure is any malfunction or abnormality outside of the design that adversely affects a dam's primary function of impounding water. Levees typically are earthen embankments constructed from a variety of materials ranging from cohesive to cohesionless soils. Dams and levees can fail for any number of reasons, resulting in flooding downstream. Failures are usually associated with intense rainfall and prolonged flood conditions; however, dam breaks may occur during dry periods as a result of progressive erosion of an embankment. The greatest threat from a dam break is to areas



immediately downstream. Dam failures may or may not leave enough time for evacuation of people and property, depending on their abruptness. 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 mph. Dam failures due to the overtopping of a dam normally give sufficient lead time for evacuation.

A levee failure or breach causes flooding in landward areas adjacent to the structure. The failure of a levee or other flood protection structure could be devastating, depending on the level of flooding for which the structure is designed and the amount of landward development present. Large volumes of water may be moving at high velocities, potentially causing severe damage to buildings, infrastructure, trees, and other large objects. Levee failures are generally worse when they occur abruptly with little warning and result in deep, fast-moving water through highly developed areas.

3.8.3 LOCATION

Flooding potential is influenced by climatology, meteorology and topography. Extensive development can impact flooding potential as it leaves fewer natural surfaces to absorb rainwater, forcing water directly into streams, rivers, and existing drainage systems and swelling them more than when more natural surface buffered the runoff rate.

3.8.3.1 RIVERINE FLOODING

Passaic River. The Passaic River is one of the major flood areas throughout Morris County. Municipalities flooded by the Passaic River include Chatham Borough, Chatham Township, East Hanover Township, Florham Park Borough, Hanover Township, Harding Township, Lincoln Park Borough, Long Hill Township and, Montville Township. The source of the Passaic River begins near the Borough of Mendham (Morris County) and winds through seven counties, 45 municipalities, and into the Newark Bay. At its source, the river is approximately 600 ft above sea level and flows along for approximately 90 miles. The river's southeasterly flow goes south of Jockey Hollow at Morristown National Historical Park and becomes the boundary between Somerset and Morris counties.

Pompton River. The Pompton River is a tributary of the Passaic River; it is formed by the confluence of the Ramapo, Wanaque and Pequannock rivers. Located in the northeastern section of Morris County, the Pompton River flows south, passing between and significantly flooding Lincoln Park Borough and Pequannock Township, the two most flood-prone municipalities in Morris County.

Rockaway River. The Rockaway River originates in Jefferson Township and flows to the southwest and then to the east, emptying into the Boonton Reservoir. The river flows through the townships of Jefferson, Rockaway, Denville, Boonton, Randolph, Parsippany Troy Hills; the boroughs of Wharton and Rockaway; and the towns of Boonton and Dover. Municipalities that have flooded due to the Rockaway River include the Town of Boonton and the townships of Denville, Jefferson, Parsippany-Troy Hills, and Rockaway. In August 2011, the Rockaway River set a new flood record, carving out a section of Interstate 287 and causing two major slope failures in the Town of Boonton. Stream gage analysis in 20-year increments of USGS no. 01380500 in Boonton from 1938-2011 show an increase in average annual peak flow of 84%.

Whippany River. The Whippany River is a major tributary of the Rockaway River. It rises in Mendham Township and flows east-northeast until it joins the Rockaway River in Hatfield Swamp, just above the confluence of the Passaic River. The following municipalities are flooded by the Whippany River: East Hanover Township, Morris Township, Morristown, and Parsippany-Troy Hills Township.

Flooding of various origins may be experienced in any season of the year, particularly as New Jersey is located within the major storm tracks of North America. Flooding during winter months is less frequent, but spring



flooding compounded by ice and snow melt has occurred. The most extensive floods have occurred mostly in late summer and early fall and are usually associated with tropical disturbances moving north along the Atlantic coast.

FEMA released updated preliminary Digital Flood Insurance Rate Maps (DFIRMs) in 2017 for all Morris County municipalities; these remain current for the 2025 update, though they are in the process of being updated. The preliminary DFIRM shows the following flood hazard areas:

- 1% Annual Chance Flood Hazard: Areas subject to inundation by the 1% annual chance flood event. This is also referred to as the Special Flood Hazard Area (SFHA). Mandatory flood insurance requirements and floodplain management standards apply.
- 0.2% Annual Chance Flood Hazard: Area of minimal flood hazard, usually depicted on FIRMs as the shaded X Zone.

Locations of flood zones in Morris County as depicted on the DFIRMs are illustrated in Figure 31.

PUBLIC REVIEW DRAFT - NOT FINAL

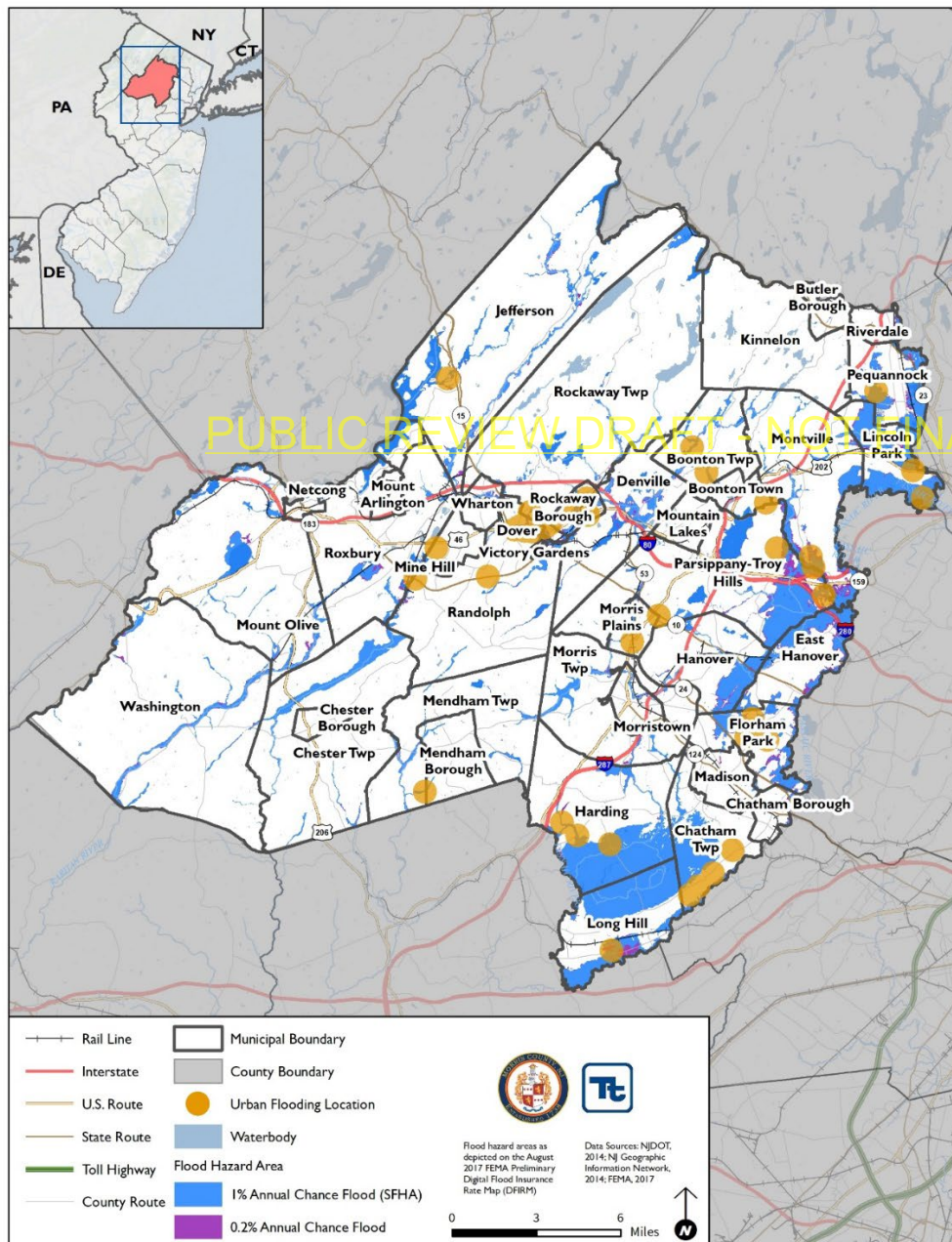


A majority of the 1% annual chance flood hazard zones are located in eastern Morris County, along the Pompton and Passaic rivers. In southwestern Morris County, the Black River has areas of the 1% annual chance flood hazard zones.

3.8.3.2 URBAN FLOODING

Municipalities have identified areas that flood outside the FEMA-mapped floodplain in an attempt to identify problem areas and assist with identifying mitigation solutions. Figure 32 illustrates those urban flood areas.

Figure 32. Urban Flood Areas

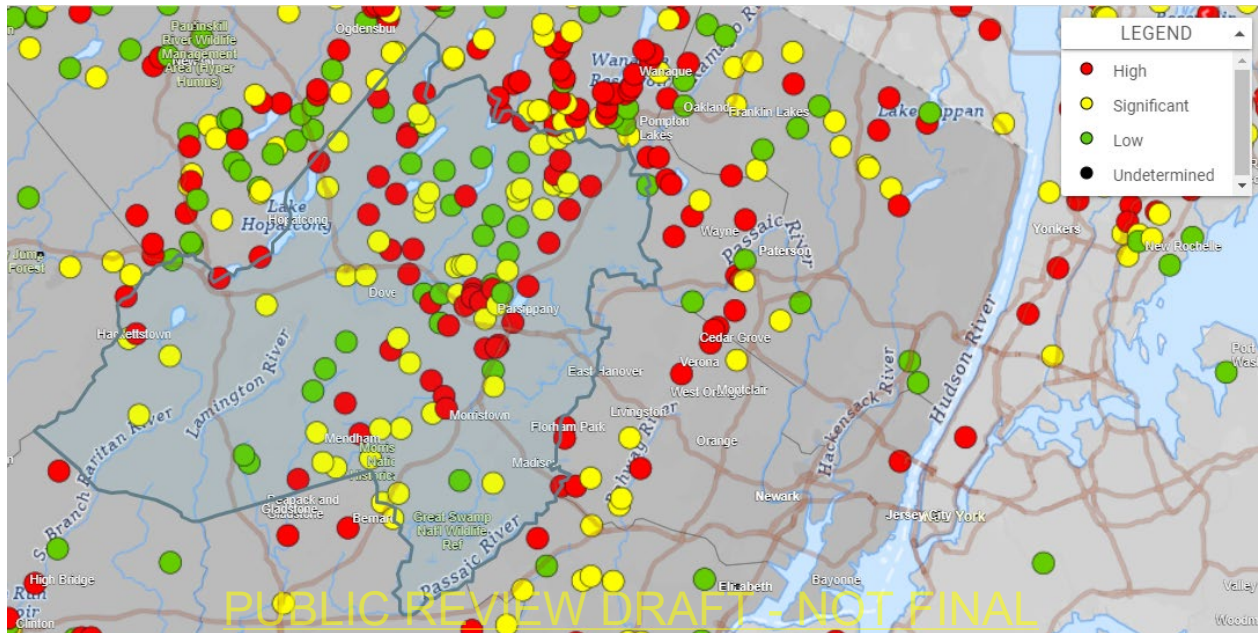




3.8.3.3 DAM FAILURE

There are 120 dams located in Morris County, including 42 high hazard dams, 45 significant hazard dams, and 23 low hazard dams. Figure 33 shows these dams.

Figure 33. Dams in Morris County



Source: National Inventory of Dams

3.8.4 EXTENT

The frequency and severity of riverine flooding are measured using a discharge probability, which is the probability that a certain 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. FEMA maps floodplains using advanced modeling and data analysis to delineate the extent of potential flooding impact and assess the associated risk to specific areas. These comprehensive floodplain maps serve as crucial tools for communities and emergency management, aiding in informed decision-making and risk mitigation strategies.

The NJDEP is mandated to regulate flood hazard areas pursuant to N.J.S.A. 58:16A-50 et seq., the Flood Hazard Area Control Act. This Act authorizes the DEP to adopt land use regulations for development within the flood hazard areas, to control stream encroachments, and to integrate the flood control activities of the municipal, county, state, and federal governments. The State's Flood Hazard Area delineations are defined by the New Jersey Flood Hazard Area Design Flood, which is equal to a design flood discharge 25% greater in flow than the 1% annual chance flood. In addition, the floodway shall be based on encroachments that produce no more than a 0.2-foot water surface rise above the 1% annual chance flood.

The USGS National Water Information System (NWIS) collects surface water data from more than 850,000 stations across the country. The time-series data describes stream levels, streamflow (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. Morris County has numerous active USGS stream gages; in addition, stream gages are located upstream in neighboring counties.



In the case of riverine flood hazard, once a river reaches flood stage, the flood extent or severity categories used by the NWS include minor flooding, moderate flooding, and major flooding. Each category has a definition based on property damage and public threat:

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

The severity of a flood depends not only on the amount of water that accumulates in a period of time but also on the land's ability to manage this water. The size of rivers and streams in an area and infiltration rates are significant factors. When it rains, soil acts as a sponge. When the land is saturated or frozen, infiltration rates decrease and any more water that accumulates must flow as runoff.

Currently, there is no measurement used to further define the frequency and severity of urban flooding.

3.8.5 PREVIOUS OCCURRENCES

Many sources provided historical information regarding previous occurrences and losses associated with flooding throughout the State of New Jersey and Morris County; therefore, the loss and impact information for many events varies depending on the source.

Between 1954 and 2023, FEMA declared that the State of New Jersey experienced 47 flood-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: hurricane, tropical storm, Nor'Easter, snowstorm, severe storms, flooding, inland and coastal flooding, coastal storm, high tides, heavy rain, and severe storms. Generally, these disasters cover a wide region of the state; therefore, they may have impacted many counties. Morris County was included in 27 of these flood-related declarations, as shown in Table 27.

Table 27. Flood-Related Disaster (DR) and Emergency (EM) Declarations, 1954 - 2024

Declaration	Event Date	Declaration Date	Event Description
DR-245	June 18, 1968	June 18, 1968	Flood: Heavy Rains & Flooding
DR-310	September 4, 1971	September 4, 1971	Flood: Heavy Rains & Flooding
DR-477	July 23, 1975	July 23, 1975	Flood: Heavy Rains, High Winds, Hail & Tornadoes
DR-701	March 28-April 8, 1984	April 12, 1984	Flood: Coastal Storms & Flooding
DR-973	December 10-17, 1992	December 18, 1992	Flood: Coastal Storm, High Tides, Heavy Rain, & Flooding
EM-3106	March 13-17, 1993	March 17, 1993	Snow: Severe Blizzard
DR-1088	January 7-12, 1996	January 13, 1996	Snow: Blizzard of 96 (Severe Snow Storm)
DR-1145	October 18-23, 1996	November 19, 1996	Severe Storms/Flooding
EM-3148	September 16-18, 1999	September 17, 1999	Hurricane: Hurricane Floyd Emergency Declarations
DR-1295	September 16-18, 1999	September 18, 1999	Hurricane: Hurricane Floyd Major Disaster Declarations
DR-1337	August 12-21, 2000	August 17, 2000	Severe Storms, Flooding and Mudslides
EM-3181	February 16-17, 2003	March 20, 2003	Snow: Snow
DR 1588	April 1-3, 2005	April 19, 2005	Severe Storm(s): Severe Storms and Flooding
DR-1694	April 14-20, 2007	April 26, 2007	Severe Storm(s): Severe Storms and Inland and Coastal Flooding
DR-1897	March 12-April 15, 2010	April 2, 2010	Severe Storm(s): Severe Storms and Flooding



Declaration	Event Date	Declaration Date	Event Description
EM-3332	August 26-September 5, 2011	August 27, 2011	Hurricane: Hurricane Irene
DR-4021	August 27-September 5, 2011	August 31, 2011	Hurricane: Hurricane Irene
DR-4048	October 29, 2011	November 30, 2011	Severe Storm(s): Severe Storm
DR-1954	December 26-27, 2010	February 4, 2011	Severe Winter Storm and Snowstorm
EM-3354	October 26-November 8, 2012	October 28, 2012	Hurricane: Hurricane Sandy
DR-4086	October 26-November 8, 2012	October 31, 2012	Hurricane: Hurricane Sandy
DR-4264	January 22-24, 2016	March 14, 2016	Severe Storm(s): Severe Winter Storm and Snowstorm
DR-4368	March 6-7, 2018	June 8, 2018	Severe Storm(s): Severe Winter Storm and Snowstorm
DR-4488	January 20, 2020- March 11, 2023	March 25, 2020	Covid-19 Pandemic
DR-4574	August 4, 2020	December 11, 2020	Tropical Storm: Tropical Storm Isaias
DR-4597	January 31, 2021- February 2, 2021	April 28, 2021	Severe Storms: Severe Winter Storm and Snowstorm
DR-4614	September 1, 2021 - September 3, 2021	September 5, 2021	Hurricane: Hurricane Ida

Source: FEMA

The Secretary of Agriculture from the U.S. Department of Agriculture (USDA) is authorized to designate counties as disaster areas to make emergency loans to producers suffering losses in those counties and in counties that are contiguous to a designated county. Between 2019 and 2023, Morris County was included in three USDA declarations involving flooding.

The NOAA National Centers for Environmental Information Storm Events database records and defines flood events as follows:

- Flash Flood (urban flood) is reported in the NOAA-NCEI database for a life-threatening, rapid rise of water into a normally dry area beginning within minutes to multiple hours of the causative event (e.g., intense rainfall, dam failure, ice jam).
- Flood is reported in the NOAA-NCEI database for any high flow, overflow, or inundation by water which causes damage. In general, this would mean the inundation of a normally dry area caused by an increased water level in an established watercourse, or ponding of water, that poses a threat to life or property.

Between 1950 and 2023, the NCEI database reported 78 separate flood events; two fatalities were associated with these incidents, and over \$256.5 million in property damage recorded. \$200 million of those damages were associated with Hurricane Irene in 2011.

Flash flooding results from the same timeframe record 53 separate incidents, resulting in six injuries and over \$53 million in property damages. \$30 million of those damages and all six injuries are associated with Hurricane Floyd in 1999.

New Jersey has not experienced a catastrophic dam failure, but the number of small dam failures has increased. These failures are attributed to a lack of maintenance and inspection and the fact that many dams in the state are aging and nearing the end of their design life. Records of dam failure can be spotty, but there is historical data for dam failures in Morris County. According to the NJDEP, the Sarubbi Dam failed in Morris County in November



1927. Further, when Hurricane Floyd passed through Morris County in 1999, four dams were damaged, and one of these four dams was a total loss. Shortly after Hurricane Floyd, a storm event in August 2000 caused 12 dams to fail in Morris County. Nine out the 12 dams that failed were located in the Township of Jefferson. In total, \$179 million of damages were caused by all the dams throughout four NJ counties that breached after the storm in 2000 that included loss from 2,700 homes and businesses and 2,600 people that were evacuated.

3.8.6 PROBABILITY

Morris County is expected to continue experiencing direct and indirect impacts of flooding in the future. Table 28 summarizes data regarding the probability of occurrences of flood events in Morris County based on the historic record. The information used to calculate the probability of occurrences is based solely on NOAA-NCEI storm events database results.

Table 28. Flood-Related Hazard Probability

Hazard Type	Number of Occurrences Between 1954 and 2024	Recurrence Interval	Probability of Incident Occurring in Any Given Year
Flash Flood	57	1.22 years	82%
Flood	80	0.97 years	100%

Source: NCEI

There is minimal history of occurrence of dam failure between 1950 and 2024. This suggests a low probability of future occurrence, though the construction of new dam and levee structures could increase dam and levee failure risk. Dam failure events are infrequent and usually coincide with events that cause them, such as earthquakes, landslides, and excessive rainfall and snowmelt. However, the risk of such an event increases for each dam as the dam's age increases or frequency of maintenance decreases. Additionally, future climate change may impact storm patterns, increasing the probability of more frequent, intense storms with varying duration. The probability of any type of dam failure is low given current dam safety regulatory and oversight environment.

3.8.7 CLIMATE CHANGE IMPACTS

According to the NJDEP, New Jersey is experiencing increased intensity, frequency and duration of storm events. Northern New Jersey's 1971-2000 precipitation average was over five inches (12-percent) greater than the average from 1895-1970. According to a report by the NJDEP Division of Science and Research, Projected Changes in Extreme Rainfall in New Jersey, projections for 2050-2099, under a moderate emissions scenario, suggest that the amount of precipitation associated with the 1% chance, 24-hour storm, will increase on average by 10% in much of southern New Jersey and by as much as 22% in northern counties. More frequent storms (such as the 2-year and 10-year) are expected to see increases in precipitation intensity, on average, of 5% to 15% across the state by the end of the century. Increased rainfall and heavy rainfalls increase the risk of flooding events.

Dams are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can significantly affect the hydrograph used for the design of a dam. If the hydrograph changes, the dam conceivably could lose some or all of its designed margin of safety, also known as freeboard. Loss of designed margin of safety increases the possibility that floodwaters would overtop the dam or create unintended loads, which could lead to a dam failure.

3.8.8 VULNERABILITY ASSESSMENT

To assess Morris County's risk to the flood hazard, a spatial analysis was conducted using the best available spatially-delineated flood hazard areas. The 1% and 0.2% annual chance flood events as depicted on the 2017



DFIRMs were examined to determine the assets located in the hazard areas and to estimate potential loss using the FEMA HAZUS-MH flood model. These results are summarized below.

3.8.8.1 IMPACT TO LIFE, HEALTH, AND SAFETY

The impact of flooding on life, health and safety is dependent upon several factors, including the severity of the event and whether adequate warning time is provided to residents. Hazard exposure represents the population living in or near floodplain areas who could be impacted should a flood event occur. However, exposure is not limited to only those who reside in a defined hazard zone but all individuals who may be affected by the effects of a hazard event (e.g., people are at risk while traveling in flooded areas, or their access to emergency services is compromised during an event). The degree of that impact will vary and is not strictly measurable.

Based on the spatial analysis, there are an estimated 12,578 people living in the Special Flood Hazard Area (SFHA, or 1% annual chance event floodplain) and an estimated 20,814 people living in the 0.2% annual chance flood event floodplain. These residents may be displaced due to their homes flooding, requiring them to seek temporary shelter with friends and family or in emergency shelters. The Borough of Lincoln Park has the greatest percentage of its population located in the floodplain; approximately 24.6% and 31.4% for the 1% annual chance event and 0.2% annual chance event, respectively. The Township of Pequannock has the greatest number of residents located in the floodplain. The potential population exposed should be used as a guide for planning purposes.

Table 29. Estimated Population Exposed to Flooding

Municipality	2022* Total Est. Population	1% Annual Chance Flood Event		0.2% Annual Chance Flood Event	
		Number	% of Total	Number	% of Total
Town of Boonton	8,815	0	0.0%	6	0.1%
Township of Boonton	4,380	44	1.0%	77	1.8%
Borough of Butler	8,119	58	0.7%	74	1.0%
Chatham Borough	9,226	14	0.2%	89	1.0%
Chatham Township	10,962	67	0.6%	67	0.6%
Chester Borough	1,681	0	0.0%	0	0.0%
Chester Township	7,719	3	0.0%	8	0.1%
Denville Township	17,127	1,013	6.0%	1,691	10.1%
Town of Dover	18,422	1,406	7.7%	2,160	11.8%
Township of East Hanover	11,120	495	4.4%	1,332	11.9%
Borough of Florham Park	13,325	92	0.8%	211	1.8%
Township of Hanover	14,646	71	0.5%	82	0.6%
Township of Harding	3,887	108	2.8%	112	2.9%
Township of Jefferson	20,517	158	0.7%	345	1.6%
Borough of Kinnelon	9,985	0	0.0%	0	0.0%
Borough of Lincoln Park	10,923	2,579	24.6%	3,287	31.4%
Township of Long Hill	8,621	477	5.4%	1,086	12.4%
Borough of Madison	16,261	2	0.0%	128	0.8%
Borough of Mendham	4,992	11	0.2%	14	0.3%
Township of Mendham	6,014	43	0.7%	58	1.0%
Township of Mine Hill	3,609	0	0.0%	0	0.0%
Township of Montville	22,440	457	2.1%	1,221	5.6%
Township of Morris	23,268	102	0.5%	133	0.6%
Borough of Morris Plains	6,145	14	0.3%	20	0.3%



Municipality	2022* Total Est. Population	1% Annual Chance Flood Event		0.2% Annual Chance Flood Event	
		Number	% of Total	Number	% of Total
Town of Morristown	20,339	6	0.0%	6	0.0%
Borough of Mount Arlington	5,908	6	0.1%	6	0.1%
Township of Mount Olive	28,977	372	1.3%	506	1.7%
Borough of Mountain Lakes	4,309	0	0.0%	0	0.0%
Netcong Borough	3,245	0	0.0%	0	0.0%
Township of Parsippany-Troy Hills	56,163	1,294	2.4%	3,324	6.2%
Township of Pequannock	15,569	2,831	18.3%	3,377	21.8%
Township of Randolph	26,497	61	0.2%	82	0.3%
Borough of Riverdale	4,238	362	8.5%	514	12.1%
Borough of Rockaway	6,592	94	1.5%	260	4.0%
Township of Rockaway	26,036	114	0.5%	198	0.8%
Township of Roxbury	23,140	54	0.2%	62	0.3%
Borough of Victory Gardens	1,655	0	0.0%	31	1.8%
Township of Washington	18,165	170	0.9%	243	1.3%
Borough of Wharton	7,245	0	0.0%	4	0.1%
Morris County (Total)	511,151	12,578	2.5%	20,814	4.2%

Research has shown that some populations, while they may not have more hazard exposure, may experience exacerbated impacts and prolonged recovery if/when impacted. This is due to many factors, including their physical and financial ability to react or respond during a hazard. Of the population exposed, the most vulnerable include the economically disadvantaged and the population over age 65. Economically disadvantaged populations are more vulnerable because they are likely to evaluate their risk and make decisions to evacuate based on net economic impacts on their families. The population over age 65 is also more vulnerable because they are more likely to seek or need medical attention that may not be available due to isolation during a flood event, and they may have more difficulty evacuating. Within the 1% annual chance event floodplain, there are approximately 2,101 people over the age of 65 and 688 people below the poverty level. These populations are all located within the SFHA. As for the 0.2% chance event, there are approximately 3,426 people over the age 65 and 1,090 people below the poverty level.

Cascading impacts may also include exposure to pathogens such as mold. 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. The degree of impact will vary and is not strictly measurable. Molds can grow in as short a period as 24-48 hours in wet and damaged areas of buildings that have not been properly cleaned. Very small mold spores can easily be inhaled, creating the potential for allergic reactions, asthma episodes, and other respiratory problems. Buildings should be properly cleaned and dried out to safely prevent mold growth (CDC 2019).

Molds and mildews are not the only public health risk associated with flooding. Floodwaters can be contaminated by pollutants such as sewage, human and animal feces, pesticides, fertilizers, oil, asbestos, and rusting building materials. Common public health risks associated with flood events also include:

- Unsafe food
- Contaminated drinking and washing water and poor sanitation
- Mosquitos and animals
- Carbon monoxide poisoning
- Secondary hazards associated with re-entering/cleaning flooded structures



- Mental stress and fatigue

Floodwaters from dam breaches can and will cause the same issues as a natural flood, however depending on the specifics of the breach a dam failure may also release water at a spectacular velocity.

3.8.8.2 IMPACT ON GENERAL BUILDING STOCK

Exposure to the flood hazard includes those buildings located in the flood hazard zone. Potential damage is the modeled loss that could occur to the exposed inventory measured by the structural and content replacement cost value. There are an estimated 5,461 buildings located in the SFHA with a replacement cost value of approximately \$4.78 billion of building and contents. This represents approximately 3.8% of the County's total general building stock inventory replacement cost value (approximately \$127 billion).

There are 8,727 buildings located in the 0.2% annual chance flood boundary with approximately \$7.87 billion of building/contents in replacement cost value (or 6.2% of the County's total replacement cost value). The Township of Pequannock has the greatest number of its buildings located in the floodplain; approximately 1,164 and 1,368 located in the 1% chance event and 0.2% chance event boundaries, respectively.

HAZUS-MH estimates \$634 million in building and content damage as a result of the 1% annual chance flood event (or 0.5% of the total building stock replacement cost value). Of the \$634 million in potential loss, \$200 million is estimated to residential structures.

Table 30. Estimated General Building Stock Exposure to the 1% Annual Chance Flood Event - All Occupancies

Municipality	Estimated Building Stock Exposed					
	Total # Buildings	Total Replacement Cost Value (RCV)	Number of Buildings - 1% Annual Chance Flood	% of Total	RCV - 1% Annual Chance Flood	% of Total
Town of Boonton	3,262	\$1,832,625,537	0	0.0%	\$0	0.0%
Township of Boonton	1,898	\$1,388,780,135	27	1.4%	\$15,544,185	1.1%
Borough of Butler	2,701	\$1,489,686,071	36	1.3%	\$19,170,863	1.3%
Chatham Borough	3,286	\$1,673,960,469	22	0.7%	\$40,149,387	2.4%
Chatham Township	4,080	\$2,300,237,613	28	0.7%	\$8,632,360	0.4%
Chester Borough	853	\$694,668,411	0	0.0%	\$0	0.0%
Chester Township	3,680	\$2,782,631,274	7	0.2%	\$5,334,258	0.2%
Denville Township	7,198	\$4,397,845,504	503	7.0%	\$282,448,772	6.4%
Town of Dover	4,514	\$2,640,787,978	482	10.7%	\$380,283,612	14.4%
Township of East Hanover	4,848	\$4,740,072,304	218	4.5%	\$193,643,609	4.1%
Borough of Florham Park	3,805	\$3,768,421,982	38	1.0%	\$90,660,645	2.4%
Township of Hanover	7,090	\$5,609,469,027	112	1.6%	\$349,873,206	6.2%
Township of Harding	2,230	\$1,808,255,972	90	4.0%	\$47,732,628	2.6%



Municipality	Total # Buildings	Total Replacement Cost Value (RCV)	Estimated Building Stock Exposed			
			Number of Buildings - 1% Annual Chance Flood	% of Total	RCV - 1% Annual Chance Flood	% of Total
Township of Jefferson	9,625	\$4,421,074,958	125	1.3%	\$39,069,916	0.9%
Borough of Kinnelon	4,093	\$2,858,766,250	0	0.0%	\$0	0.0%
Borough of Lincoln Park	4,166	\$2,125,371,898	882	21.2%	\$688,552,685	32.4%
Township of Long Hill	3,643	\$2,253,461,094	311	8.5%	\$245,650,873	10.9%
Borough of Madison	6,301	\$3,066,320,935	1	0.0%	\$40,842	0.0%
Borough of Mendham	2,139	\$1,479,178,043	7	0.3%	\$4,216,933	0.3%
Township of Mendham	2,667	\$2,099,041,883	26	1.0%	\$9,874,031	0.5%
Township of Mine Hill	1,590	\$766,971,485	1	0.1%	\$905,738	0.1%
Township of Montville	8,179	\$6,714,034,036	234	2.9%	\$372,298,816	5.5%
Township of Morris	9,713	\$6,091,077,654	52	0.5%	\$24,250,122	0.4%
Borough of Morris Plains	2,378	\$1,738,775,034	8	0.3%	\$13,017,966	0.7%
Town of Morristown	4,413	\$2,945,511,672	9	0.2%	\$4,663,192	0.2%
Borough of Mount Arlington	2,333	\$1,065,424,961	29	1.2%	\$9,544,383	0.9%
Township of Mount Olive	9,115	\$7,181,400,421	128	1.4%	\$79,672,753	1.1%
Borough of Mountain Lakes	1,642	\$1,183,405,498	0	0.0%	\$0	0.0%
Netcong Borough	1,100	\$695,081,980	1	0.1%	\$182,743	0.0%
Township of Parsippany-Troy Hills	17,064	\$11,747,551,200	499	2.9%	\$162,369,226	1.4%
Township of Pequannock	5,642	\$3,911,039,941	1,164	20.6%	\$1,330,167,376	34.0%
Township of Randolph	8,600	\$6,709,486,516	38	0.4%	\$53,145,730	0.8%
Borough of Riverdale	1,183	\$1,165,082,666	93	7.9%	\$68,198,580	5.9%
Borough of Rockaway	2,617	\$1,612,749,951	65	2.5%	\$79,799,573	4.9%
Township of Rockaway	11,485	\$7,225,058,745	79	0.7%	\$78,355,686	1.1%
Township of Roxbury	9,544	\$5,918,169,131	35	0.4%	\$11,423,489	0.2%



Municipality	Total # Buildings	Total Replacement Cost Value (RCV)	Estimated Building Stock Exposed			
			Number of Buildings - 1% Annual Chance Flood	% of Total	RCV - 1% Annual Chance Flood	% of Total
Borough of Victory Gardens	339	\$163,035,099	0	0.0%	\$0	0.0%
Township of Washington	8,062	\$5,265,032,309	107	1.3%	\$54,505,470	1.0%
Borough of Wharton	2,051	\$1,539,335,501	4	0.2%	\$20,730,246	1.3%
Morris County (Total)	189,129	\$127,068,881,137	5,461	2.9%	\$4,784,109,892	3.8%

Table 31. Estimated General Building Stock Exposure to the 0.2% Annual Chance Flood Event - All Occupancies

Municipality	Total # Buildings	Total Replacement Cost Value (RCV)	Estimated Building Stock Exposed			
			Number of Buildings - 0.2% Annual Chance Flood	% of Total	RCV - 0.2% Annual Chance Flood	% of Total
Town of Boonton	3,262	\$1,832,625,537	4	0.1%	\$1,065,975	0.1%
Township of Boonton	1,898	\$1,388,780,135	45	2.4%	\$23,164,207	1.7%
Borough of Butler	2,701	\$1,489,686,071	51	1.9%	\$38,291,351	2.6%
Chatham Borough	3,286	\$1,673,960,469	52	1.6%	\$55,178,850	3.3%
Chatham Township	4,080	\$2,300,237,613	29	0.7%	\$8,704,383	0.4%
Chester Borough	853	\$694,668,411	0	0.0%	\$0	0.0%
Chester Township	3,680	\$2,782,631,274	9	0.2%	\$6,046,672	0.2%
Denville Township	7,198	\$4,397,845,504	768	10.7%	\$406,050,377	9.2%
Town of Dover	4,514	\$2,640,787,978	683	15.1%	\$486,552,090	18.4%
Township of East Hanover	4,848	\$4,740,072,304	567	11.7%	\$483,530,707	10.2%
Borough of Florham Park	3,805	\$3,768,421,982	75	2.0%	\$146,223,395	3.9%
Township of Hanover	7,090	\$5,609,469,027	131	1.8%	\$394,545,422	7.0%
Township of Harding	2,230	\$1,808,255,972	102	4.6%	\$60,821,975	3.4%
Township of Jefferson	9,625	\$4,421,074,958	237	2.5%	\$92,280,762	2.1%
Borough of Kinnelon	4,093	\$2,858,766,250	0	0.0%	\$0	0.0%
Borough of Lincoln Park	4,166	\$2,125,371,898	1,128	27.1%	\$865,769,279	40.7%
Township of Long Hill	3,643	\$2,253,461,094	583	16.0%	\$499,491,240	22.2%
Borough of Madison	6,301	\$3,066,320,935	50	0.8%	\$14,060,145	0.5%
Borough of Mendham	2,139	\$1,479,178,043	9	0.4%	\$5,001,978	0.3%
Township of Mendham	2,667	\$2,099,041,883	34	1.3%	\$15,169,183	0.7%
Township of Mine Hill	1,590	\$766,971,485	1	0.1%	\$905,738	0.1%
Township of Montville	8,179	\$6,714,034,036	508	6.2%	\$1,143,998,960	17.0%
Township of Morris	9,713	\$6,091,077,654	71	0.7%	\$34,605,149	0.6%
Borough of Morris Plains	2,378	\$1,738,775,034	11	0.5%	\$14,070,904	0.8%
Town of Morristown	4,413	\$2,945,511,672	25	0.6%	\$24,337,520	0.8%
Borough of Mount Arlington	2,333	\$1,065,424,961	31	1.3%	\$11,004,618	1.0%
Township of Mount Olive	9,115	\$7,181,400,421	173	1.9%	\$100,217,659	1.4%
Borough of Mountain Lakes	1,642	\$1,183,405,498	0	0.0%	\$0	0.0%



Municipality	Total # Buildings	Total Replacement Cost Value (RCV)	Estimated Building Stock Exposed			
			Number of Buildings - 0.2% Annual Chance Flood	% of Total	RCV - 0.2% Annual Chance Flood	% of Total
Netcong Borough	1,100	\$695,081,980	1	0.1%	\$182,743	0.0%
Township of Parsippany-Troy Hills	17,064	\$11,747,551,200	1,080	6.3%	\$593,481,076	5.1%
Township of Pequannock	5,642	\$3,911,039,941	1,368	24.2%	\$1,467,171,536	37.5%
Township of Randolph	8,600	\$6,709,486,516	51	0.6%	\$167,542,739	2.5%
Borough of Riverdale	1,183	\$1,165,082,666	138	11.7%	\$187,861,546	16.1%
Borough of Rockaway	2,617	\$1,612,749,951	137	5.2%	\$149,454,326	9.3%
Township of Rockaway	11,485	\$7,225,058,745	118	1.0%	\$152,354,654	2.1%
Township of Roxbury	9,544	\$5,918,169,131	292	3.1%	\$83,713,703	1.4%
Borough of Victory Gardens	339	\$163,035,099	10	2.9%	\$16,469,074	10.1%
Township of Washington	8,062	\$5,265,032,309	145	1.8%	\$84,069,690	1.6%
Borough of Wharton	2,051	\$1,539,335,501	10	0.5%	\$34,824,169	2.3%
Morris County (Total)	189,129	\$127,068,881,137	8,727	4.6%	\$7,868,213,791	6.2%

The National Flood Insurance Program (NFIP) is a federal insurance program that provides flood insurance to properties in communities participating in the program. Homes and businesses in high-risk flood areas with mortgages from government-backed lenders are required to have flood insurance. NFIP data was reviewed for the 2025 HMP update.

PUBLIC REVIEW DRAFT - NOT FINAL

Table 32. NFIP Policies

Community Name and Number	Policies in Force	Total Coverage
Boonton, Town Of (340335)	6	\$ 1,512,000
Boonton, Township Of (340336)	18	\$ 6,600,000
Butler, Borough Of (340337)	29	\$ 12,679,000
Chatham, Borough Of (340338)	39	\$ 10,473,000
Chatham, Township Of (340504)	38	\$ 11,147,000
Chester, Township Of (340555)	12	\$ 3,192,000
Denville, Township Of (345292)	275	\$ 76,354,000
Dover, Town Of (340340)	149	\$ 41,764,000
East Hanover, Township Of (340341)	124	\$ 36,272,000
Florham Park, Borough Of (340342)	83	\$ 30,467,000
Hanover, Township Of (340343)	54	\$ 23,197,000
Harding, Township Of (340344)	36	\$ 12,259,000
Jefferson, Township Of (340522)	103	\$ 29,083,000
Lincoln Park, Borough Of (345300)	396	\$ 100,063,000
Long Hill, Township Of (340356)	138	\$ 36,988,000
Madison, Borough Of (340347)	40	\$ 11,152,000
Mendham, Borough Of (340540)	11	\$ 3,850,000
Mendham, Township Of (340511)	21	\$ 6,714,000
Mine Hill, Township Of (340556)	7	\$ 2,310,000



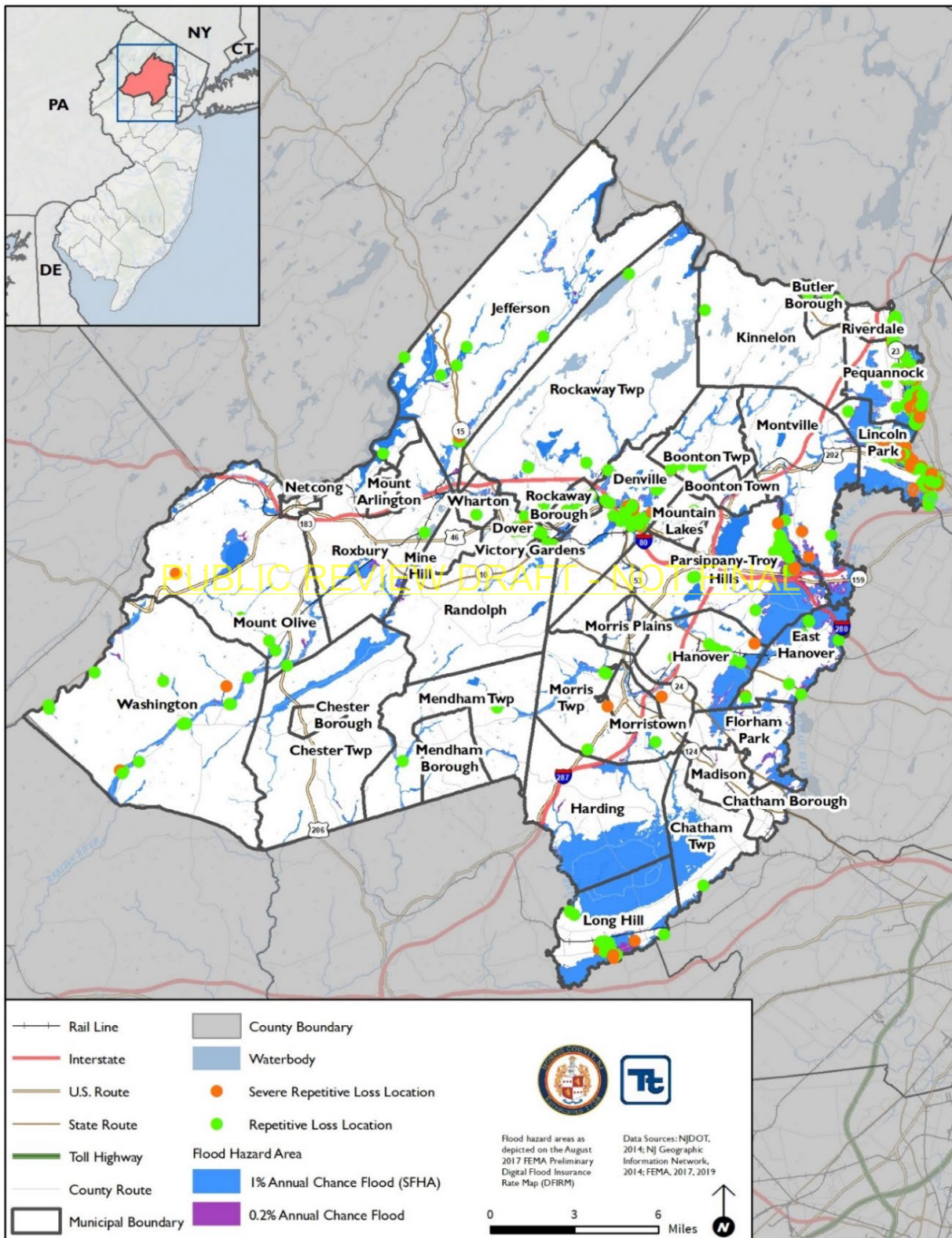
Community Name and Number	Policies in Force	Total Coverage
Montville, Township Of (340349)	131	\$ 45,733,000
Morris Plains, Borough Of (340351)	73	\$ 19,372,000
Morris, Township Of (340350)	75	\$ 25,172,000
Morristown, Town Of (340352)	31	\$ 11,726,000
Mount Arlington, Borough Of (340541)	5	\$ 1,526,000
Mount Olive, Township Of (340353)	53	\$ 15,673,000
Parsippany-Troy Hills, Township Of (340355)	249	\$ 73,048,000
Pequannock, Township Of (345311)	586	\$ 145,428,000
Randolph, Township Of (340358)	68	\$ 17,826,000
Riverdale, Borough Of (340359)	41	\$ 12,658,000
Rockaway, Borough Of (345315)	26	\$ 7,377,000
Rockaway, Township Of (340360)	46	\$ 19,491,000
Roxbury, Township Of (340362)	56	\$ 18,271,000
Washington, Township Of (340363)	49	\$ 14,451,000
Wharton, Borough Of (340364)	4	\$ 1,550,000

Source: FEMA

New Jersey ranks #2 nationally for repetitive flood losses. In Morris County, there are 4,450 flood-prone homes, 1,060 of which have a history of repetitive flooding loss. Hurricane Irene was the catalyst for the successful Flood Mitigation Program, a grant program that purchases flood-prone residential properties. After structures onsite are demolished, the land is permanently preserved. The Morris County Preservation Trust Fund funds the program. As of 2017, Morris County municipalities have acquired 68 homes in the program.



Figure 34. NFIP Repetitive Loss Properties in Morris County



Source: 2020 Morris County Hazard Mitigation Plan



3.8.8.3 IMPACT ON CRITICAL FACILITIES

Similar to the impacts on the general building stock, damage to critical facilities will vary for communities depending on the floodplain and proximity of critical facilities to flood sources.

3.8.8.4 IMPACT ON THE ECONOMY

Flood events can significantly impact the local and regional economy. This includes but is not limited to general building stock damages and associated tax loss, impacts to utilities and infrastructure, agricultural losses, business interruption, and effects on tourism. In areas that are directly flooded, renovations of commercial and industrial buildings may be necessary, disrupting associated services. Refer to the section earlier which discusses direct impacts to buildings in Morris County.

Flooding 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 may be temporarily out of operation.

3.8.9 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

3.8.9.1 PROJECTED DEVELOPMENT

Any areas of growth could be potentially impacted by the flood hazard if located within the floodplain, there is insufficient stormwater drainage capacity present, and/or mitigation measures are not considered. It continues to be 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.

3.8.9.2 PROJECTED CHANGES IN POPULATION

The County has and is projected to continue experiencing population growth. In 2017, the Morris County Strategic Plan Steering Committee reviewed population trends for their community. However, the results of the report show that employment is expected to decrease, the population is generally getting older, and household sizes are shrinking. Changes in demographic and their location relative to hazard areas should be considered as Morris County identifies short and long-term mitigation measures.

3.8.9.3 CLIMATE CHANGE

Most studies project that the State of New Jersey will see an increase in average annual temperatures and precipitation. Annual precipitation amounts in the region are projected to increase, primarily in the form of heavy rainfalls, which have the potential to increase the risk to flash flooding, riverine flooding, and flood critical transportation corridors and infrastructure. 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.

Existing dams may not be able to retain and manage increases in water flow from more frequent heavy rainfall events. Heavy rainfalls may result in more frequent overtopping of these dams and flooding of the County's assets in adjacent inundation areas. However, the probable maximum flood used to design each dam may be able to accommodate changes in climate.



3.8.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

Since DFIRMs and GIS data did not change, vulnerability remains consistent with the 2020 HMP.

3.9 GEOLOGICAL HAZARDS

3.9.1 2025 HMP CHANGES

- All subsections have been updated using best available data.
- Previous occurrences were updated with events that occurred between 2019 and 2023.

3.9.2 PROFILE

3.9.2.1 LANDSLIDES

According to the U.S. Geological Survey (USGS), the term landslide includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on an over steepened slope is the primary reason for a landslide, there are other contributing factors.

In New Jersey, there are four main types of landslides: slumps, debris flows, rockfalls, and rockslides. Slumps are coherent masses that move downslope by rotational slip on surfaces that underlie and penetrate the landslide deposit. 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 the movement of newly detached segments of bedrock sliding on bedrock, joint, or fault surfaces.

Although gravity acting on an over-steepened slope is the primary reason for a landslide, there are other contributing factors that include:

- Erosion by rivers, glaciers, or ocean waves create over-steepened slopes
- Rock and soil slopes are weakened through saturation by snowmelt or heavy rains
- Earthquakes create stresses that make weak slopes fail
- Earthquakes of magnitude 4.0 and greater have been known to trigger landslides
- Volcanic eruptions produce loose ash deposits, heavy rain, and debris flows
- Excess weight from accumulation of rain or snow or stockpiling of rock or ore, from waste piles or man-made structures may stress weak slopes to failure.

Landslides may be triggered by both natural and human-caused changes in the environment. Warning signs for landslide activity include:

- Springs, seeps, or saturated ground in areas that have not typically been wet before
- New cracks or unusual bulges in the ground, street pavement, or sidewalk
- Soil moving away from foundations
- Ancillary structures, such as decks and patios, tilting and moving relative to the main house
- Tilting or cracking of concrete floors and foundations
- Broken water lines and other underground utilities
- Leaning telephone poles, trees, retaining walls, or fences



- Offset fence lines
- Sunken or down-dropped road beds
- Rapid increase in creek water levels, possibly accompanied by increased turbidity
- Sudden increase in creek water levels while rain is still falling or just recently ended
- Sticking doors and windows, and visible open spaces indicating jambs and frames out of plumb
- A faint rumbling sound that increases in volume as the landslide nears
- Unusual sounds, such as trees cracking or boulders knocking together.

3.9.2.2 SUBSIDENCE/SINKHOLES

Land subsidence can be defined as 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. Subsidence often occurs through the loss of subsurface support in karst terrain, which may result from a number of natural- and human-caused occurrences. Karst describes a distinctive topography that indicates 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 stream, enlarged bedrock fractures, caves, and underground streams.

Sinkholes are a common geologic feature in New Jersey, occurring naturally in areas with soluble rocks like limestone, carbonate rock, and salt beds. Over thousands of years, acidic rainwater dissolves the carbonate bedrock, creating larger openings through which water and soil materials travel. Eventually, the voids enlarge to the point where the roof can no longer support the land above, resulting in a sinkhole formation.

While some sinkholes are naturally occurring, others are anthropogenic in origin. Human activities that alter the water balance in an area, such as over-withdrawal of groundwater, diverting surface water to a single point, creating artificial surface water ponds, or drilling new water wells, can accelerate the process of soil void formation and lead to sinkhole development.

Both natural and man-made sinkholes can appear suddenly without warning. Specific signs include slumping or falling fence posts, trees, or foundations, the sudden formation of small ponds, wilting vegetation, discolored well water, and structural cracks in walls and floors. When sinkholes occur in developed areas, they can cause significant property damage, disruption of utilities, harm to roadways, injuries, and even loss of life.

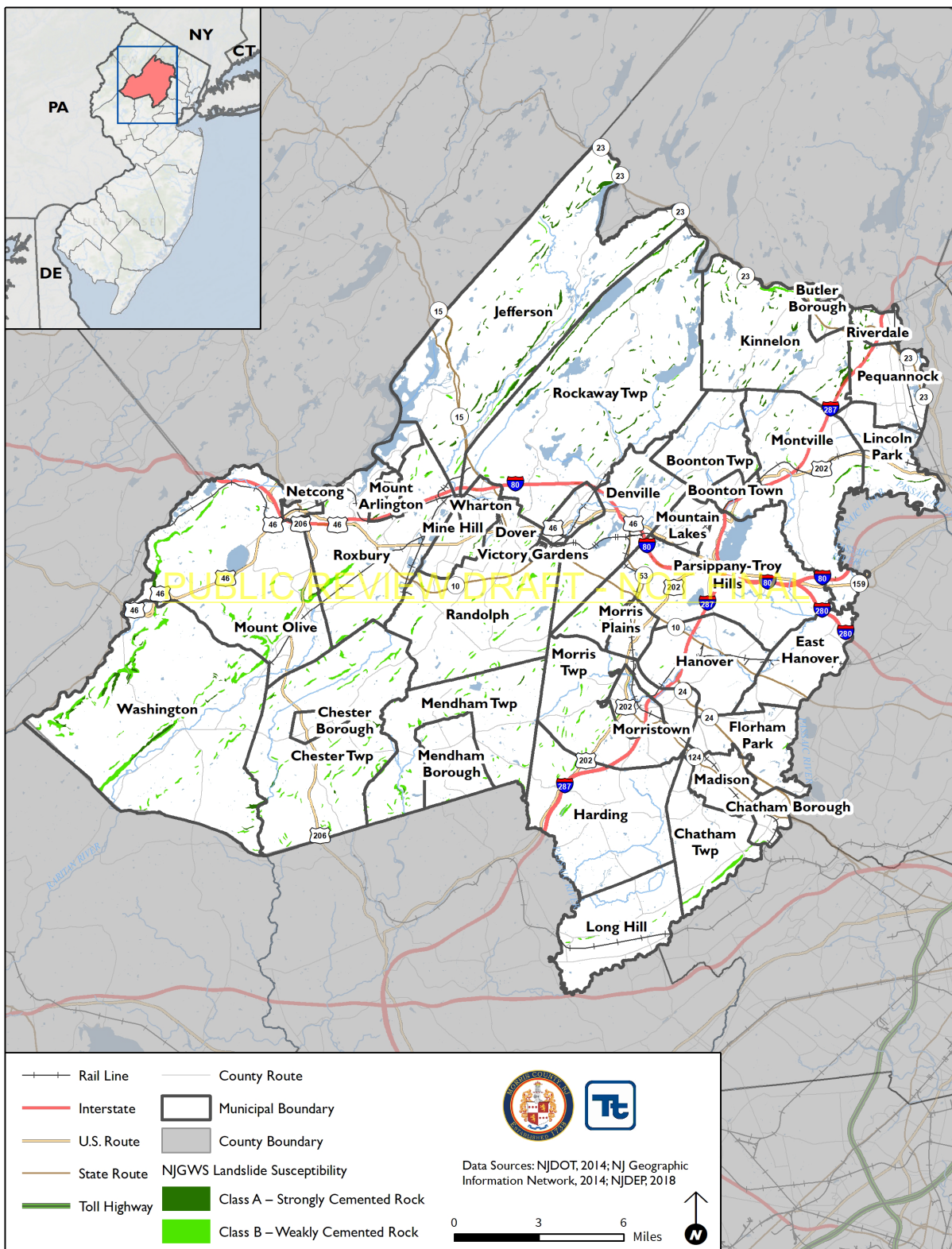
3.9.3 LOCATION

3.9.3.1 LANDSLIDES

Landslides are common in New Jersey, primarily in the northern region of the State. Figure 35 shows landslide susceptibility in Morris County. An exposure analysis found that 11.6 square miles of Morris County is susceptible to landslides. There are just under 5 square miles located in the Class A landslide susceptible area and 6.9 square miles in the Class B landslide susceptible area.



Figure 35. Landslide Susceptibility in Morris County



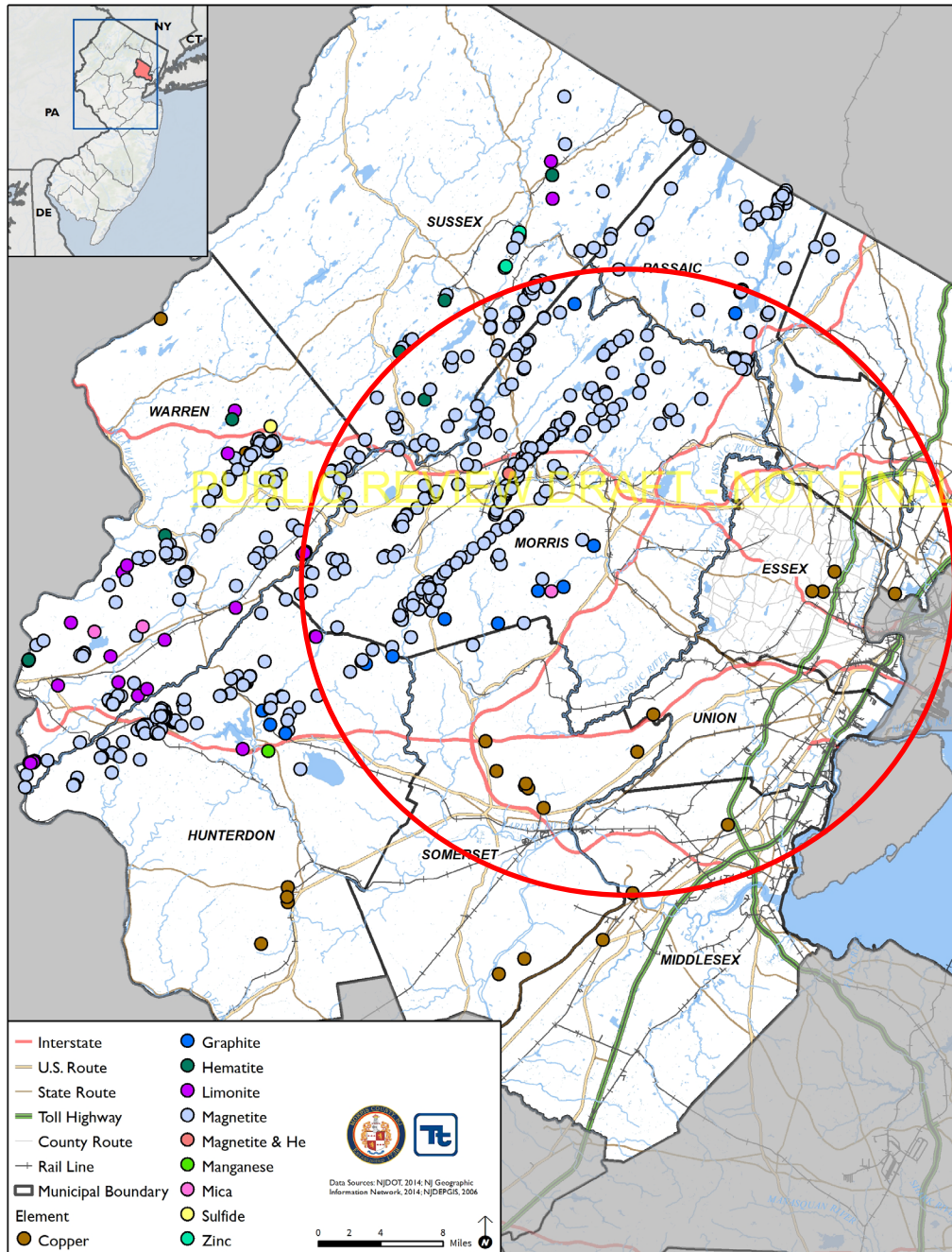
Source: 2020 Morris County Hazard Mitigation Plan



1.1.1.1 SUBSIDENCE/SINKHOLES

Figure 36 shows the location of the mapped abandoned mines in New Jersey. The data from NJGWS and the figure indicate that Morris County has more than 100 abandoned mines. Most of the mines in Morris County were magnetite mines with several mica and graphite mines. Abandoned mines are largely located in the northwestern half of the County.

Figure 36. Abandoned Mines in New Jersey



Source: 2020 Morris County Hazard Mitigation Plan

Note: The red circle indicates the location of Morris County.



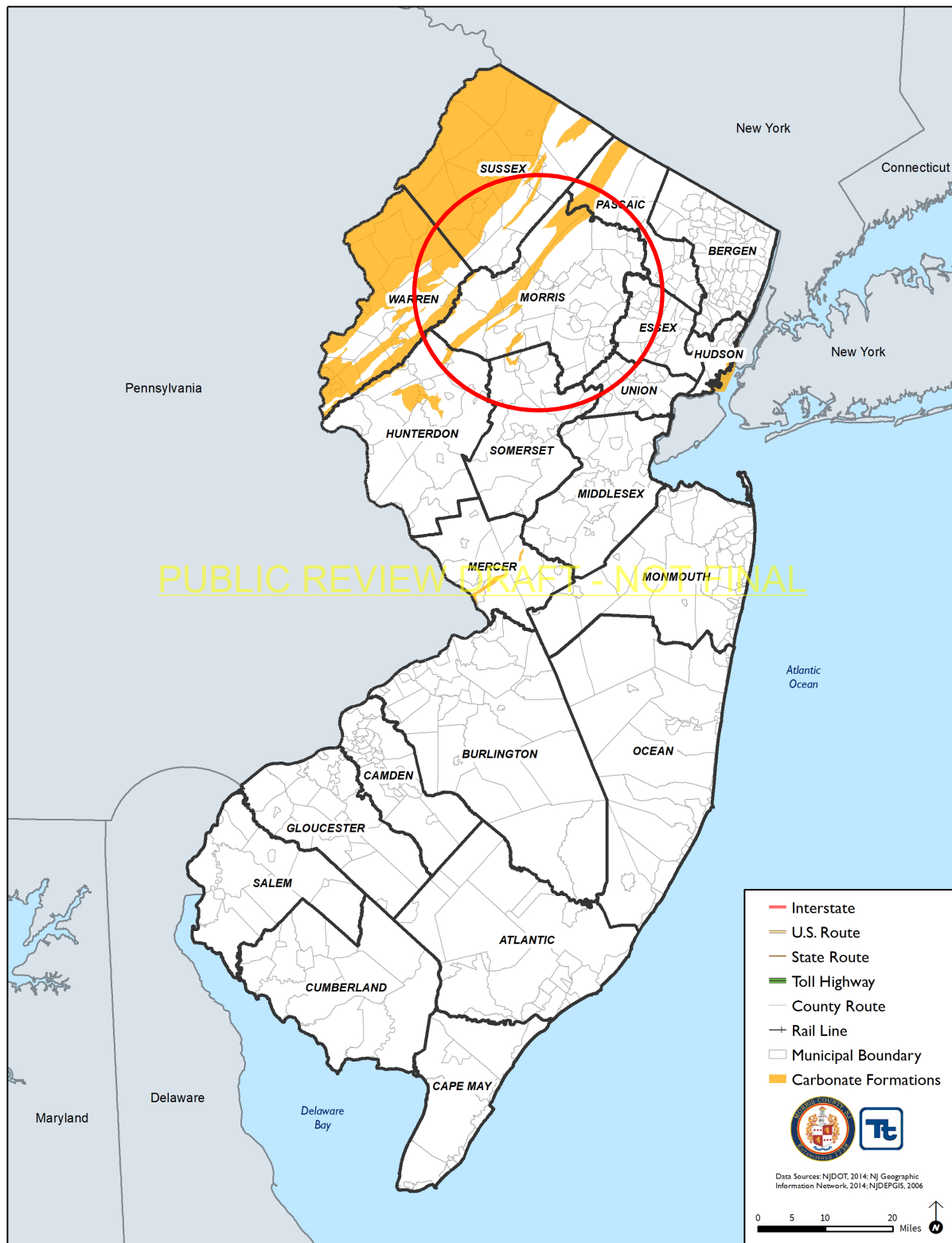
Naturally occurring subsidence and sinkholes in New Jersey occur within bands of carbonate bedrock. In northern New Jersey, there are more than 225 square miles that are underlain by limestone, dolomite, and marble. No collapsed sinkholes have been identified; however, there are some features which could be either very shallow solution depressions or wind blowout features. Sinkholes in New Jersey are generally concentrated in the northwestern part of the State.

Figure 37 illustrates the locations of carbonate-bearing geologic formations of New Jersey. Morris County contains carbonate rock formations in a narrow area running from the southwest to the northeast in the western portion of the County. The municipalities containing carbonate rock formations are Township of Jefferson, Rockaway Township, Township of Roxbury, Township of Mount Olive, Township of Washington, and Chester Township.

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Figure 37. Carbonate Rock Regions of New Jersey



Source: 2020 Morris County Hazard Mitigation Plan

Note: The red circle indicates the location of Morris County.

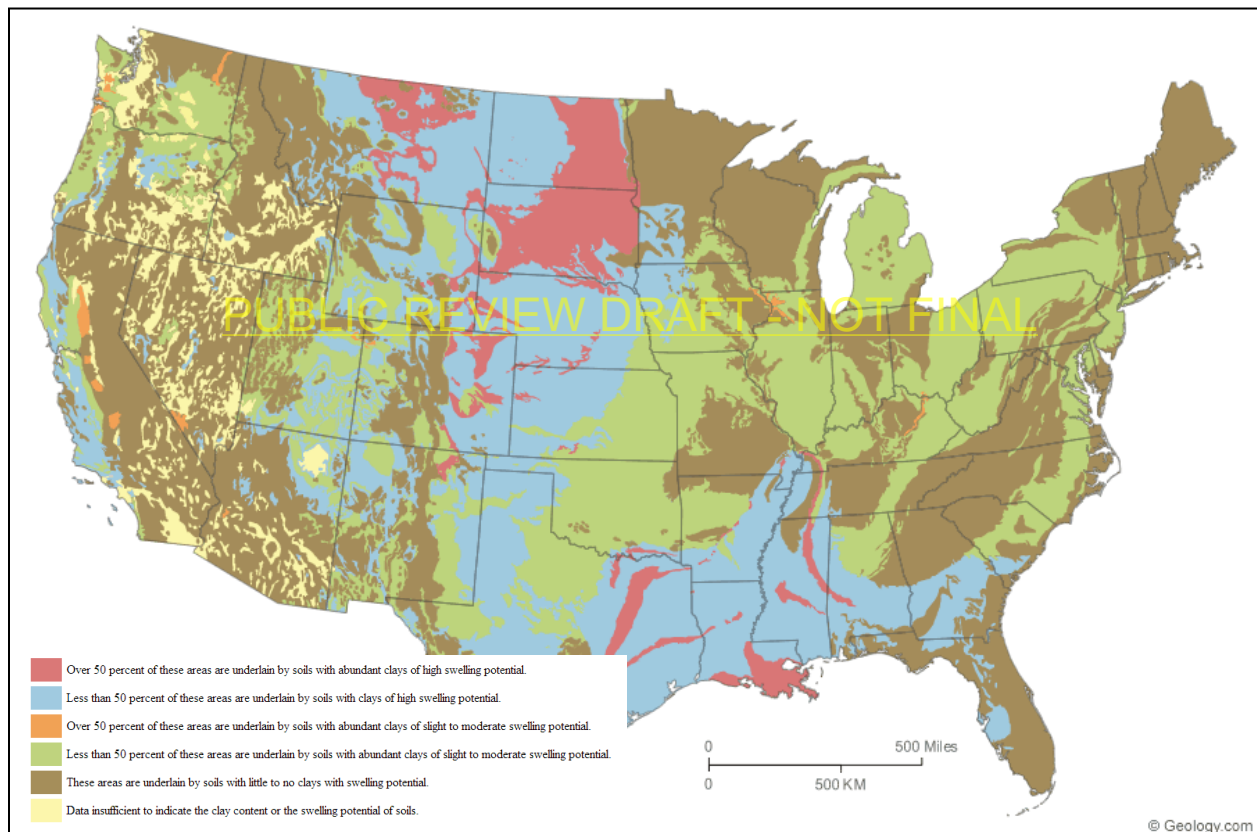


Leaking water pipes or structures that convey stormwater runoff may also result in areas of subsidence as the water dissolves substantial amounts of rock over time. In some cases, construction, land grading, or earthmoving activities that cause changes in stormwater flow can trigger sinkhole events. Subsidence or sinkhole events may occur in the presence of mining activity, especially in areas where the cover of a mine is thin, even in areas where bedrock is not necessarily conducive to their formation.

3.9.3.2 EXPANSIVE SOILS

Portions of New Jersey are underlain by soils with little to no clays with swelling potential. Morris County is mainly underlain by areas with little to no clays with swelling potential with some areas of less than 50 percent of the area underlain by soils with abundant clays of slight to moderate swelling potential located in the eastern portions of the County.

Figure 38. Expansive Soils of the United States



Source: Geology.com

3.9.4 EXTENT

3.9.4.1 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 any particular area include soil properties, topographic position and slope, and historical incidence. Predicting a landslide is difficult, even under ideal conditions and with reliable



information. As a result, the landslide hazard is often represented by landslide incidence and/or susceptibility, as defined below:

- Landslide incidence is the number of landslides that have occurred in a given geographic area. High incidence means greater than 15% of a given area has been involved in sliding; medium incidence means that 1.5 to 15% of an area has been involved; and low incidence means that less than 1.5% of an area has been involved.
- Landslide susceptibility is defined as 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 in areas where rocks and soils have experienced numerous landslides in the past. Landslide susceptibility depends on slope angle and the geologic material underlying the slope. Landslide susceptibility only identifies areas potentially affected and does not imply a time frame when a landslide might occur. High, medium, and low susceptibility are delimited by the same percentages used for classifying the incidence of sliding.

3.9.4.2 SUBSIDENCE/SINKHOLES

Subsidence and sinkholes can occur gradually or suddenly due to natural processes, like karst sinkholes in areas with soluble bedrock, or as a result of human activities. In the U.S., subsidence has directly impacted over 17,000 square miles in 45 states, with estimated annual costs of about \$125 million. The primary causes of subsidence include aquifer-system compaction, organic soil drainage, underground mining, hydrocompaction, natural compaction, sinkholes, and thawing permafrost.

Various methods are used to measure land subsidence. One commonly employed technique is the Global Positioning System (GPS), which monitors subsidence on a regional scale. Geodetic stations, spaced approximately four miles apart, serve as benchmarks for this monitoring.

Another increasingly popular method is Interferometric Synthetic Aperture Radar (InSAR), a remote sensing technique using radar signals to track changes in land surface elevation. InSAR offers a cost-effective solution for measuring land surface deformation with high spatial detail and resolution for a particular region.

3.9.4.3 EXPANSIVE SOILS

The plasticity index (PI) is expressed as the numerical difference between the plastic limit (the percent moisture content at which clay passes from the solid to the plastic state) and the liquid limit (the percent moisture content at which clay passes from the plastic to liquid state). The PI bears a direct relation to the amount and type of clay minerals present and to the orientation and size of clay particles. Other factors remain constant, the PI increases with amount of clay minerals, decreases with degree of parallel orientation of the clay minerals, and decreases with clay particle size.

The PI is generally a good indicator of swelling potential. Scientists have found the PI to be one of the most useful indicators of swelling potential. Expansive soils can be recognized either by visual inspection in the field or by conducting laboratory analyses.

3.9.5 PREVIOUS OCCURRENCES

Between 1954 and 2024, FEMA issued one disaster (DR) or emergency (EM) declaration for the State of New Jersey for one geological hazard-related event, classified as a mudslide. Morris County was included in this declaration. DR-1337 was declared for severe storms, flooding, and mudslides which took place from August 12-21, 2000.

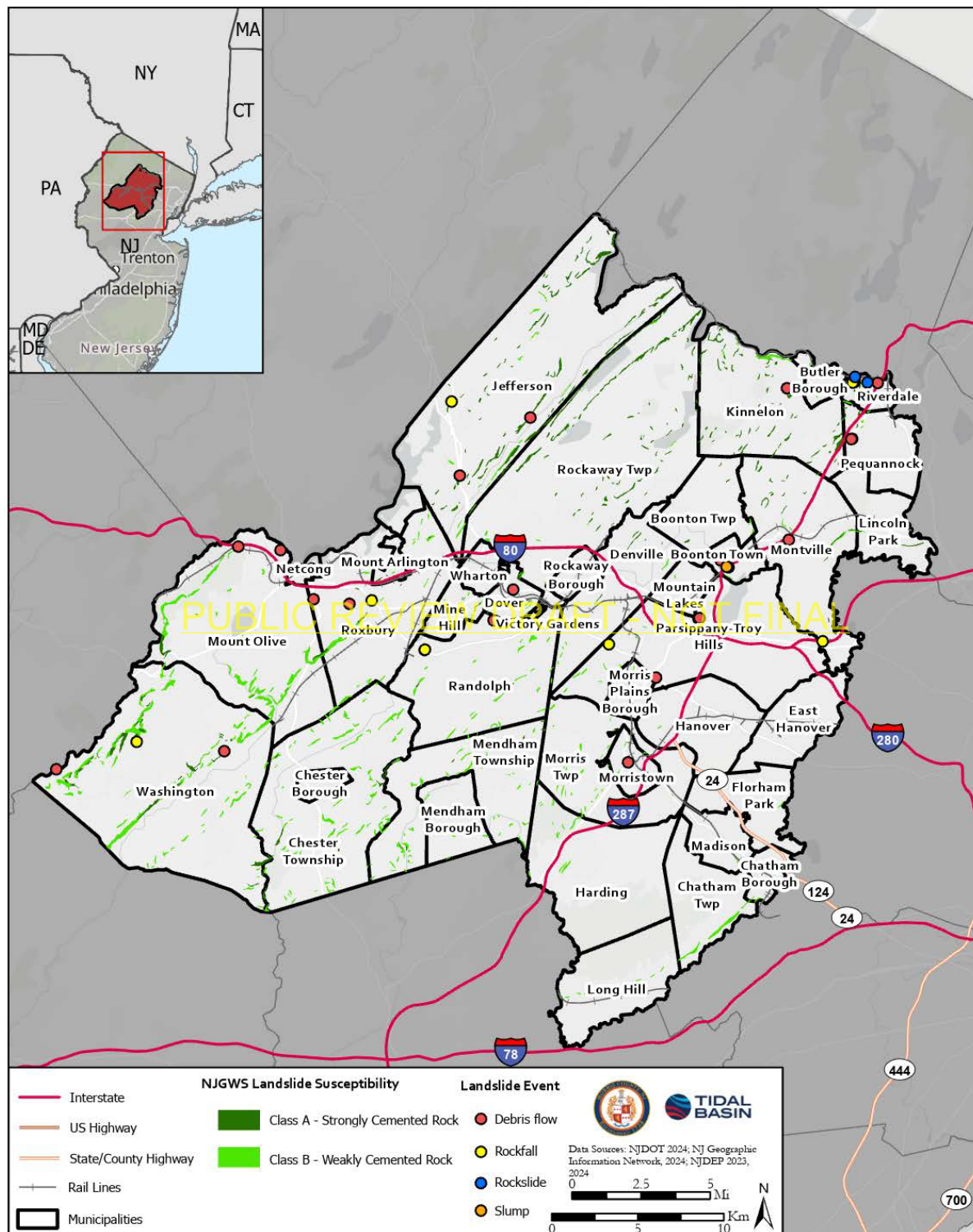


Figure 39 illustrates historic events landslide events in Morris County. This dataset is dated from 1782 to 2018 and does not reflect more recent events. According to the NJ State HMP and other databases researched, there are no recent geological hazard events that have impacted Morris County. Smaller scale geologic events may not be documented in databases available for this HMP update.

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Figure 39. Landslide Susceptibility Areas and Historic Landslide Incidents



A sinkhole formed on Interstate 80 near Wharton on December 26, 2024. The incident was caused by the collapse of an abandoned mine shaft. As of the writing of this plan, cleanup is still underway, with repairs expected to be completed in March 2025.



3.9.6 PROBABILITY

Based upon risk factors for and past occurrences, it is likely that geological hazards will occur in Morris County in the future, though it's also highly likely that widespread, direct impacts will be rare. It is estimated that Morris County will continue to experience direct and indirect impacts of geological hazards and its impacts on occasion, with the secondary effects causing potential disruption or damage to communities (i.e., roads, infrastructure, buildings). While

3.9.7 CLIMATE CHANGE IMPACTS

Future climate change may impact storm patterns, increasing the probability of more frequent, intense storms with varying duration, which in turn can exacerbate conditions necessary for landslides and subsidence. Increases in global temperature could affect the snowpack and its ability to hold and store water. Warming temperatures also could increase the occurrence and duration of droughts, which could increase the probability of wildfire, reducing the vegetation that helps to support steep slopes.

As the climate changes and temperatures increase, soils have the potential to dry out, resulting in expansive soils shrinking and failing. This could lead to a big problem in residential areas where buildings have shallow foundations; the soils will be unable to support the weights of a building. When expansive soils get dry, they begin to repel moisture instead of soaking it up. The water is more likely to run off, creating flash floods.

3.9.8 VULNERABILITY ASSESSMENT

3.9.8.1 IMPACT TO LIFE, HEALTH, AND SAFETY

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Generally, a landslide or subsidence event would be an isolated incidence and impact the populations within the immediate area of the incident. Specifically, the population located downslope of identified landslide hazard areas are particularly vulnerable to this hazard. In addition to causing damages to residential buildings and displacing residents, landslides and subsidence events can impact major roadways and inhibit travel for emergency responders or populations trying to evacuate the area.

Table 33 summarizes the population located in Class A, Class B landslide susceptible areas, and carbonate rock susceptible to natural subsidence/sinkholes. The Town of Morristown has the greatest number of persons living in the landslide susceptible Class A area (50 people which is less than 1% of the Town's total population). The Township of Washington has the greatest number of persons living in the landslide susceptible Class B area (262 people or 1.4% of the Township's total population), and the Township of Roxbury has the great number of persons residing in structures built on carbonate rock (7,328 people or 31.2-percent of the Township's total population).

Table 33. Estimated Population Located in the Geologic Hazard Area

Municipality	American Community Survey (2013-2017) Population	Class A Landslide Susceptibility Area	Percent (%) Total	Class B Landslide Susceptibility Area	Percent (%) Total	Carbonate Rock	Percent (%) of Total
Town of Boonton	8,390	0	0.0%	44	0.5%	0	0.0%
Township of Boonton	4,353	0	0.0%	36	0.8%	0	0.0%
Borough of Butler	7,780	0	0.0%	6	0.1%	0	0.0%
Chatham Borough	9,003	0	0.0%	32	0.4%	0	0.0%



Municipality	American Community Survey (2013-2017) Population	Class A Landslide Susceptibility Area	Percent (%) Total	Class B Landslide Susceptibility Area	Percent (%) Total	Carbonate Rock	Percent (%) of Total
Chatham Township	10,507	0	0.0%	240	2.3%	0	0.0%
Chester Borough	1,540	0	0.0%	0	0.0%	0	0.0%
Chester Township	7,931	3	0.0%	65	0.8%	538	6.8%
Denville Township	16,822	18	0.1%	65	0.4%	0	0.0%
Town of Dover	18,307	0	0.0%	62	0.3%	0	0.0%
Township of East Hanover	11,241	0	0.0%	0	0.0%	0	0.0%
Borough of Florham Park	11,792	0	0.0%	68	0.6%	0	0.0%
Township of Hanover	14,436	0	0.0%	0	0.0%	0	0.0%
Township of Harding	3,887	0	0.0%	95	2.4%	0	0.0%
Township of Jefferson	21,440	26	0.1%	35	0.2%	1,013	4.7%
Borough of Kinnelon	10,242	63	0.6%	3	0.0%	0	0.0%
Borough of Lincoln Park	10,464	101	1.0%	0	0.0%	0	0.0%
Township of Long Hill	8,763	0	0.0%	154	1.8%	0	0.0%
Borough of Madison	16,080	0	0.0%	0	0.0%	0	0.0%
Borough of Mendham	4,992	0	0.0%	14	0.3%	3	0.1%
Township of Mendham	5,877	13	0.2%	80	1.4%	311	5.3%
Township of Mine Hill	3,609	0	0.0%	0	0.0%	545	15.1%
Township of Montville	21,739	68	0.3%	13	0.1%	0	0.0%
Township of Morris	22,498	0	0.0%	94	0.4%	0	0.0%
Borough of Morris Plains	5,605	0	0.0%	0	0.0%	0	0.0%
Town of Morristown	18,833	150	0.8%	60	0.3%	0	0.0%
Borough of Mount Arlington	5,405	0	0.0%	0	0.0%	0	0.0%
Township of Mount Olive	29,010	0	0.0%	212	0.7%	6,446	22.2%
Borough of Mountain Lakes	4,309	0	0.0%	0	0.0%	0	0.0%
Netcong Borough	3,245	0	0.0%	0	0.0%	0	0.0%
Township of Parsippany-Troy Hills	53,444	0	0.0%	39	0.1%	0	0.0%
Township of Pequannock	15,499	0	0.0%	20	0.1%	0	0.0%
Township of Randolph	25,918	3	0.0%	178	0.7%	325	1.3%
Borough of Riverdale	4,238	13	0.3%	0	0.0%	1,261	29.7%



Municipality	American Community Survey (2013-2017) Population	Class A Landslide Susceptibility Area	Percent (%) Total	Class B Landslide Susceptibility Area	Percent (%) Total	Carbonate Rock	Percent (%) of Total
Borough of Rockaway	6,473	0	0.0%	0	0.0%	0	0.0%
Township of Rockaway	24,758	13	0.1%	26	0.1%	86	0.3%
Township of Roxbury	23,458	7	0.0%	19	0.1%	7,328	31.2%
Borough of Victory Gardens	1,655	0	0.0%	0	0.0%	0	0.0%
Township of Washington	18,713	14	0.1%	262	1.4%	3,664	19.6%
Borough of Wharton	6,591	0	0.0%	0	0.0%	0	0.0%
Morris County (Total)	498,847	491	0.1%	1,920	0.4%	21,519	4.3%

Sources: American Community Survey 5-year Estimate, 2017; NJGWS, 2015

Note: Class A includes classes AII, AIV, AVI which is strongly cemented rock at varying slope angles. Class B includes classes BIII, BIV, BV, and BVI which includes weakly cemented rock and soil at varying slope angles.

NJGWS New Jersey Geological Water Survey

Socially vulnerable populations (e.g., the elderly and low-income populations) are particularly vulnerable to a hazard event. Within Class A areas, there are approximately 72 people over the age of 65 and 24 people below the poverty level. As for populations within Class B areas, there are approximately 283 people over the age 65 and 80 people considered low-income populations. Impact on General Building Stock

In general, the built environment located in the high landslide susceptibility area and the population, structures and infrastructure located downslope are vulnerable to this hazard. Landslides also have the potential of destabilizing the foundation of structures, which may result in monetary losses to businesses and residents. There are 189,129 buildings with a replacement cost value of \$127 billion located in these landslide hazard areas countywide. The Borough of Lincoln Park has the greatest number of buildings located in Class A areas with 34 buildings (less than 1% of the Borough's total number of buildings) with an estimated replacement cost of \$11.8 million, while the Township of Washington has the greatest number of buildings located in Class B areas with 110 buildings (1.4% of the Township's total) with an estimated replacement cost of \$56 million. Table 34 summarizes the exposed building stock located in Class A and Class B landslide susceptibility areas by municipality.

Table 34. Number of Failing Buildings in the Class A and Class B Landslide Hazard Area by Municipality

Municipality	Total # of Buildings	Total Replacement Cost Value (RCV)	Class A				Class B			
			Number of Buildings - Class A	% of Total	RCV - Class A	% of Total	Number of Buildings - Class B	% of Total	RCV - Class B	% of Total
Town of Boonton	3,262	\$1,832,625,537	0	0.0%	\$0	0.0%	16	0.5%	\$6,219,298	0.3%
Township of Boonton	1,898	\$1,388,780,135	0	0.0%	\$0	0.0%	14	0.7%	\$4,669,558	0.3%
Borough of Butler	2,701	\$1,489,686,071	0	0.0%	\$0	0.0%	2	0.1%	\$935,998	0.1%
Chatham Borough	3,286	\$1,673,960,469	0	0.0%	\$0	0.0%	11	0.3%	\$6,678,513	0.4%
Chatham Township	4,080	\$2,300,237,613	0	0.0%	\$0	0.0%	78	1.9%	\$63,220,964	2.7%



Municipality	Total # of Buildings	Total Replacement Cost Value (RCV)	Class A				Class B			
			Number of Buildings - Class A	% of Total	RCV - Class A	% of Total	Number of Buildings - Class B	% of Total	RCV - Class B	% of Total
Chester Borough	853	\$694,668,411	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Chester Township	3,680	\$2,782,631,274	1	0.0%	\$853,072	0.0%	30	0.8%	\$16,388,570	0.6%
Denville Township	7,198	\$4,397,845,504	7	0.1%	\$2,101,954	0.0%	21	0.3%	\$14,975,859	0.3%
Town of Dover	4,514	\$2,640,787,978	0	0.0%	\$0	0.0%	14	0.3%	\$5,262,947	0.2%
Township of East Hanover	4,848	\$4,740,072,304	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Borough of Florham Park	3,805	\$3,768,421,982	0	0.0%	\$0	0.0%	17	0.4%	\$14,433,510	0.4%
Township of Hanover	7,090	\$5,609,469,027	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Township of Harding	2,230	\$1,808,255,972	0	0.0%	\$0	0.0%	43	1.9%	\$21,314,927	1.2%
Township of Jefferson	9,625	\$4,421,074,958	14	0.1%	\$4,334,836	0.1%	14	0.1%	\$4,512,106	0.1%
Borough of Kinnelon	4,093	\$2,858,766,250	27	0.7%	\$20,831,575	0.7%	1	0.0%	\$1,410,001	0.0%
Borough of Lincoln Park	4,166	\$2,125,371,898	34	0.8%	\$11,871,322	0.6%	0	0.0%	\$0	0.0%
Township of Long Hill	3,643	\$2,253,461,094	0	0.0%	\$0	0.0%	54	1.5%	\$25,652,702	1.1%
Borough of Madison	6,301	\$3,066,320,935	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Borough of Mendham	2,139	\$1,479,178,043	0	0.0%	\$0	0.0%	5	0.2%	\$5,985,022	0.4%
Township of Mendham	2,667	\$2,099,041,883	5	0.2%	\$2,050,578	0.1%	34	1.3%	\$33,243,377	1.6%
Township of Mine Hill	1,590	\$766,971,485	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Township of Montville	8,179	\$6,714,034,036	25	0.3%	\$12,859,883	0.2%	5	0.1%	\$3,434,347	0.1%
Township of Morris	9,713	\$6,091,077,654	0	0.0%	\$0	0.0%	36	0.4%	\$26,562,465	0.4%
Borough of Morris Plains	2,378	\$1,738,775,034	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Town of Morristown	4,413	\$2,945,511,672	25	0.6%	\$7,711,229	0.3%	14	0.3%	\$22,927,023	0.8%
Borough of Mount Arlington	2,333	\$1,065,424,961	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Township of Mount Olive	9,115	\$7,181,400,421	0	0.0%	\$0	0.0%	60	0.7%	\$37,536,480	0.5%
Borough of Mountain Lakes	1,642	\$1,183,405,498	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Netcong Borough	1,100	\$695,081,980	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Township of Parsippany-Troy Hills	17,064	\$11,747,551,200	0	0.0%	\$0	0.0%	10	0.1%	\$3,955,495	0.0%



Municipality	Total # of Buildings	Total Replacement Cost Value (RCV)	Class A				Class B			
			Number of Buildings - Class A	% of Total	RCV - Class A	% of Total	Number of Buildings - Class B	% of Total	RCV - Class B	% of Total
Township of Pequannock	5,642	\$3,911,039,941	0	0.0%	\$0	0.0%	6	0.1%	\$1,715,180	0.0%
Township of Randolph	8,600	\$6,709,486,516	1	0.0%	\$1,034,098	0.0%	58	0.7%	\$33,162,659	0.5%
Borough of Riverdale	1,183	\$1,165,082,666	3	0.3%	\$1,321,762	0.1%	1	0.1%	\$1,087,914	0.1%
Borough of Rockaway	2,617	\$1,612,749,951	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Township of Rockaway	11,485	\$7,225,058,745	9	0.1%	\$3,891,595	0.1%	10	0.1%	\$4,214,865	0.1%
Township of Roxbury	9,544	\$5,918,169,131	2	0.0%	\$1,494,182	0.0%	9	0.1%	\$5,665,590	0.1%
Borough of Victory Gardens	339	\$163,035,099	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Township of Washington	8,062	\$5,265,032,309	7	0.1%	\$4,539,320	0.1%	110	1.4%	\$56,195,921	1.1%
Borough of Wharton	2,051	\$1,539,335,501	0	0.0%	\$0	0.0%	0	0.0%	\$0	0.0%
Morris County (Total)	189,129	\$127,068,881,137	160	0.1%	\$74,895,407	0.1%	673	0.4%	\$421,361,291	0.3%

Sources: Morris County 2019; Microsoft, 2018, Open Street Map, 2019; NJOIT, 2018; NJGWS, 2015

Note: NJGWS New Jersey Geological Water Survey

RCV Replacement Cost Value

Class A includes classes AI, AII, AIV, AVI which is strongly cemented rock at varying slope angles. Class B includes classes BIII, BIV, and BV which includes weakly cemented rock and soil at varying slope angles.

Table 35 summarizes the building stock constructed on carbonate rock by municipality and potentially susceptible to natural subsidence/sinkholes. In total, there are 9,382 buildings are located on carbonate rock countywide. This is equal to approximately \$7.8 billion of the total replacement costs for buildings in Morris County. The Township of Roxbury has the greatest number of buildings constructed on carbonate rock (39.1% of the Township's total number of buildings) with an estimated replacement cost of approximately \$2.6 billion.

Table 35. Number of Buildings on Carbonate Rock by Municipality

Municipality	Total Number of Buildings	Total Replacement Cost Value (RCV)	Carbonate Rock			
			Number of Buildings - Carbonate	% of Total	RCV - Carbonate	% of Total
Town of Boonton	3,262	\$1,832,625,537	0	0.0%	\$0	0.0%
Township of Boonton	1,898	\$1,388,780,135	0	0.0%	\$0	0.0%
Borough of Butler	2,701	\$1,489,686,071	0	0.0%	\$0	0.0%
Chatham Borough	3,286	\$1,673,960,469	0	0.0%	\$0	0.0%
Chatham Township	4,080	\$2,300,237,613	0	0.0%	\$0	0.0%
Chester Borough	853	\$694,668,411	0	0.0%	\$0	0.0%
Chester Township	3,680	\$2,782,631,274	266	7.2%	\$238,625,868	8.6%



Municipality	Total Number of Buildings	Total Replacement Cost Value (RCV)	Carbonate Rock			
			Number of Buildings - Carbonate	% of Total	RCV - Carbonate	% of Total
Denville Township	7,198	\$4,397,845,504	0	0.0%	\$0	0.0%
Town of Dover	4,514	\$2,640,787,978	0	0.0%	\$0	0.0%
Township of East Hanover	4,848	\$4,740,072,304	0	0.0%	\$0	0.0%
Borough of Florham Park	3,805	\$3,768,421,982	0	0.0%	\$0	0.0%
Township of Hanover	7,090	\$5,609,469,027	0	0.0%	\$0	0.0%
Township of Harding	2,230	\$1,808,255,972	0	0.0%	\$0	0.0%
Township of Jefferson	9,625	\$4,421,074,958	410	4.3%	\$173,839,550	3.9%
Borough of Kinnelon	4,093	\$2,858,766,250	0	0.0%	\$0	0.0%
Borough of Lincoln Park	4,166	\$2,125,371,898	0	0.0%	\$0	0.0%
Township of Long Hill	3,643	\$2,253,461,094	0	0.0%	\$0	0.0%
Borough of Madison	6,301	\$3,066,320,935	0	0.0%	\$0	0.0%
Borough of Mendham	2,139	\$1,479,178,043	7	0.3%	\$1,846,877	0.1%
Township of Mendham	2,667	\$2,099,041,883	163	6.1%	\$146,701,758	7.0%
Township of Mine Hill	1,590	\$766,971,485	228	14.3%	\$67,867,046	8.8%
Township of Montville	8,179	\$6,714,034,036	0	0.0%	\$0	0.0%
Township of Morris	9,713	\$6,091,077,654	0	0.0%	\$0	0.0%
Borough of Morris Plains	2,378	\$1,738,775,034	0	0.0%	\$0	0.0%
Town of Morristown	4,413	\$2,945,511,672	0	0.0%	\$0	0.0%
Borough of Mount Arlington	2,333	\$1,065,424,961	0	0.0%	\$0	0.0%
Township of Mount Olive	9,115	\$7,181,400,421	1,962	21.5%	\$1,848,104,162	25.7%
Borough of Mountain Lakes	1,642	\$1,183,405,498	0	0.0%	\$0	0.0%
Netcong Borough	1,100	\$695,081,980	0	0.0%	\$0	0.0%
Township of Parsippany-Troy Hills	17,064	\$11,747,551,200	0	0.0%	\$0	0.0%
Township of Pequannock	5,642	\$3,911,039,941	0	0.0%	\$0	0.0%
Township of Randolph	8,600	\$6,709,486,516	145	1.7%	\$431,935,389	6.4%
Borough of Riverdale	1,183	\$1,165,082,666	330	27.9%	\$171,719,149	14.7%
Borough of Rockaway	2,617	\$1,612,749,951	0	0.0%	\$0	0.0%



Municipality	Total Number of Buildings	Total Replacement Cost Value (RCV)	Carbonate Rock			
			Number of Buildings - Carbonate	% of Total	RCV - Carbonate	% of Total
Township of Rockaway	11,485	\$7,225,058,745	231	2.0%	\$577,508,792	8.0%
Township of Roxbury	9,544	\$5,918,169,131	3,730	39.1%	\$2,579,739,945	43.6%
Borough of Victory Gardens	339	\$163,035,099	0	0.0%	\$0	0.0%
Township of Washington	8,062	\$5,265,032,309	1,910	23.7%	\$1,550,901,735	29.5%
Borough of Wharton	2,051	\$1,539,335,501	0	0.0%	\$0	0.0%
Morris County (Total)	189,129	\$127,068,881,137	9,382	5.0%	\$7,788,790,272	6.1%

Sources: Morris County 2019; Microsoft, 2018, Open Street Map, 2019; NJOIT, 2018; NJGWS, 1999

Note: NJGWS New Jersey Geological Water Survey
RCV Replacement Cost Value

3.9.8.2 IMPACT ON CRITICAL FACILITIES

The spatial analysis shows that there are three critical facilities located in the identified landslide susceptibility hazard areas in the County. Two of these critical facilities are dams and one is a wastewater facility. In addition to critical facilities, a significant amount of infrastructure can be exposed to mass movements of geological material:

- Roads—Access to major roads is crucial to life-safety after a disaster event and to response and recovery operations. Landslides 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.
- 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—Power lines are generally elevated above steep slopes; but the towers supporting them can be subject to landslides. A landslide could trigger failure of the soil underneath a tower, causing it to collapse and ripping down the lines. Power and communication failures due to landslides can create problems for vulnerable populations and businesses.
- Rail Lines – Similar to roads, rail lines are important for response and recovery operations after a disaster. Landslides can block travel along the rail lines, which would become especially troublesome, because it would not be as easy to detour a rail line as it is on a local road or highway. Many residents rely on public transport to get to work around the county and into Philadelphia and New York City, and a landslide event could prevent travel to and from work.

An exposure analysis was completed to assess the number of miles that major highways intersect the geologic hazard areas. The analysis found that 3.2 miles of highway, 3.4 miles of highway, and 13.2 miles of highway are constructed on landslide susceptible soils Classes A and Class B, and carbonate rock (natural subsidence/sinkhole), respectively. This includes the following major roadways: I-80, US 46, US 206, NJ 10, NJ 23, NJ 15, I-287, and US 202.

3.9.8.3 IMPACT ON THE ECONOMY

Geologic hazards can impose direct and indirect impacts on society. Direct costs include the actual damage sustained by buildings, property and infrastructure. Indirect costs, such as clean-up costs, business interruption, loss of tax revenues, reduced property values, and loss of productivity are difficult to measure. Additionally,



ground failure threatens transportation corridors, fuel and energy conduits, and communication lines. Estimated potential damages to general building stock can be quantified as discussed above.

3.9.8.4 IMPACT ON THE ENVIRONMENT

A landslide or sinkhole/subsidence event will alter the landscape. In addition to changes in topography, vegetation and wildlife habitats may be damaged or destroyed, and soil and sediment runoff will accumulate downslope potentially blocking waterways and roadways and impacting quality of streams and other water bodies. Additional environmental impacts include loss of forest productivity.

Furthermore, soil and sediment runoff can accumulate downslope potentially blocking waterways and roadways and impacting quality of streams and other water bodies. Mudflows that erode into downstream waterways can threaten the life of freshwater and/or coastal species. The impacts of eroded landscape can travel for miles downstream into adjacent waterways and create issues for surrounding watersheds.

A majority of the County is not susceptible to landslides, however there are small areas throughout the County that are susceptible to landslide events (Class AI, AII, AIV, AVI, BIII, BIV, and BV). An exposure analysis found that 46.6 square miles of Morris County is susceptible to the geologic hazard (4.7 square miles located in the Class A landslide susceptibility area; 6.9 square miles located in the Class B landslide susceptibility area, and 35.0 square miles located over carbonate rock and potentially susceptible to natural subsidence/sinkholes).

3.9.9 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

3.9.9.1 PROJECTED DEVELOPMENT

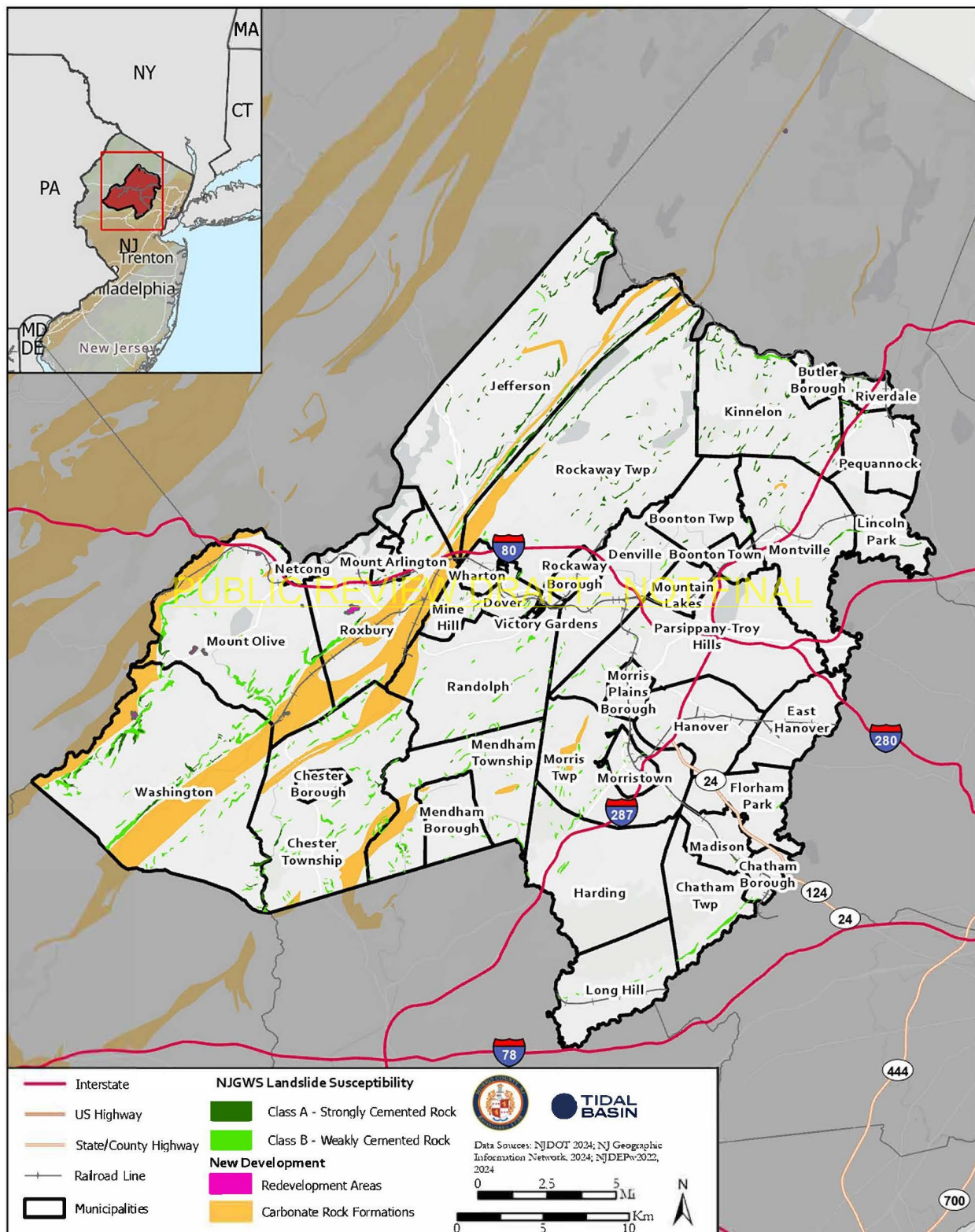
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Any areas of growth could be potentially impacted by the geologic hazard if located within the identified hazard areas or downslope. In general, development of slopes is not recommended due to the increased risk of erosion, stormwater runoff and flooding potential. The additional runoff results in sedimentation of down slope surface waters, which damages habitat and has the potential to damage property. The sloping land increases the rate of runoff, which reduces the rate of groundwater infiltration.

Each municipality identified areas of recent development and proposed development in their community. Developments that could be located using an address or Parcel ID were geocoded and overlain with the landslide hazard areas to determine vulnerability to flooding. Four proposed new development locations may be susceptible to the landslide. Figure 40 illustrates the proposed new development and the geologic hazard areas.



Figure 40. Potential New Development and Landslide Hazard Areas





3.9.9.2 PROJECTED CHANGES IN POPULATION

Morris County has been experiencing and is projected to continue experiencing a growth in population. As discussed above, several major roadways through the County are exposed to the geologic hazard, and an increasing population in the County and surrounding areas that utilize these roadways will result in a greater number of people exposed on a daily basis.

3.9.9.3 CLIMATE CHANGE

Climate change may increase the likelihood of landslides. Warming temperatures resulting in wildfires would reduce vegetative cover along steep slopes and destabilize the soils due to destruction of the root system; increased intensity of rainfall events would increase saturation of soils on steep slopes. Under these future conditions, the County's assets located on or at the base of these steep slopes will have an increased risk to landslides. Roadways and other transportation infrastructure located in these areas will also be at an increased risk of closure, which would impact the County's risk as described above.

Higher temperatures and the possibility of more intense, less frequent summer rainfall may lead to changes in water resource availability. The projection in the increase of average temperatures may lead to an increase in the frequency of droughts. Sinkhole activity intensifies in some karst areas increases during periods of drought. With an increase in drought periods, the number of sinkholes can increase. Additionally, changes to the water balance of an area including over-withdrawal of 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 will cause sinkholes. These actions can also serve to accelerate the natural processes of bedrock degradation, which can have a direct impact on sinkhole creation.

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3.9.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

The entire County continues to be vulnerable to the geological hazard. Overall, the hazard area delineations remained unchanged, so any signification increase in vulnerability would be attributed to population growth and new development.

3.10 HAZARDOUS MATERIALS

3.10.1 2025 HMP CHANGES

- All subsections have been updated using best available data.
- Previous events between 2019 and 2023 were researched.

3.10.2 PROFILE

Hazardous substances are materials that are considered severely harmful to human health and the environment, as defined by the United States Environmental Protection Agency (USEPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Superfund Law). Many are commonly used substances which are harmless in their normal uses but are quite dangerous if released. The Superfund Law designates more than 800 substances as hazardous and identifies many more as potentially hazardous due to their characteristics and the circumstances of their release. Superfund's definition of a hazardous substance includes the following:

- Any element, compound, mixture, solution, or substance designated as hazardous under section 102 of CERCLA.



- Any hazardous substance designated under section 311(b)(2)(a) of the Clean Water Act (CWA), or any toxic pollutant listed under section 307(a) of the CWA. There are over 400 substances designated as either hazardous or toxic under the CWA.
- Any hazardous waste having the characteristics identified or listed under section 3001 of the Resource Conservation and Recovery Act.
- Any hazardous air pollutant listed under section 112 of the Clean Air Act, as amended. There are over 200 substances listed as hazardous air pollutants under the Clean Air Act (CAA).
- Any imminently hazardous chemical substance or mixture which the EPA Administrator has "taken action under" section 7 of the Toxic Substances Control Act.

If released or misused, hazardous substances can cause death, serious injury, long-lasting health effects, and damage to structures and other properties, as well as the environment. Many products containing hazardous substances are used and stored in homes and these products are shipped daily on highways, railroads, waterways, and pipelines.

Transportation of hazardous substances on highways involves tanker trucks or trailers, which are responsible for the greatest number of hazard substance release incidents. New Jersey is composed of approximately 39,000 miles of federal, state, and local roadways, many of which are used to transport hazardous substances. These roads cross rivers and streams at many points; hazardous substance spills on roads have the potential to pollute watersheds that serve as domestic water supplies for parts of the state. Potential also exists for hazardous substance releases to occur along rail lines as collisions and derailments of train cars can result in large spills.

Pipelines can also transport hazardous liquids and flammable substances such as natural gas and petroleum. Incidents can occur when pipes corrode, when they are damaged during excavation, incorrectly operated, or damaged by other forces. In New Jersey, most of the large pipeline leaks have been caused by marine traffic hitting or the anchors of ships effecting pipelines in the waterways. In addition, hazardous substances can be transported by aircraft or by watercraft. Crashes, spills of materials, and fires on these vessels can pose a hazard.

3.10.3 LOCATION

The following provides information regarding the location of hazardous substance incidents.

3.10.3.1 FIXED SITES

Years ago, numerous wastes were dumped on the ground, in rivers, or left out in the open. As a result, thousands of uncontrolled or abandoned contaminated sites were created. These sites included abandoned warehouses, manufacturing facilities, processing plants, and landfills. In response to concerns regarding health and environmental risks, Congress established the Superfund program in 1980 to clean up these sites. The Superfund program is administered by the USEPA in cooperation with individual states.

In New Jersey, the Department of Environmental Protection (NJDEP) Site Remediation Program oversees the Superfund program. With 115 hazardous waste sites as of May 2023, New Jersey has more Superfund sites than any other state. An estimated 50% of New Jersey's population lives within three miles of a Superfund site. Morris County is home to 11 Superfund sites.

Table 36. Superfund Sites in Morris County

Superfund Site	Location
Rolling Knolls	Green Village
Dayco Corp Le Carpenter	Wharton Borough
Rockaway Borough Well Field	Rockaway Township



Superfund Site	Location
Radiation Technology, Inc.	Rockaway Township
Picatinny arsenal U.S. Army	Dover
Rockaway Township Wells	Rockaway Township
Sharkey Landfill	Parsippany
Dover Municipal Well 4	Dover
Combe Fill South Landfill	Chester Township
Combe Fill North Landfill	Mount Olive Township
Pepe Field	Boonton

Source: Superfund

Fixed-site facilities that use, manufacture, or store hazardous substances in New Jersey pose a risk and must comply with Title III of the federal SARA, which is linked to N.J.S.A. 34:5A, the New Jersey Worker and Community Right to Know Act. SARA requires the governor of each state to establish a State Emergency Response Commission (SERC), which was established in New Jersey in 1987. SARA also requires that emergency planning districts be established by the SERC. The Act specified that these districts can be existing political subdivisions. The function of the emergency planning district is to facilitate preparation and implementation of emergency plans. In New Jersey, all municipalities and counties have been designated emergency planning districts (total of 585). The Local Emergency Planning Committees (LEPC) is the policy body for the emergency planning district.

The State enacted the Toxic Catastrophe Prevention Act (TCPA), N.J.S.A. 13:1K-19 et seq. Currently, implementation of the requirements established under this Act is facilitated by the TCPA Program. Certain industrial facilities using materials considered extraordinarily hazardous must take steps to prevent releases and protect public safety. New Jersey has also mandated that facilities storing large quantities of hazardous substances take preventative measures to reduce the likelihood of a leak or discharge. Established under the New Jersey Spill Compensation and Control Act (N.J.S.A. 58:10-23.11), these requirements include testing and inspection of storage tanks, training of employees, and emergency response planning. The Discharge Prevention Containment and Countermeasure (DPCC) program facilitates implementing these requirements. Regulations related to reporting of chemical and petroleum discharges are also administered under this program.

The Community Right to Know (CRTK) program collects, processes, and disseminates the chemical inventory, environmental release and materials accounting data required to be reported under the New Jersey Worker and Community Right to Know Act, N.J.S.A.34:5A and the federal Emergency Planning and Community Right to Know Act of 1986 (EPCRA). EPCRA is also known as Title III of the SARA. This information is used by the public, emergency planners, and first responders to determine the chemical hazards in the community.

The U.S. EPA Biennial Hazardous Waste Report collects data on the generation, management, and minimization of hazardous waste. This report provides detailed data on generating hazardous waste from large-quantity generators and data on waste management practices from treatment, storage, and disposal facilities. This report lists 46 facilities in Morris County.

New Jersey employers with specific North American Industry Classification System (NAICS) codes must submit CRTK surveys listing environmental hazardous substances (EHSs) exceeding 500 pounds. Federal facilities and private sector facilities under OSHA's Hazard Communication Standard must report chemical inventories over 10,000 pounds unless it's an Extremely Hazardous Substance with a lower reporting threshold.

The NJDEP maintains a list of Known Contaminated Sites of New Jersey (KCSNJ), which is an inventory that includes all sites in the State where contamination is known to exist. The remediation for these sites is active or pending in the NJDEP's Site Remediation Program (SRP). There are 607 KCSNJ sites in Morris County, an increase of almost 100 sites since 2017. Facilities are listed by jurisdiction in Table 37.



Table 37. KCSNJ Sites in Morris County

Jurisdiction	Number of Sites	Jurisdiction	Number of Sites
Boonton	24	Mine Hill Township	6
Boonton Township	5	Montville Township	26
Butler Borough	11	Morris Plains Borough	6
Chatham Borough	14	Morristown Township	40
Chatham Township	9	Morris Township	19
Chester Borough	6	Mountain Lakes Borough	6
Chester Township	8	Mount Arlington Borough	1
Denville Township	24	Mount Olive Township	14
Dover Township	35	Netcong Borough	10
East Hanover Township	32	Parsippany-Troy Hills	41
Florham Park Borough	14	Pequannock Township	10
Hanover Township	54	Randolph Township	18
Harding Township	2	Riverdale Borough	5
Jefferson Township	17	Rockaway Borough	21
Kinnelon Borough	5	Rockaway Township	22
Lincoln Park Borough	5	Roxbury Township	39
Long Hill Township	14	Washington Township	10
Madison Borough	16	Wharton Borough	11
Mendham Borough	3		
Mendham Township	4		

Source: NJDEP

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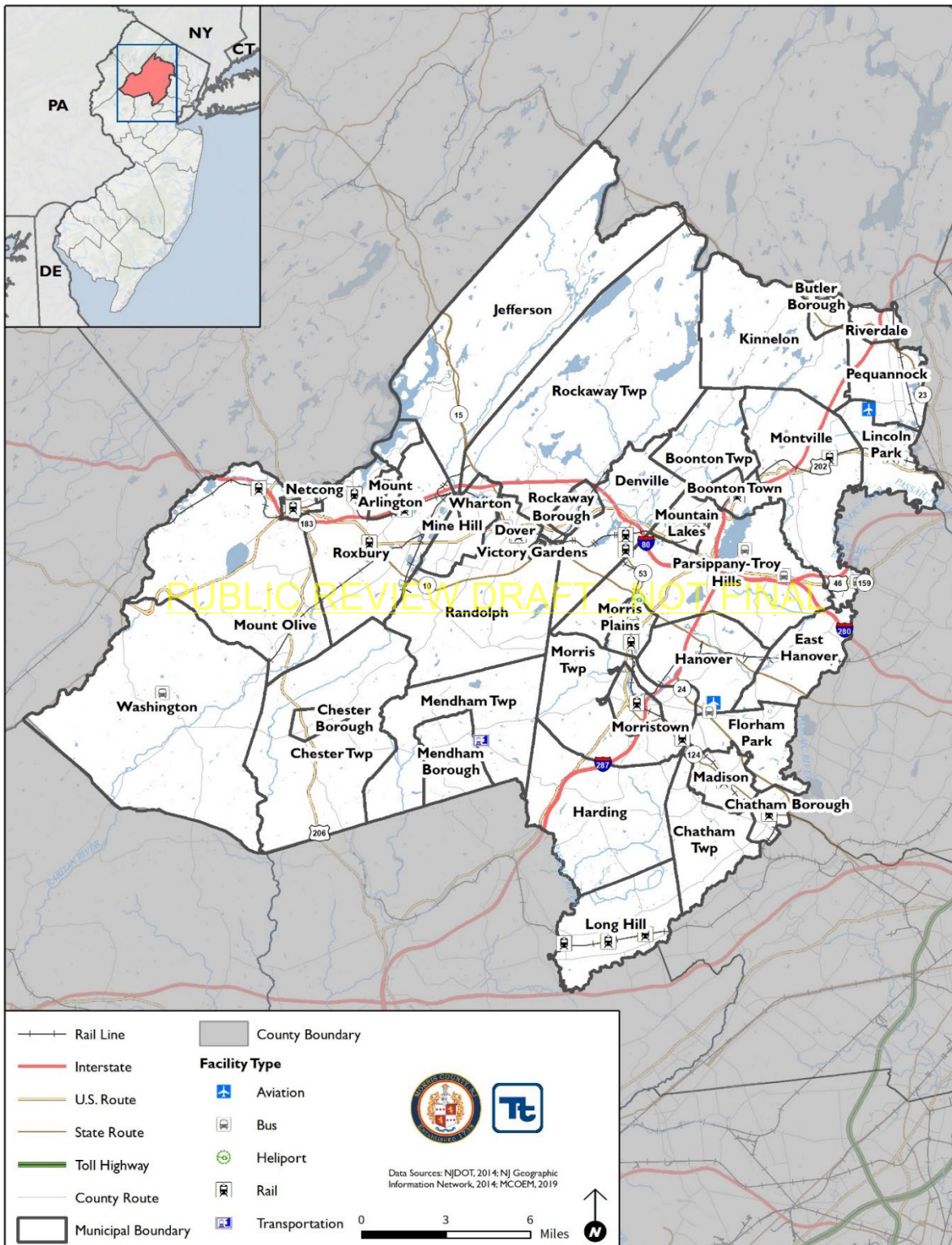
3.10.3.2 SUBSTANCES IN TRANSIT

Incidents involving hazardous substances in transit can occur anywhere in Morris County. Major highways in the County over which hazardous materials are transported daily include Interstates 80, 280 and 287; U.S. Highways 46, 202, and 206; and State Highways 10, 23, and 53. Figure 41 shows the major transportation routes in the County.

Hazardous substances incidents may also occur along railways in Morris County. The NJDOT has a vital interest in preserving and improving the rail freight part of its transportation network. Rail shipments allow cost-effective movement of goods with less stress on the State's highway system. Major commodities shipped by rail entail petrochemicals, construction materials, food products, raw materials, and finished goods for manufacturers. Of concern for this hazard are rail cars carrying hazardous substances. An accident or release could pose a public safety hazard to the community.



Figure 41. Major Transportation Routes in Morris County

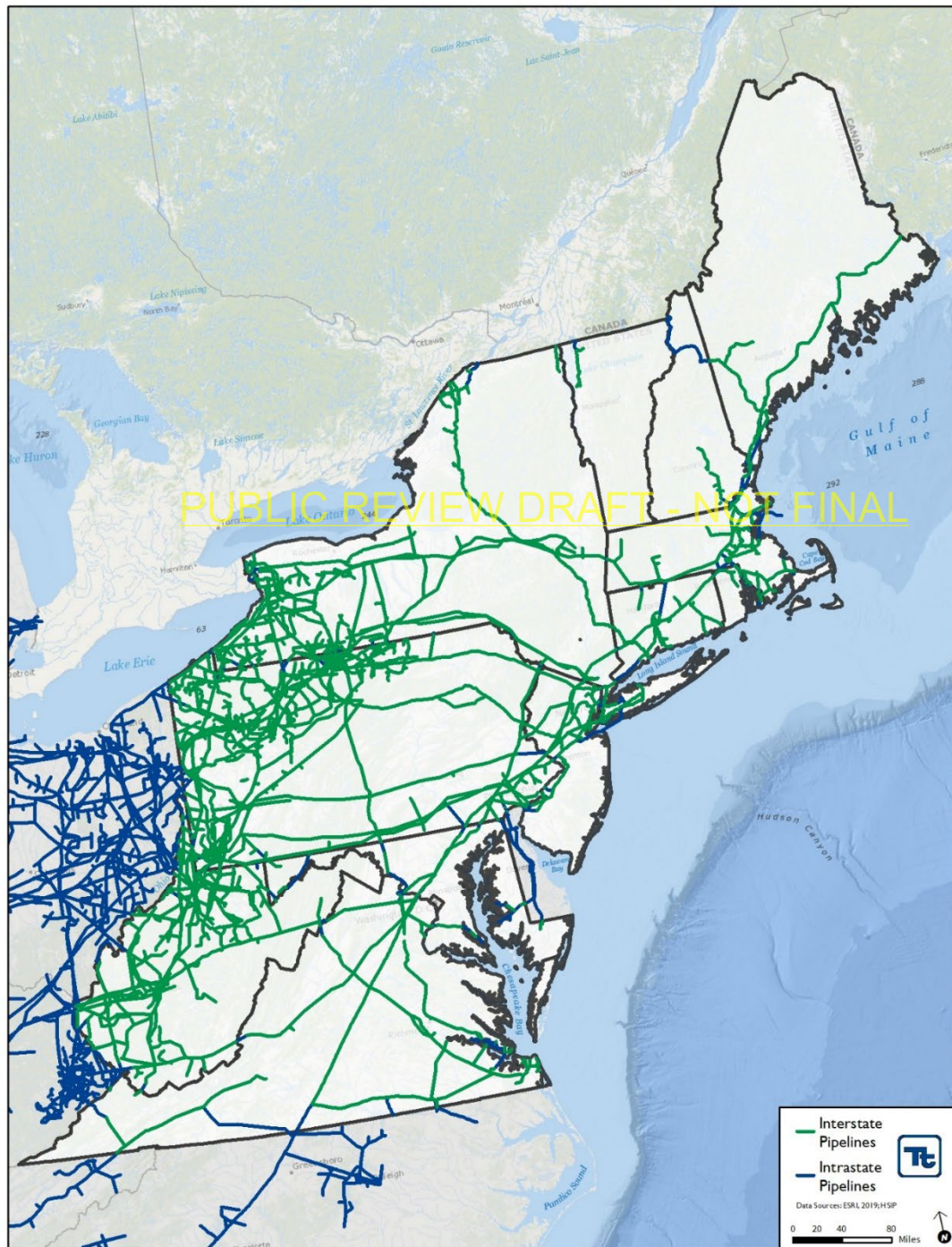


Source: Morris County 2020 HMP



Hazardous substances can also be transported via pipeline across the State. New Jersey has an extensive network of natural gas and petroleum pipelines. Several of the petroleum pipelines originate in the Gulf Coast region (Colonial Pipeline and Buckeye Pipeline). Figure 42 shows the extent and locations of pipelines throughout the northeastern United States.

Figure 42. Interstate National Gas Pipelines in the Northeast



Source: Morris County HMP 2020



3.10.4 EXTENT

The extent of a hazardous substance release will depend on whether it is from a fixed or mobile source, the size of impact, the toxicity and properties of the substance, duration of the release, and the environmental conditions (for example, wind and precipitation, terrain, etc.).

Hazardous substance releases can contaminate air, water, and soils. Dispersion can take place rapidly when the hazardous substance is transported by water and wind. While often accidental, releases can occur as a result of human carelessness, intentional acts, or natural hazards. When caused by natural hazards, these incidents are known as secondary events. Hazardous substances can include toxic chemicals, radioactive substances, infectious substances, and hazardous wastes. Such releases can affect nearby populations and contaminate critical or sensitive environmental areas.

With a hazardous substance release, whether accidental or intentional, several potentially exacerbating or mitigating circumstances will affect its severity or impact. Mitigating conditions are precautionary measures taken in advance to reduce the impact of a release on the surrounding environment. Primary and secondary containment or shielding by sheltering-in-place measures protects people and property from the harmful effects of a hazardous substance release. Exacerbating conditions, characteristics that can enhance or magnify the effects of a hazardous substance release, include:

- Weather conditions, which affect how the hazard occurs and develops
- Micro-meteorological effects of buildings and terrain, which alters dispersion of hazardous substances on-compliance with applicable codes (such as building or fire codes)
- Maintenance failures (such as fire protection and containment features), which can substantially increase the damage to the facility itself and to surrounding buildings

3.10.5 PREVIOUS OCCURRENCES

Many sources provided historical information regarding previous occurrences and losses associated with hazardous substance incidents throughout the State of New Jersey and Morris County. With so many sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP.

Between 1954 and 2024, the State of New Jersey was not included in any FEMA declared disasters (DR) or emergencies (EM) related to hazardous substances incidents. According to the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration, between 2020 and 2023, there have been 56 highway accidents involving hazardous material in the County. Between 2020 and 2023, the County had a total of over 165,000 gallons of chemical released on-site and 100,000 gallons released off-site.

3.10.6 PROBABILITY

Predicting future hazardous substance incidents in Morris County is difficult. Incidents can be sudden without any warning or slowly develop. Small spills, both fixed site and in-transit, occur throughout the year and the probability for these events are high. The risk of major incidents in a given year is rare.

3.10.7 CLIMATE CHANGE IMPACTS

Hazardous substance incidents are non-natural incidents; therefore, there are no implications for impacts from climate change.



3.10.8 VULNERABILITY ASSESSMENT

3.10.8.1 IMPACT TO LIFE, HEALTH AND SAFETY

Depending on the type and quantity of chemicals released and the weather conditions, an incident can affect larger areas that cross jurisdictional boundaries. When hazardous substances are released in the air, water or on land they may contaminate the environment and pose greater danger to human health. The general population may be exposed to a hazardous substances release through inhalation, ingestion or dermal exposure. Exposure may be either acute or chronic, depending upon the nature of the substance and extent of release and contamination.

3.10.8.2 IMPACT ON GENERAL BUILDING STOCK

Potential losses to the general building stock caused by a hazardous substance release is difficult to quantify. The degree of damages to the general building stock depends on the scale of the incident. Potential losses may include inaccessibility, loss of service, contamination and/or potential structural and content losses if an explosion occurs. The closure of waterways, railroads, airports and highways as a result of a hazardous substance incident has the potential to impact the ability to deliver goods and services efficiently. Potential impacts may be local, regional, or statewide depending on the magnitude of the event and level of service disruptions.

3.10.8.3 IMPACT ON CRITICAL FACILITIES

Potential losses to critical facilities caused by a hazardous substance release are difficult to quantify. Potential losses may include inaccessibility, loss of service, contamination and/or potential structural and content losses if an explosion occurs.

3.10.8.4 IMPACT ON THE ECONOMY

If a significant hazardous substances incident occurred, not only would life, safety, and building stock be at risk, but the economy of Morris County would be affected as well. A significant incident in an urban area may force businesses to close for an extended period of time because of contamination or direct damage caused by an explosion, if one occurred. The exact impact on the economy is difficult to determine, given the uncertain nature of the size and scope of incidents.

Hazardous substance release incidents have the potential to lead to major transportation route closures in Morris County. If an incident occurred that would require one of the State's major highways to close, the impact on the economy could be significant. Given the scope and importance of New Jersey's transportation routes to the greater northeastern United States, the vulnerability of New Jersey's economy is significant.

3.10.9 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

3.10.9.1 PROJECTED DEVELOPMENT AND POPULATION

Projected changes in population and development could impact the avenues of how hazardous substances are spread. Areas that are more congested or built up near major transportation routes may be more vulnerable to impacts from hazardous substances because the hazardous wastes are carried along these routes.



3.10.9.2 CLIMATE CHANGE

As temperatures change, excessive heat on containers that contain hazardous materials may alter the material properties. In addition, hazardous substances stored at fixed locations in the floodplain may experience an increase in flood events due to the project changes in increased precipitation events; magnitude and frequency.

3.10.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

Overall, the county's vulnerability has not changed, and the entire county will continue to be exposed and vulnerable to hazardous substance releases.

3.11 SEVERE WEATHER

3.11.1 2025 HMP CHANGES

2025 HMP Changes

- All subsections have been updated using best available data.
- Previous occurrences were updated with events that occurred between 2019 and 2023.

3.11.2 PROFILE

The severe weather hazard includes hurricanes, tropical storms, thunderstorms, lightning, hailstorms, windstorms, and tornadoes.

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3.11.2.1 HURRICANES AND TROPICAL STORMS

A tropical cyclone is characterized by a low-pressure center and numerous thunderstorms that produce strong winds, storm surge flooding, and heavy rains that can lead to inland flooding, tornadoes, and rip currents. Tropical depressions, tropical storms, and hurricanes are all considered tropical cyclones. Tropical cyclones strengthen when water evaporated from the ocean is released as the saturated air rises, resulting in condensation of water vapor contained in the moist air. Almost all tropical storms and hurricanes in the Atlantic basin, which includes the Gulf of Mexico and Caribbean Sea, form between June 1 and November 30 (hurricane season), although they can appear at any time.

The National Weather Service (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:

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 (NWS 2013a).

3.11.2.2 THUNDERSTORMS

A thunderstorm is a rain-bearing cloud that also produces lightning (NWS). All thunderstorms are dangerous.

Thunderstorms can lead to landslides, strong winds, tornadoes, hail, lightning, and flash flooding. Flash flooding is responsible for more fatalities – more than 140 annually – than any other thunderstorm-associated hazard. Roads may become impassable from flooding, downed trees or power lines, or a landslide. Downed power lines can lead to loss of utility services, such as water, phone, and electricity. During the summer, thunderstorms are responsible for most of the rainfall.

3.11.2.3 LIGHTNING

Lightning is a bright flash of electrical energy produced by a thunderstorm. All thunderstorms produce lightning and are very dangerous. Lightning ranks as one of the top weather killers in the U.S., where an average of 300 people are injured and 80 are killed each year. Lightning can occur anywhere there is a thunderstorm, often strikes outside the heavy rain in a thunderstorm, and may occur as far as 10 miles away from any rainfall.

3.11.2.4 HAILSTORMS

Hail forms inside a thunderstorm or other storms with 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. Water droplets freeze when temperatures reach 32 degrees Fahrenheit (°F) or colder. As the frozen droplet begins to fall, it may thaw as it moves into warmer air toward the bottom of the thunderstorm. However, the droplet may be picked up again by another updraft and carried back into the cold air and refreeze. With each trip above and below the freezing level, the frozen droplet adds another layer of ice. The frozen droplet, with many layers of ice, falls to the ground as hail. Most hail is small and typically less than two inches in diameter.

3.11.2.5 WINDSTORMS

Wind begins with differences in air pressures and occurs through rough horizontal 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, nor'easters, hurricanes, and tropical storms.

3.11.2.6 TORNADES

A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 250 miles per hour (mph). Damage paths can be greater than one mile wide and 50 miles long. Tornadoes develop from either a severe thunderstorm or hurricane as cool air rapidly overrides a layer of warm air. Tornadoes move at speeds between 30 and 125 mph and can generate combined wind speeds (forward motion and speed of the whirling winds) exceeding 300 mph. Tornadoes can last from several seconds to more than an hour. They are most common in the spring and summer but can occur on any day of the year.



3.11.3 LOCATION

All of Morris County is exposed to the severe weather described in this section.

3.11.4 EXTENT

Different weather patterns related to severe weather have different rating scales.

Hailstones are sized every half inch in diameter and compared to an object of corresponding size. The smallest hailstones are less than .5 inches in diameter and are compared to the size of a pea. The largest hailstones are 10 inches in diameter and are compared to the size of a melon. The most substantial hailstorm documented by NCEI for Morris County took place in the northwestern region, featuring hailstones with a diameter of 2.75 inches, equivalent to the size of a walnut.

Wind is measured against a few different scales, including the Saffir-Simpson wind scale and the Beaufort wind scale. The highest wind gust recorded by the NCEI in Morris County occurred on May 20, 1963 registering at a speed of 80.6 mph.

Hurricanes are categorized using the Saffir-Simpson Wind Scale based only on a hurricane's maximum sustained wind speed. While all hurricanes produce life-threatening winds, hurricanes rated Category 3 and higher are known as major hurricanes. The scale does not consider other potentially impactful hazards such as storm surge, rainfall flooding, and tornadoes. Table 38 shows hurricane categorization.

Table 38. Hurricane Categorization

Category	Wind Speed (Saffir Simpson)	Damage Description
1	74-95 mph	Very dangerous winds will produce some damage: downed trees, roof damage
2	96-110 mph	Extremely dangerous winds will cause extensive damage
3	111-129 mph	Devastating damage will occur
4	130-156 mph	Catastrophic damage will occur
5	Over 157 mph	Catastrophic damage will occur

Source: National Weather Service

Tornadoes are ranked on the Enhanced Fujita Scale or EF Scale is used to assign a tornado a 'rating' based on estimated wind speeds and related damage as shown in Table 39.

Table 39. Enhanced Fujita (EF) Scale

EF-scale	Class	Wind Speed (mph)	Description
EF-0	Weak	65-85	Gale
EF-1	Weak	86-110	Moderate
EF-2	Strong	111-135	Significant
EF-3	Strong	136-165	Severe
EF-4	Violent	166-200	Devastating
EF-5	Violent	>200	Incredible

Source: National Weather Service

1.1.2 PREVIOUS OCCURRENCES

Between 1954 and 2024, Morris County has been included in 17 declarations for severe storm-related events classified as one or a combination of the following disaster types: severe storm, straight-line winds, tornado, or hurricane. Table 40 lists these events.

**Table 40. Severe Storm-Related FEMA Disaster Declarations**

Declaration	Event Date	Declaration Date	Event Description
DR-1145	October 18-23, 1996	November 19, 1996	Severe Storms & Flooding
EM-3148	September 16-18, 1999	September 17, 1999	Hurricane: Hurricane Floyd Emergency Declarations
DR-1295	September 16-18, 1999	September 18, 1999	Hurricane: Hurricane Floyd Major Disaster Declarations
DR-1337	August 12-21, 2000	August 17, 2000	Severe Storms, Flooding & Mudslides
DR 1588	April 1-3, 2005	April 19, 2005	Severe Storm(s): Severe Storms and Flooding
DR-1694	April 14-20, 2007	April 26, 2007	Severe Storm(s): Severe Storms and Inland and Coastal Flooding
DR-1897	March 12-April 15, 2010	April 2, 2010	Severe Storm(s): Severe Storms and Flooding
EM-3332	August 26-September 5, 2011	August 27, 2011	Hurricane: Hurricane Irene
DR-4021	August 27-September 5, 2011	August 31, 2011	Hurricane: Hurricane Irene
DR-4048	October 29, 2011	November 30, 2011	Severe Storm
EM-3354	October 26-November 8, 2012	October 28, 2012	Hurricane: Hurricane Sandy
DR-4086	October 26-November 8, 2012	October 31, 2012	Hurricane: Hurricane Sandy
DR-4574	August 4, 2020	December 11, 2020	Tropical Storm Isaias Major Disaster Declaration
EM-3573	September 1-September 3, 2021	September 2, 2021	Hurricane: Remnants of Hurricane Ida Emergency Declaration
DR-4614	September 1-September 3, 2021	September 5, 2021	Hurricane: Remnants of Hurricane Ida Major Disaster Declaration

Source: FEMA 2023

3.11.5 PROBABILITY

Morris County is expected to continue experiencing direct and indirect impacts of severe weather annually. These storms may also induce secondary hazards such as flooding and utility failure. Since 1861, 33 tropical storms or cyclones have come within 50 miles of Morris County. Based on these statistics, Morris County can expect the impacts of a nearby hurricane or tropical storm every 16 years.

3.11.6 CLIMATE CHANGE IMPACTS

New Jersey has become wetter over the past century. Northern New Jersey's 1971-2000 precipitation average was over five inches (12%) greater than the average from 1895-1970 (Sustainable Jersey Climate Change Adaptation Task Force [CATF] 2011). The heaviest 1% of daily rainfalls have increased by approximately 70% between 1958 and 2011 in the Northeast (Horton et al. 2015). Average annual precipitation is projected to increase in the region by 4 to 11% by the 2050s and 5 to 13-percent by the 2080s, according to the New York City Panel on Climate Change (NPCC).



As the climate changes, temperatures and the amount of moisture in the air will both increase, thus leading to an increase in the severity of thunderstorms which can lead to derechos and tornadoes. Studies have shown that an increase in greenhouse gases in the atmosphere would significantly increase the number of days that severe thunderstorms occur in the southern and eastern United States.

3.11.7 VULNERABILITY ASSESSMENT

3.11.7.1 IMPACT TO LIFE, HEALTH, AND SAFETY

The impact of severe weather on life, health and safety is dependent upon several factors including the severity of the event and whether adequate warning time was provided to residents. The entire population of Morris County is exposed to this hazard.

Lightning can be responsible for deaths, injuries, and property damage. Lightning-based deaths and injuries typically involve heart damage, inflated lungs, or brain damage, as well as loss of consciousness, amnesia, paralysis, and burns, depending on the severity of the strike. Additionally, most people struck by lightning survive, although they may have severe burns and internal damage. People located outdoors (e.g., recreational activities and farming) are considered most vulnerable to hailstorms, thunderstorms, and tornadoes because there is little to no warning, and shelter might not be available. Moving to a lower risk location will decrease a person's vulnerability.

As a result of severe storm events, residents can be displaced or require temporary to long-term sheltering. The HAZUS-MH results for the 100-year and 500-year MRP hurricane wind events show that no households will be displaced, and no persons will need to seek shelter. However, downed trees, damaged buildings, and debris carried by high winds from hurricanes, tropical storms, or tornadoes can lead to injury or loss of life. Socially vulnerable populations are most susceptible, based on several factors, including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing.

Economically disadvantaged populations are more vulnerable because they often evaluate evacuation needs and make decisions based on the economic impact to their family. Population over the age of 65 (86,640) is also vulnerable, can physically have difficulty evacuating, and are more likely to seek or need medical attention, which may not be available due to isolation during a storm event

3.11.7.2 IMPACT ON GENERAL BUILDING STOCK

Damage to buildings is dependent upon several factors, including wind speed, storm duration, and path of the storm track. Building construction also plays a major role in the extent of damage resulting from a storm. 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.

To better understand these risks, HAZUS-MH v4.2 was used to estimate the expected wind-related building damages. The analysis shows that the annualized losses caused by hurricane wind damage for Morris County is \$1.7 million. Annualized losses combine estimated losses associated with hurricane wind events for six return periods: 10-, 20-, 50-, 100-, 200-, 500-, and 1,000-year. Table 41 summarizes the definition of the damage categories. Specific types of wind damages are also summarized in HAZUS-MH v4.2 at the following wind damage categories: no damage/very minor damage, minor damage, moderate damage, severe damage, and total destruction.



Table 41. Damage Category Descriptions

Qualitative Damage Description	Roof Cover Failure	Window Door Failures	Roof Deck	Missile Impacts on Walls	Roof Structure Failure	Wall Structure Failure
No Damage or Very Minor Damage Little or no visible damage from the outside. No broken windows, or failed roof deck. Minimal loss of roof over, with no or very limited water penetration.	≤2%	No	No	No	No	No
Minor Damage Maximum of one broken window, door or garage 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: HAZUS-MH Hurricane Technical Manual

Table 42 shows that there is an estimated loss of \$34 million and \$200 million for building stock in Morris County for the 100-year event and 500-year event, respectively. A majority of these losses are for residential structures.

Table 42. Estimated Building Value Damages by the 100-Year and 500-Year MRP Hurricane-Related Winds

Municipality	Estimated Total Damages*			Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Town of Boonton	\$21,320	\$289,316	\$1,885,891	\$250,976	\$1,807,181	\$11,030	\$23,475
Township of Boonton	\$17,847	\$265,215	\$1,901,377	\$250,402	\$1,845,758	\$5,532	\$16,585
Borough of Butler	\$23,556	\$325,905	\$2,145,547	\$294,113	\$2,078,108	\$12,757	\$29,369



Municipality	Estimated Total Damages*			Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Chatham Borough	\$43,308	\$531,113	\$2,423,318	\$501,510	\$2,364,113	\$14,268	\$28,536
Chatham Township	\$58,837	\$692,144	\$3,825,302	\$670,804	\$3,780,156	\$5,553	\$11,243
Chester Borough	\$5,056	\$170,820	\$1,012,529	\$150,446	\$894,909	\$15,641	\$89,613
Chester Township	\$31,682	\$1,040,181	\$6,021,590	\$1,009,552	\$5,748,764	\$6,741	\$33,255
Denville Township	\$56,323	\$1,209,275	\$6,699,314	\$1,112,349	\$6,433,397	\$27,000	\$84,339
Town of Dover	\$23,850	\$648,924	\$3,780,186	\$580,748	\$3,504,050	\$23,747	\$101,261
Township of East Hanover	\$76,369	\$1,000,830	\$4,858,030	\$863,766	\$4,569,358	\$71,259	\$157,061
Borough of Florham Park	\$61,312	\$808,636	\$3,981,205	\$715,254	\$3,790,223	\$41,236	\$86,426
Township of Hanover	\$65,824	\$992,102	\$5,221,370	\$813,382	\$4,850,441	\$48,714	\$109,845
Township of Harding	\$33,319	\$553,839	\$2,853,318	\$542,019	\$2,785,282	\$5,376	\$12,363
Township of Jefferson	\$56,923	\$1,697,501	\$11,377,823	\$1,640,721	\$11,129,895	\$22,339	\$104,920
Borough of Kinnelon	\$43,544	\$601,242	\$4,417,059	\$582,151	\$4,374,098	\$6,371	\$13,852
Borough of Lincoln Park	\$41,395	\$407,992	\$2,586,313	\$364,202	\$2,490,959	\$8,750	\$17,575
Township of Long Hill	\$46,064	\$768,933	\$3,534,721	\$730,694	\$3,456,580	\$14,600	\$29,256
Borough of Madison	\$54,722	\$650,791	\$3,522,953	\$593,423	\$3,407,667	\$22,283	\$45,117
Borough of Mendham	\$21,718	\$546,883	\$3,044,778	\$526,961	\$2,935,099	\$7,786	\$31,959
Township of Mendham	\$27,893	\$656,750	\$3,950,545	\$646,114	\$3,858,213	\$1,400	\$4,863
Township of Mine Hill	\$8,573	\$244,507	\$1,650,993	\$231,406	\$1,587,612	\$3,935	\$21,237
Township of Montville	\$107,081	\$1,136,979	\$7,884,694	\$1,020,331	\$7,641,557	\$19,449	\$41,085
Township of Morris	\$82,842	\$1,441,351	\$8,259,568	\$1,324,207	\$7,970,553	\$40,400	\$86,417
Borough of Morris Plains	\$21,127	\$404,347	\$2,168,112	\$360,735	\$2,058,765	\$16,740	\$52,456
Town of Morristown	\$35,752	\$584,535	\$3,130,215	\$504,391	\$2,912,942	\$41,632	\$129,031
Borough of Mount Arlington	\$11,425	\$376,504	\$2,687,270	\$358,824	\$2,582,602	\$4,258	\$29,280



Municipality	Estimated Total Damages*			Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Township of Mount Olive	\$58,638	\$2,524,101	\$15,382,022	\$2,348,206	\$14,242,473	\$32,718	\$217,329
Borough of Mountain Lakes	\$18,587	\$290,372	\$1,823,888	\$270,042	\$1,779,851	\$7,979	\$18,252
Netcong Borough	\$7,604	\$324,050	\$1,998,030	\$310,079	\$1,894,445	\$5,722	\$45,921
Township of Parsippany-Troy Hills	\$155,051	\$2,345,617	\$13,187,086	\$2,041,477	\$12,490,565	\$139,741	\$338,885
Township of Pequannock	\$76,141	\$832,154	\$5,029,598	\$762,084	\$4,847,481	\$31,317	\$62,690
Township of Randolph	\$74,162	\$1,964,780	\$11,948,734	\$1,838,588	\$11,452,045	\$50,078	\$239,004
Borough of Riverdale	\$13,343	\$165,906	\$970,896	\$127,779	\$889,826	\$18,176	\$41,092
Borough of Rockaway	\$17,814	\$410,675	\$2,376,893	\$369,126	\$2,247,793	\$21,268	\$66,330
Township of Rockaway	\$62,790	\$1,483,600	\$9,302,555	\$1,290,119	\$8,669,450	\$49,155	\$196,493
Township of Roxbury	\$67,664	\$2,535,761	\$15,138,768	\$2,408,763	\$14,411,006	\$60,913	\$358,689
Borough of Victory Gardens	\$1,371	\$27,593	\$203,666	\$23,771	\$191,453	\$648	\$2,591
Township of Washington	\$60,154	\$2,775,170	\$15,462,040	\$2,710,812	\$14,470,817	\$11,998	\$89,600
Borough of Wharton	\$14,311	\$431,896	\$2,354,198	\$383,711	\$2,160,799	\$10,110	\$46,143
Morris County (Total)	\$1,705,291	\$34,158,287	\$200,002,398	\$31,524,036	\$190,606,284	\$938,617	\$3,113,437

Source: HAZUS-MH Hurricane Technical Manual

Table 43. Estimated Building Value Damages by the 100-Year and 500-Year MRP Hurricane-Related Winds

Municipality	Estimated Total Damages*			Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Town of Boonton	\$21,320	\$289,316	\$1,885,891	\$250,976	\$1,807,181	\$11,030	\$23,475
Township of Boonton	\$17,847	\$265,215	\$1,901,377	\$250,402	\$1,845,758	\$5,532	\$16,585
Borough of Butler	\$23,556	\$325,905	\$2,145,547	\$294,113	\$2,078,108	\$12,757	\$29,369
Chatham Borough	\$43,308	\$531,113	\$2,423,318	\$501,510	\$2,364,113	\$14,268	\$28,536
Chatham Township	\$58,837	\$692,144	\$3,825,302	\$670,804	\$3,780,156	\$5,553	\$11,243
Chester Borough	\$5,056	\$170,820	\$1,012,529	\$150,446	\$894,909	\$15,641	\$89,613



Municipality	Estimated Total Damages*			Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Chester Township	\$31,682	\$1,040,181	\$6,021,590	\$1,009,552	\$5,748,764	\$6,741	\$33,255
Denville Township	\$56,323	\$1,209,275	\$6,699,314	\$1,112,349	\$6,433,397	\$27,000	\$84,339
Town of Dover	\$23,850	\$648,924	\$3,780,186	\$580,748	\$3,504,050	\$23,747	\$101,261
Township of East Hanover	\$76,369	\$1,000,830	\$4,858,030	\$863,766	\$4,569,358	\$71,259	\$157,061
Borough of Florham Park	\$61,312	\$808,636	\$3,981,205	\$715,254	\$3,790,223	\$41,236	\$86,426
Township of Hanover	\$65,824	\$992,102	\$5,221,370	\$813,382	\$4,850,441	\$48,714	\$109,845
Township of Harding	\$33,319	\$553,839	\$2,853,318	\$542,019	\$2,785,282	\$5,376	\$12,363
Township of Jefferson	\$56,923	\$1,697,501	\$11,377,823	\$1,640,721	\$11,129,895	\$22,339	\$104,920
Borough of Kinnelon	\$43,544	\$601,242	\$4,417,059	\$582,151	\$4,374,098	\$6,371	\$13,852
Borough of Lincoln Park	\$41,395	\$407,992	\$2,586,313	\$364,202	\$2,490,959	\$8,750	\$17,575
Township of Long Hill	\$46,064	\$768,933	\$3,534,721	\$730,694	\$3,456,580	\$14,600	\$29,256
Borough of Madison	\$54,722	\$650,791	\$3,522,953	\$593,423	\$3,407,667	\$22,283	\$45,117
Borough of Mendham	\$21,718	\$546,883	\$3,044,778	\$526,961	\$2,935,099	\$7,786	\$31,959
Township of Mendham	\$27,893	\$656,750	\$3,950,545	\$646,114	\$3,858,213	\$1,400	\$4,863
Township of Mine Hill	\$8,573	\$244,507	\$1,650,993	\$231,406	\$1,587,612	\$3,935	\$21,237
Township of Montville	\$107,081	\$1,136,979	\$7,884,694	\$1,020,331	\$7,641,557	\$19,449	\$41,085
Township of Morris	\$82,842	\$1,441,351	\$8,259,568	\$1,324,207	\$7,970,553	\$40,400	\$86,417
Borough of Morris Plains	\$21,127	\$404,347	\$2,168,112	\$360,735	\$2,058,765	\$16,740	\$52,456
Town of Morristown	\$35,752	\$584,535	\$3,130,215	\$504,391	\$2,912,942	\$41,632	\$129,031
Borough of Mount Arlington	\$11,425	\$376,504	\$2,687,270	\$358,824	\$2,582,602	\$4,258	\$29,280
Township of Mount Olive	\$58,638	\$2,524,101	\$15,382,022	\$2,348,206	\$14,242,473	\$32,718	\$217,329
Borough of Mountain Lakes	\$18,587	\$290,372	\$1,823,888	\$270,042	\$1,779,851	\$7,979	\$18,252
Netcong Borough	\$7,604	\$324,050	\$1,998,030	\$310,079	\$1,894,445	\$5,722	\$45,921
Township of Parsippany-Troy Hills	\$155,051	\$2,345,617	\$13,187,086	\$2,041,477	\$12,490,565	\$139,741	\$338,885
Township of Pequannock	\$76,141	\$832,154	\$5,029,598	\$762,084	\$4,847,481	\$31,317	\$62,690



Municipality	Estimated Total Damages*			Estimated Residential Damage		Estimated Commercial Damage	
	Annualized Loss	100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
Township of Randolph	\$74,162	\$1,964,780	\$11,948,734	\$1,838,588	\$11,452,045	\$50,078	\$239,004
Borough of Riverdale	\$13,343	\$165,906	\$970,896	\$127,779	\$889,826	\$18,176	\$41,092
Borough of Rockaway	\$17,814	\$410,675	\$2,376,893	\$369,126	\$2,247,793	\$21,268	\$66,330
Township of Rockaway	\$62,790	\$1,483,600	\$9,302,555	\$1,290,119	\$8,669,450	\$49,155	\$196,493
Township of Roxbury	\$67,664	\$2,535,761	\$15,138,768	\$2,408,763	\$14,411,006	\$60,913	\$358,689
Borough of Victory Gardens	\$1,371	\$27,593	\$203,666	\$23,771	\$191,453	\$648	\$2,591
Township of Washington	\$60,154	\$2,775,170	\$15,462,040	\$2,710,812	\$14,470,817	\$11,998	\$89,600
Borough of Wharton	\$14,311	\$431,896	\$2,354,198	\$383,711	\$2,160,799	\$10,110	\$46,143
Morris County (Total)	\$1,705,291	\$34,158,287	\$200,002,398	\$31,524,036	\$190,606,284	\$938,617	\$3,113,437

Since 1950, the Storm Events Database has recorded over \$10.34 million damages to property in Morris County due to severe weather events including high wind, thunderstorm wind, strong wind, lightning, and hail. High wind events created the greatest value of property damage out of this total (\$4.54 million). Table 44 summarizes severe weather events that have reported property damage in Morris County. It should be noted that there are over 500 severe weather events recorded for Morris County, but only 53 have recorded property damages. This discrepancy suggests that a significant number of severe weather incidents may not have been associated with reported property damages. Therefore, the actual value of losses could potentially be much higher than what is currently reflected in the recorded data.

Table 44. Historical Severe Weather Incidents in Morris County with Property Damages

Type of Event	Number of Times Event Occurred (1950 – 2023)	Total Value of Losses
Hail	1	\$5,000
High Wind	9	\$4,535,000
Lightning	20	\$1,041,000
Strong Wind	78	\$1,522,000
Thunderstorm Wind	12	\$2,214,000
Tornado	4	\$1,025,000
Total	124	\$10,342,000

Source: NOAA Storm Events Database

3.11.7.3 IMPACT ON 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 the safety of its citizens 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.

3.11.7.4 IMPACT ON THE ECONOMY

Severe storm events can have short- and long-lasting impacts on the economy. When a business is closed during storm recovery, there is lost economic activity in the form of day-to-day business and wages to employees. Overall, economic impacts include the loss of business function (e.g., tourism, recreation), damage to inventory, relocation costs, wage loss and rental loss due to the repair/replacement of buildings. Hurricane Sandy, for example, resulted in the loss of millions of dollars in wages and economic activity in the State of New Jersey, including Morris County

Impacts to transportation lifelines affect both short-term (e.g., evacuation activities) and long-term (e.g., day-to-day commuting and goods transport) transportation needs. Utility infrastructure (power lines, gas lines, electrical systems) could suffer damage and impacts can result in the loss of power, which can impact business operations as well as heating or cooling provision to the population.

HAZUS-MH estimates the total economic loss associated with each storm scenario (direct building losses and business interruption losses). Direct building losses are the estimated costs to repair or replace the damage caused to the building. This is reported in the "Impact on General Building Stock" section discussed earlier. Business interruption losses are the losses associated with the inability to operate a business because of the wind damage sustained during the storm or the temporary living expenses for those displaced from their home because of the event.

For the 100-year MRP wind event, HAZUS-MH estimates approximately \$155,199 business interruption losses. For the 500-year MRP wind only event, HAZUS-MH estimates approximately \$13.6 million in business interruption losses for the County, which includes loss of income, relocation costs, rental costs and lost wages, in addition to \$117,982 in inventory losses. Table 45 provides a summary of these losses.

Table 45. Approximate Estimated Business Interruption Losses for Morris County for Mean Return Period Hurricane Wind Incidents

Mean Return Period (MRP)	Inventory Loss	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
100-year MRP	\$0	\$92,429	\$0	\$0	\$22,770	\$115,199
500-year MRP	\$117,982	\$8,643,483	\$92	\$2,531	\$4,883,954	\$13,648,043

Source: HAZUS-MH v4.2

Debris management can be costly and may also impact the local economy. HAZUS-MH estimates the amount of building and tree debris that may be produced as result of the 100- and 500-year MRP wind events. Because the estimated debris production does not include flooding, this is likely a conservative estimate and may be higher if multiple impacts occur. According to the HAZUS-MH Hurricane User Manual, estimates of weight and volume of eligible tree debris consist of downed trees that would likely be collected and disposed at public expense. Refer to the User Manual for additional details regarding these estimates. Table 46 summarizes debris production estimates for the 100- and 500-year MRP wind events.



Table 46. Debris Production for 100- and 500-Year Mean Return Period Hurricane-Related Winds

Municipality	Brick and Wood (tons)		Concrete and Steel (tons)		Tree (tons)		Eligible Tree Volume (cubic yards)	
	100- Year	500- Year	100- Year	500- Year	100- Year	500- Year	100- Year	500- Year
Town of Boonton	0	0	120	0	13	204	199	1,595
Township of Boonton	0	0	97	0	100	1,144	272	3,026
Borough of Butler	0	0	88	0	64	306	673	2,710
Chatham Borough	1	0	91	0	71	298	627	2,231
Chatham Township	1	0	156	0	259	1,211	698	2,807
Chester Borough	5	0	78	0	43	474	151	1,919
Chester Township	22	0	405	0	537	9,570	545	10,557
Denville Township	0	0	335	0	228	2,526	1,263	11,598
Town of Dover	11	0	286	0	86	723	780	5,110
Township of East Hanover	2	0	212	0	382	1,376	1,870	6,636
Borough of Florham Park	0	0	211	0	337	1,265	1,559	5,585
Township of Hanover	2	0	276	0	525	1,999	2,125	8,099
Township of Harding	1	0	136	0	403	2,726	446	3,037
Township of Jefferson	16	0	646	0	634	15,608	2,217	29,245
Borough of Kinnelon	0	0	213	0	101	1,752	346	3,537
Borough of Lincoln Park	0	0	97	0	265	919	1,139	3,556
Township of Long Hill	0	0	131	0	354	1,751	953	4,465
Borough of Madison	0	0	182	0	75	342	599	2,599
Borough of Mendham	10	0	184	0	137	1,622	479	4,820
Township of Mendham	11	0	245	0	125	4,854	311	7,163
Township of Mine Hill	4	0	108	0	59	904	290	3,557
Township of Montville	3	0	394	0	355	1,604	1,774	7,201
Township of Morris	1	0	451	0	230	2,562	1,078	11,008
Borough of Morris Plains	1	0	128	0	53	380	469	3,024
Town of Morristown	4	0	248	0	91	526	772	4,267
Borough of Mount Arlington	7	0	221	0	23	690	230	4,207
Township of Mount Olive	68	0	1,271	0	993	11,569	2,846	26,313
Borough of Mountain Lakes	0	0	78	0	42	410	251	2,124
Netcong Borough	12	0	172	0	61	332	517	2,600
Township of Parsippany-Troy Hills	10	0	785	0	671	3,890	3,764	18,853
Township of Pequannock	2	0	193	0	333	1,030	2,060	6,147
Township of Randolph	50	0	784	0	540	6,609	1,520	22,425
Borough of Riverdale	1	0	46	0	67	296	564	2,123
Borough of Rockaway	1	0	145	0	71	514	580	3,877
Township of Rockaway	0	0	599	0	431	12,302	1,244	21,391



Municipality	Brick and Wood (tons)		Concrete and Steel (tons)		Tree (tons)		Eligible Tree Volume (cubic yards)	
	100- Year	500- Year	100- Year	500- Year	100- Year	500- Year	100- Year	500- Year
Township of Roxbury	35	0	942	0	871	7,896	4,100	27,425
Borough of Victory Gardens	0	0	22	0	1	31	11	288
Township of Washington	60	0	1,045	0	1,367	16,148	2,305	23,325
Borough of Wharton	11	0	156	0	123	685	935	4,297
Morris County (Total)	352	0	11,977	0	11,121	119,048	42,562	314,746

Source: HAZUS-MH v4.2

According to the State of New Jersey 2019 HMP, hail alone causes \$2 billion worth of crop and property damage on an annual basis in the United States. Even though New Jersey is estimated to experience an average of two hailstorm events per year, the outcome of these events could be detrimental depending on the cost it would take for the community to recover from the damages. Likewise, these costs can add up for other severe weather events such as tornados destroying key infrastructure and level local businesses, or extreme rain events flooding out shopping centers or transportation hubs. Several severe weather events have historically caused tens of thousands to hundreds of thousands of dollars' worth of damage.

3.11.7.5 IMPACT ON THE ENVIRONMENT

The impact of severe weather events on the environment varies, but researchers are finding that the long-term impacts of more severe weather can be destructive to the natural and local environment. National organizations such as USGS and NOAA have been studying and monitoring the impacts of extreme weather phenomena as it impacts long term climate change, streamflow, river levels, reservoir elevations, rainfall, floods, landslides, erosion, etc. For example, severe weather that creates longer periods of rainfall can erode natural banks along waterways and degrade soil stability for terrestrial species. Tornadoes can tear apart habitats causing fragmentation across ecosystems. Researchers also believe that a greater number of diseases will spread across ecosystems because of impacts that severe weather and climate change will have on water supplies. Overall, as the physical environment becomes more altered, species will begin to contract or migrate in response, which may cause additional stressors to the entire ecosystem within Morris County.

3.11.8 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

Understanding future changes that affect vulnerability in the County can assist in planning for future development and ensure establishment of appropriate mitigation, planning, and preparedness measures. Morris County considered the following factors to examine potential conditions that may affect hazard vulnerability:

- Potential or projected development.
- Projected changes in population.
- Other identified conditions as relevant and appropriate, including the impacts of climate change.

3.11.8.1 PROJECTED DEVELOPMENT

Any areas of growth could be potentially impacted by the severe storm hazard because the entire County is exposed and vulnerable. However, due to increased standards and codes, new development may be less vulnerable to the severe storm hazard compared with the aging building stock in the County.



3.11.8.2 PROJECTED CHANGES IN POPULATION

The anticipated growth in Morris County population may eventually be influenced by severe weather events as these occurrences can impact infrastructure, housing, and overall community resilience. The aftermath of severe weather might lead to disruptions in economic activities, potential property damage, and displacement, which could, in turn, affect population trends.

3.11.8.3 CLIMATE CHANGE

As discussed earlier, studies project that the State of New Jersey will see an increase in average annual temperatures and precipitation. More frequent and severe storms will increase the County's vulnerability to each of the identified severe storm hazards.

3.11.9 VULNERABILITY CHANGE SINCE THE 2020 HMP

Overall, the County's vulnerability has not changed, and the entire County will continue to be exposed and vulnerable to severe weather events.

3.12 SEVERE WINTER STORM

3.12.1 2025 HMP CHANGES

- All subsections have been updated using best available data.
- Previous occurrences were updated with events that occurred between 2019 and 2023.

3.12.2 PROFILE

Severe winter weather is defined as a storm that brings significant snowfall, ice, and/or freezing rain. Blizzards are storms with considerable falling and/or blowing snow combined with sustained winds or frequent wind gusts of 35 mph or greater that frequently reduce visibility to less than 0.25 mile for at least three hours. In Morris County, winter storms include blizzards, snowstorms, Nor'Easters and ice storms. Extreme cold temperatures and wind chills are also associated with winter storms, which is discussed further in Section 1.8.

Some winter storms are large enough to immobilize an entire region while others may only affect a single community. Winter storms are typically accompanied by low temperatures, high winds, freezing rain or sleet, and heavy snowfall. The aftermath of a winter storm can have an impact on a community or region for days, weeks, or even months; potentially causing cold temperatures, flooding, storm surge, closed and/or blocked roadways, downed utility lines, and power outages.

3.12.2.1 HEAVY SNOW/BLIZZARD

Snow is precipitation that occurs when temperatures are below the freezing point (32°F), when water vapor in the atmosphere condenses directly into ice without going through the liquid stage. A heavy snowstorm is defined as accumulations of 4 inches or more of snow in a 6-hour period, or 6 inches of snow in a 12-hour period.

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 or below 0.25 mile. These conditions must be predominant over a 3-hour period to be considered a blizzard. The hazard is created by the combination of snow, wind, and low visibility and significantly increases with temperatures 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 miles.

3.12.2.2 FREEZING RAIN/SLEET/ICE STORMS

Freezing rain occurs when rain falls into areas that are below freezing. For this to occur, ground-level temperatures must be colder than temperatures aloft. Freezing rain can also occur when the air temperature is slightly above freezing, but the surface that the rain lands upon is still below freezing from prior cold air temperatures.

Sleet is made up of drops of rain that freeze into ice as they fall. They are usually smaller than 0.30 inch in diameter. A sleet storm involves significant accumulations of solid pellets, which form from the freezing of raindrops or partially melted snowflakes, causing slippery surfaces and posing a hazard to pedestrians and motorists.

An ice storm is an event caused by damaging accumulations of ice during freezing rain events. An ice storm involves significant accumulation of rain or drizzle freezing on objects (trees, power lines, roadways, etc.) as it strikes them, causing slippery surfaces and damage from sheer weight of ice accumulations. Significant ice accumulations are typically 0.25 inch or greater.

3.12.2.3 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 can occur any time of the year but are strongest and most frequent between September and April, bringing winter weather and the potential for flooding. 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 of the United States.

3.12.3 LOCATION

The trajectory of the storm center—whether it passes close to the New Jersey coast or at a distance—largely determines both the intensity and the duration of the snowfall over the state. Winter storms tend to have the heaviest snowfall within a 150-mile wide swath to the northwest of what are generally southwest to northeast moving storms. Depending on whether all or a portion of New Jersey falls within this swath, the trajectory determines which portion of the state (or all of the state) receives the heaviest amount of snow. According to the Office of the New Jersey State Climatologist (ONJSC), Morris County's average seasonal snowfall is 36.54 inches with the lowest snowfall in the southeast and the highest amount in the northwest.

All areas of Morris County are subject to severe winter storms.

3.12.4 EXTENT

The magnitude or severity of a severe winter storm depends on several factors, including a region's climatological susceptibility to snowstorms, snowfall amounts, snowfall rates, wind speeds, temperatures, visibility, storm duration, topography, time of occurrence during the day (for example, weekday versus weekend), and time of season. While sleet accumulation is measured and tracked in a method similar to snow events, the extent or severity of freezing rain or an ice storm requires a different and sometimes more challenging process.

The National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI) 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 Category 1 to 5, which is similar to the Enhanced Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes. RSI is based on the spatial extent of



the storm, the amount of snowfall, and the combination of the extent and snowfall totals with population (based on the 2000 Census). The NCEI has analyzed and assigned RSI values to over 500 storms since 1900. Table 47 summarizes the five RSI ranking categories.

Table 47. Regional Snowfall Index (RSI) Ranking Categories

Category	RSI Value	Description
1	1-3	Notable
2	3-6	Significant
3	6-10	Major
4	10-18	Crippling
5	18.0+	Extreme

Source: NOAA-NCEI 2024

The NWS operates a widespread network of observation systems, such as geostationary satellites, Doppler radars, and automated surface observing systems that feed into the current state-of-the-art numerical computer models to provide a look into future weather, ranging from hours to days. The models are then analyzed by NWS meteorologists who then write and disseminate forecasts. While winter weather is normal during the winter season for Morris County, the NWS uses winter weather watches, warnings, and advisories to help people anticipate what to expect in the days and hours prior to an approaching storm.

- 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 a significant combination of hazardous winter weather 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 for any amount of freezing rain or when 2 to 4 inches of snow (alone or in combination with sleet and freezing rain) is expected to cause a significant inconvenience but not serious enough to warrant a warning.
- NWS may also issue a **blizzard warning** when snow and strong winds combine to produce the potential for blinding snow, deep drifts, and wind chill within the next 12 to 18 hours.

3.12.5 PREVIOUS OCCURRENCES

Between 1954 and 2023 the Federal Emergency Management Agency (FEMA) included Morris County in seven winter storm-related DR or EM declarations classified as one or a combination of the following disaster types: severe winter storm, snowstorm, snow, ice storm, winter storm, and blizzard. Table 48 summarizes winter storm events and FEMA disaster declarations that occurred between 2014 and 2024.

Table 48. Winter Weather Related Disaster (DR) and Emergency (EM) Declarations

Declaration	Event Date	Declaration Date	Event Description
EM-3106	March 13-17, 1993	March 17, 1993	Snow: Severe Blizzard
DR-1088	January 7-12, 1996	January 13, 1996	Snow: Blizzard of 96 (Severe Snow Storm)
EM-3181	February 16-17, 2003	March 20, 2003	Snow: Snow
EM-1954	December 26-27-2010	February 4, 2011	Snow: Severe Winter Storm and Snowstorm
DR-4264	January 22-24, 2016	March 14, 2016	Severe Storm(s): Severe Winter Storm and Snowstorm



Declaration	Event Date	Declaration Date	Event Description
DR-4368	March 6-7, 2018	June 8, 2018	Severe Storm(s): Severe Winter Storm and Snowstorm
DR-4597	January 31, 2021 – February 2, 2021	April 28, 2021	Severe Winter Storm and Snowstorm

Source: FEMA

According to the Storm Events Database as illustrated in Table 49, Morris County has experienced 298 severe winter storm events from 1950 to 2024 with no reported deaths, injuries, or crop damages. The events resulted in \$3.575 million in property damages.

Table 49. Severe Winter Storm Events in Morris County 1950 - 2024

Hazard Type	Number of Occurrences Between 1950 and 2023	Total Fatalities	Total Injuries	Total Property Damage (\$)	Total Crop Damage (\$)
Blizzard	3	0	0	\$1.5M	\$0
Heavy Snow	39	0	0	\$2.0M	\$0
Ice Storm	3	0	0	\$0	\$0
Sleet	5	0	0	\$0	\$0
Winter Storm	63	0	0	\$75K	\$0
Winter Weather	185	0	0	\$0	\$0
Total	298	0	0	\$3.575M	\$0

Source: NOAA-NCEI

1.1.3 PROBABILITY

Morris County is estimated to continue experiencing direct and indirect impacts of severe winter storms annually. Table 50 provides the probability of occurrences of severe winter storm events, based on incidents recorded in the NOAA-NCEI storm events database.

Table 50. Severe Winter Storm Events in Morris County 1950-2024

Hazard Type	Number of Occurrences Between 1950 and 2023	Percent (%) Chance of Event Occurring in Any Given Year
Blizzard	3	4.1
Heavy Snow	39	53.4
Ice Storm	3	4.1
Sleet	5	6.8
Winter Storm	63	84.9
Winter Weather	185	100.0

Source: NOAA-NCEI 2024



3.12.6 CLIMATE CHANGE IMPACTS

In terms of snowfall and ice storms, there is a lack of quantitative data to predict how future climate change will affect this hazard. It is likely that the number of winter weather events may decrease, and the winter weather season may shorten; however, it is also possible that the intensity of winter storms may increase. The exact effect on winter weather is still highly uncertain.

Average annual temperatures have increased by 4°F in New Jersey since 1900, roughly twice the global average. Summer 2022 was the third warmest summer on record in New Jersey. Sea level at Atlantic City rose about 18.2 inches since 1911, more than double the global average. According to NOAA, New Jersey had their warmest January on record in 2023.

Due to the increase in temperature, snow cover and sea ice extent are predicted to likely decrease over the next century and the snow season length is very likely to decrease over North America. However, warming of the lower atmosphere could potentially lead to more ice storms by allowing snow to more frequently melt as it falls and then refreeze near or at surface.

3.12.7 VULNERABILITY ASSESSMENT

3.12.7.1 IMPACT TO LIFE, HEALTH, AND SAFETY

The entire population of Morris County is exposed to severe winter weather events. The homeless and elderly are considered most susceptible to this hazard; the homeless due to their lack of shelter and the elderly due to their increased risk of injuries and death from falls and overexertion or hypothermia from attempts to clear snow and ice.

According to the 2021 ACS 5-Year Population Estimate, 17.8% of the population in Morris County is over 65 years in age. Severe winter storm events can reduce the ability of these populations to access emergency services. Furthermore, the homeless and residents below the poverty level might not have access to housing or their housing could be less able to withstand cold temperatures (e.g., homes with poor insulation and heating supply). Residents with low incomes might not have access to housing or their housing can be less able to withstand cold temperatures (e.g., homes with poor insulation and heating supply). In Morris County, 5.7% of the population has annual incomes below the Census-defined poverty level. Though significantly lower than noted in the 2020 Hazard Mitigation Plan (24.6%), Victory Gardens Borough still has the greatest percent of persons in poverty to its total population (18.8%).

3.12.7.2 IMPACT ON GENERAL BUILDING STOCK

All buildings in Morris County are exposed to the severe winter weather hazard; however, properties in poor condition may be more vulnerable to impacts. In general, structural impacts include damage to roofs and building frames rather than building content. A specific area that is vulnerable to the severe winter storm hazard is the floodplain. Severe winter storms can cause flooding through blockage of streams or through snow melt. Current modeling tools are not available to estimate specific losses for this hazard due to the variety of contributing factors.

3.12.7.3 IMPACT ON CRITICAL FACILITIES

Full functionality of critical facilities such as police, fire and medical facilities is essential for response during and after a severe winter storm event. These critical facility structures are largely constructed of concrete and masonry; therefore, they should only suffer minimal structural damage from severe winter storm 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.

3.12.7.4 IMPACT ON THE ECONOMY

The cost of snow and ice removal and repair of roads from the freeze/thaw process can drain local financial resources. Impacts on the economy also include commuter difficulties into or out of the area for work or school. The loss of power and closure of roads prevent commuters within the County. Most recently for the 2020-2021 winter season, the State of New Jersey Department of Transportation budgeted winter maintenance expenditures at \$127.2 million, which includes costs for salt (217,245 tons), liquid calcium chloride (356,822 gallons), and brine (105,910 gallons).

3.12.7.5 IMPACT ON THE ENVIRONMENT

Severe winter weather can have a major impact on the environment. Not only does winter weather create changes in natural processes, the residual impacts of a community's methods to maintain its infrastructure through winter weather maintenance may also have an impact on the environment. Rain-on-snow events can also exacerbate runoff rates with warming winter weather. Consequentially, these flow rates and excess volumes of water can erode banks, tear apart habitat along the banks and coastline, and disrupt terrestrial plants and animals.

3.12.8 FUTURE CHANGES THAT MAY IMPACT VULNERABILITY

PUBLIC REVIEW DRAFT - NOT FINAL

3.12.8.1 PROJECTED DEVELOPMENT

Any areas of growth could be potentially impacted by the severe winter storm hazard because the entire planning area is exposed and vulnerable. Due to increased standards and codes, new development may be less vulnerable to the severe winter weather hazard compared with the aging building stock in the County.

3.12.8.2 PROJECTED CHANGES IN POPULATION

Morris County's population has been increasing and is projected to continue to increase in coming decades. In addition, the population is aging. As the aging population grows, so too will the number of persons vulnerable to severe winter weather and extreme cold temperatures.

3.12.8.3 CLIMATE CHANGE

As temperatures rise, there is an increased likelihood of more intense and erratic winter weather events, such as heavy snowfall, freezing rain, and powerful winter storms. However, the exact effect on winter weather is still highly uncertain. These changes may pose challenges for infrastructure, transportation, and community resilience in Morris County. The evolving nature of severe winter weather due to climate change also contributes to future vulnerabilities, highlighting the importance of proactive planning and resource allocation to enhance overall preparedness and resilience.

3.12.9 VULNERABILITY CHANGE SINCE THE 2020 HMP

Overall, the County's exposure and vulnerability have not changed, and the entire County will continue to be exposed and vulnerable to severe winter storm events.



3.13 WILDFIRE

3.13.1 2025 HMP UPDATES

- All subsections have been updated using best available data.
- Previous occurrences were updated with events that occurred between 2019 and 2023.
- The vulnerability assessment was conducted using updated population, building and critical facility/lifeline spatial data to determine exposure to the wildfire hazard.

3.13.2 PROFILE

A wildland fire is any nonstructural fire that occurs in forested, semi-forested, or less developed areas. Wildfire may be naturally occurring (lightning), human-caused (carelessness or arson), or prescribed fire, any of which may be destructive and difficult to control. Most frequently, wildland fires in the state of New Jersey are caused by humans.

Wildfires can increase the probability of other natural disasters, specifically floods and mudflows. Large-scale fires can dramatically alter the terrain and ground conditions, making land already devastated by fire susceptible to floods and mudflow. Normally, vegetation absorbs rainfall, reducing runoff. However, wildfires leave the ground charred, barren, and unable to absorb water, thus creating conditions susceptible to 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.

The height of wildland fire season in New Jersey is typically in spring (March through May) and culminates in early May, corresponding with the driest live fuel moisture periods of the year. Although the spring months are the most severe, the summer and fall months may also experience extensive fires in the state. While the spring season is historically the period in which wildfire danger is the highest, wildland fires can occur every month of the year. Drought, snowpack, and local weather conditions can expand the length of the fire season. The early and late shoulders of the fire season usually are associated with human-caused fires. Lightning generally is the cause of most fires in the peak season.

In the state of New Jersey, each year, an average of 1,500 wildfires damage or destroy 7,000 acres of the state's forests. Wildfires not only damage woodlands but threaten homeowners who live within or adjacent to forest environments.

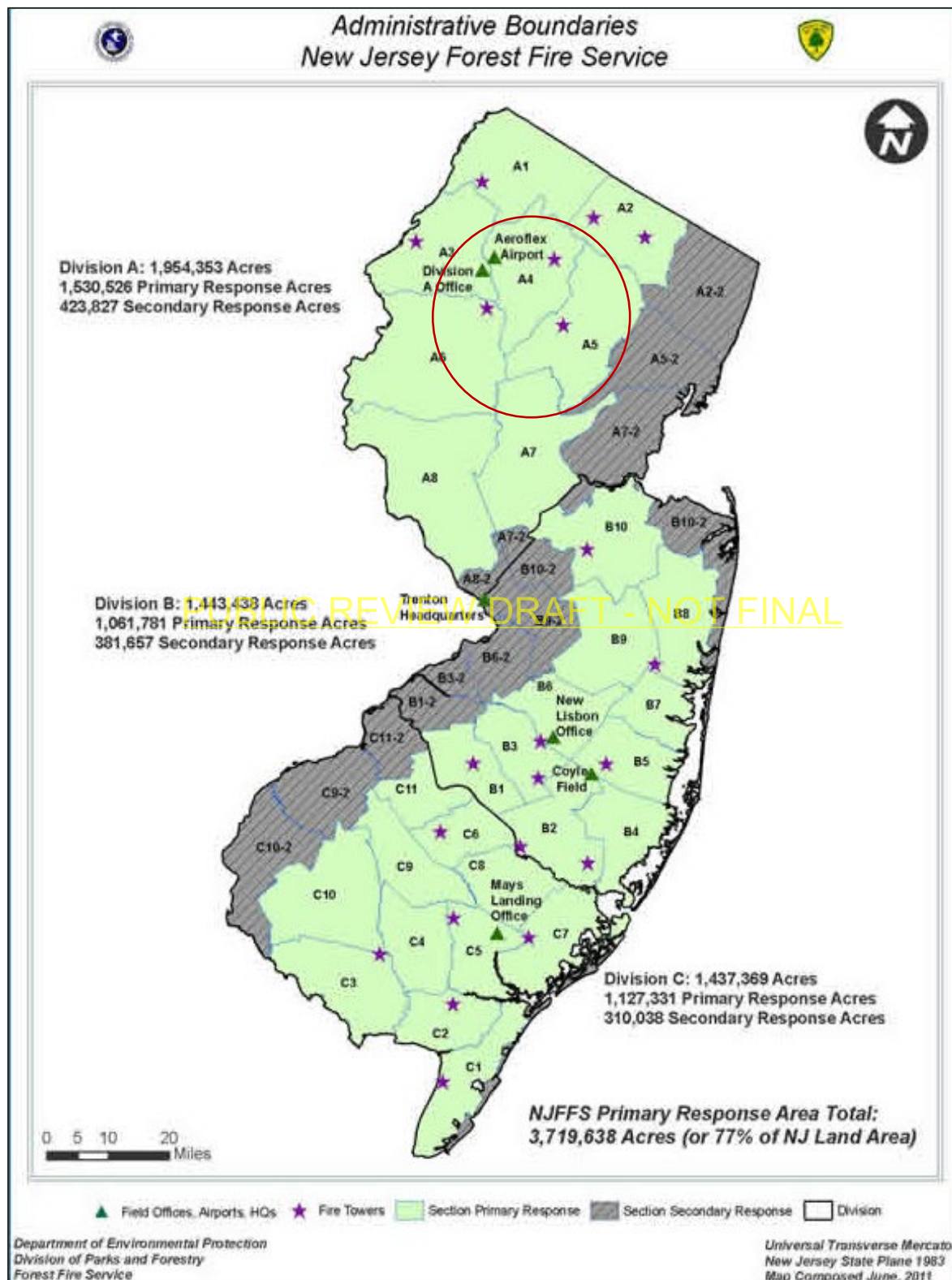
3.13.3 LOCATION

According to the U.S. Fire Administration (USFA), the fire problem in the U.S. varies from region to region. This often is a result of climate, poverty, education, demographics, and other causal factors. Wildfires occur in virtually all of the U.S. In Morris County, wildfires have the potential to occur anywhere in the county.

The New Jersey Forest Fire Service (NJFFS), a division of the New Jersey Department of Environmental Protection (NJDEP), is responsible for protecting the 3.25 million acres of wildland in the State. NJFFS is under the direction of the State fire warden and is headquartered in Trenton. NJFFS divides the State into three regions (Northern, Central, Southern) each totaling about 1,250,000 acres. Morris County is part of Division A (Northern NJ), as illustrated in Figure 43.



Figure 43. NJ Forest Service Administrative Boundaries



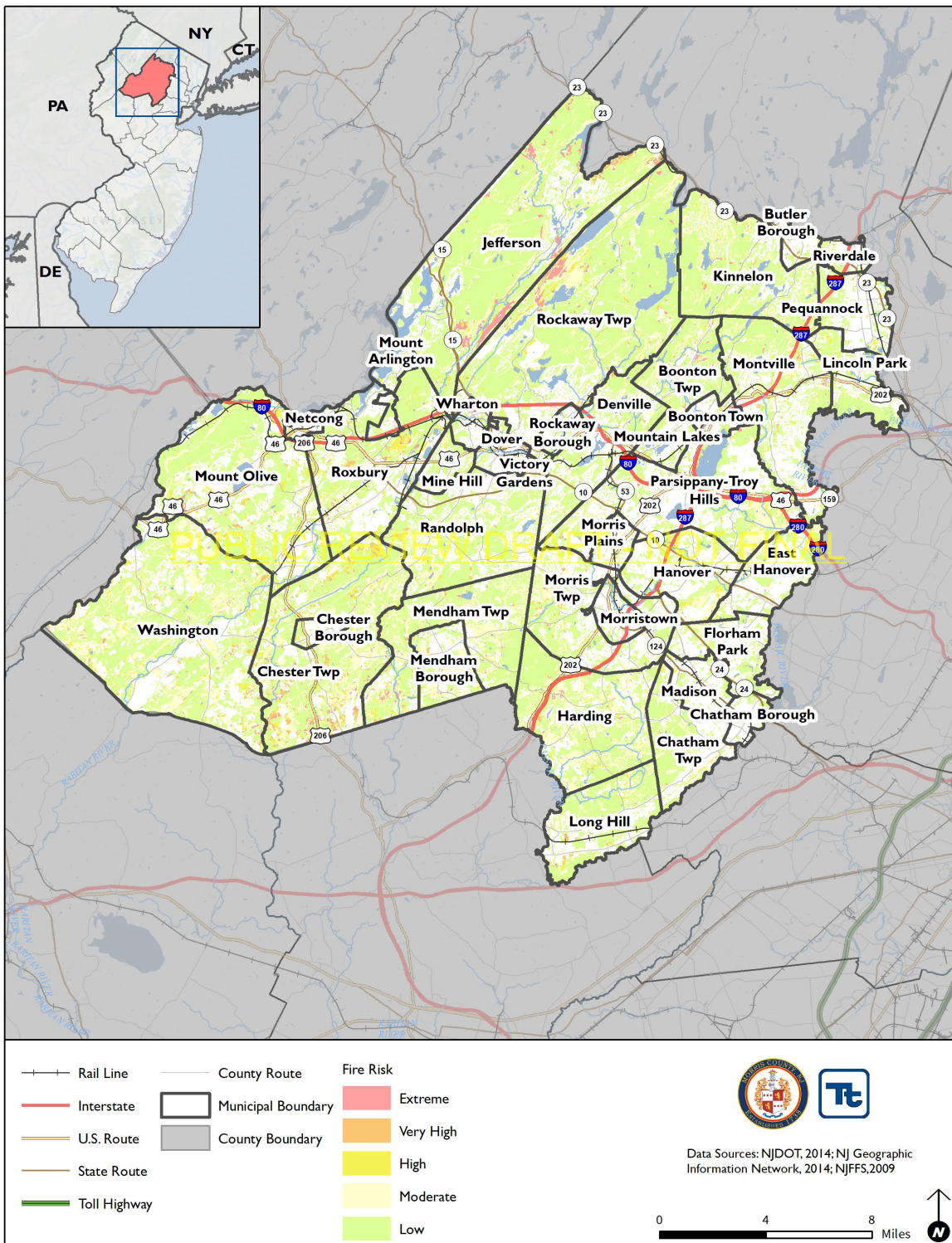
Source: NJDEP

Note: The red circle indicates the location of Morris County.



Figure 44 shows areas of fire risk across Morris County. The vast majority of the county has relatively low risk for wildfire, though pockets of elevated risk are located throughout.

Figure 44. Fire Risk in Morris County



Source: 2020 Morris County Hazard Mitigation Plan



Table 51. Approximate Area in the Wildfire Fuel Hazard Ranking Zones in Morris County

Municipality	Total Area (Square Miles)	NJ Forest Fire Service Risk Areas (square miles)			
		Low to Moderate	% in Low to Moderate Hazard Area	High to Extreme	% in High to Extreme Hazard Area
Boonton Town	2.5	0.59	23.7%	0.12	5.0%
Boonton Township	8.5	6.40	75.3%	0.25	2.9%
Butler Borough	2.1	0.53	25.7%	0.02	0.9%
Chatham Borough	2.4	0.61	25.7%	0.02	0.9%
Chatham Township	9.3	5.84	62.5%	0.22	2.3%
Chester Borough	1.6	0.65	40.6%	0.07	4.4%
Chester Township	29.2	21.65	74.1%	2.82	9.6%
Denville Township	12.7	6.98	54.8%	0.15	1.2%
Dover Town	2.7	0.80	29.3%	0.04	1.4%
East Hanover Township	8.1	3.55	43.8%	0.10	1.2%
Florham Park Borough	7.5	3.22	43.0%	0.08	1.1%
Hanover Township	10.7	3.99	37.1%	0.41	3.9%
Harding Township	20.6	16.73	81.4%	0.48	2.3%
Jefferson Township	42.8	30.74	71.8%	2.18	5.1%
Kinnelon Borough	19.2	14.90	77.5%	0.42	2.2%
Lincoln Park Borough	6.9	3.95	57.1%	0.19	2.7%
Long Hill Township	12.1	8.16	67.7%	0.37	3.1%
Madison Borough	4.3	1.04	24.1%	0.08	1.9%
Mendham Borough	6.0	3.79	63.3%	0.14	2.4%
Mendham Township	18.0	14.78	82.0%	0.68	3.8%
Mine Hill Township	3.0	1.76	58.6%	0.04	1.3%
Montville Township	19.1	10.86	56.8%	0.50	2.6%
Morris Plains Borough	2.6	0.74	28.4%	0.02	0.7%
Morris Township	15.8	7.94	50.2%	0.38	2.4%
Morristown Town	3.0	0.73	24.2%	0.01	0.2%
Mount Arlington Borough	2.8	1.05	37.5%	0.05	1.8%
Mount Olive Township	31.2	19.04	61.0%	1.32	4.2%
Mountain Lakes Borough	2.9	1.25	42.9%	0.01	0.3%
Netcong Borough	1.0	0.23	24.4%	0.00	0.3%
Parsippany-Troy Hills Township	25.3	10.07	39.7%	0.76	3.0%
Pequannock Township	7.1	2.73	38.5%	0.16	2.3%
Randolph Township	21.2	12.07	57.1%	0.51	2.4%
Riverdale Borough	2.1	0.75	36.1%	0.08	4.1%
Rockaway Borough	2.1	0.61	29.0%	0.02	1.0%



Municipality	Total Area (Square Miles)	NJ Forest Fire Service Risk Areas (square miles)			
		Low to Moderate	% in Low to Moderate Hazard Area	High to Extreme	% in High to Extreme Hazard Area
Rockaway Township	45.9	32.44	70.7%	1.78	3.9%
Roxbury Township	21.9	12.01	54.8%	1.28	5.8%
Victory Gardens Borough	0.1	0.01	4.3%	0.00	0.4%
Washington Township	44.9	30.27	67.4%	1.95	4.4%
Wharton Borough	2.1	0.76	35.6%	0.06	2.7%
Morris County Total	481.4	294.20	61.1%	17.77	3.7%

Source: NJFFS

3.13.4 EXTENT

The extent of wildfires depends on 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. This includes the National Fire Danger Rating Systems Buildup Index and the Keetch-Byram Drought Index (KBDI). Both are used for fire preparedness planning, which includes the following initiatives: campfire and burning restrictions, fire patrol assignments, staffing of fire lookout towers, and readiness status for both observation and firefighting aircraft.

- The *Buildup Index* is a number that reflects the combined cumulative effects of daily drying and precipitation fuels with a 10-day time lag constant. It is a rating of the total amount of fuel available for combustion.
- The *KBDI* is an index used to determining forest fire potential. The drought index 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.

In addition to the two indices, the NJFFS uses the National Fire Danger Rating System (NFDRS) to provide a measure of relative seriousness of burning conditions and threat of fire in the State. It allows the NJFFS to estimate the daily fire danger for a given area. The NFDRS uses a five-color coded system to help the public understand fire potential. The NJFFS slightly adapted the color system for their purposes. The NFDRS with the NFFS color scheme is shown in Table 52.

Table 52. 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.



Fire Danger Rating and Color Code	Description
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 burn 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.

Source: NJFFS

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3.13.5 PREVIOUS OCCURRENCES

Between 1954 and 2024, New Jersey was included in one FEMA Fire Management Assistance (FMA) declaration. Generally, these disasters cover a wide range of the state; therefore, the disaster may have impacted many counties. Morris County was not included in this FMA declaration.

Based on all sources used to research and identify wildfires in the County, there have been no wildfire incidents in Morris County between 2014 and 2023. Any small brush fires were managed locally with little impacts.

Dry conditions during the Fall season of 2024 saw multiple wildfires break out in Rockaway Township. On October 19, 2024, the Microwave Fire ignited in the area of Jacobs Road. The fire initially threatened 13 structures in the Township, though it was contained in a few days. No evacuations were ordered in conjunction with this fire. Shortly after, the Craigmear Lookout Wildfire ignited in the area of Notch Road and Green Pond Road on October 31, 2024. Sixteen structures were threatened and eight residences were evacuated due to this fire, though all residents were allowed back to their homes and no buildings were damaged during this fire. Approximately 280 acres were burned between the two fires.

3.13.6 PROBABILITY

Estimating the approximate number of urban fires and wildfires to occur in Morris County is difficult to predict in a probabilistic manner. Based on available data, urban fires and wildfires will continue to present a risk to Morris County. Given the numerous factors that can impact urban fire and wildfire potential, the likelihood of a fire event starting and sustaining itself should be gauged by professional fire managers on a daily basis.

During discussions at the second planning meeting, attendees noted that while daily fires do happen, they are mostly smaller in nature and easier to contain. Large scale fires are exceedingly rare.



3.13.7 CLIMATE CHANGE IMPACTS

Warmer temperatures may lead to longer dry seasons and multi-year droughts, creating triggers for wildfires, insects, and invasive species. 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. Climate change may also increase the frequency of lightning strikes; a warmer atmosphere holds more moisture which is one of the key items for triggering a lightning strike. Lightning strikes cause approximately half the wildfires in the United States. If the frequency of lightning strikes increases, the potential for wildfires from these strikes also increases. 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.

According to NOAA, average annual temperatures have increased by 3°F in New Jersey over the past century. By 2050, the temperature is projected to increase 4.1°F to 5.7°F. As for precipitation, Northern New Jersey's 1971-2000 precipitation average was over five inches (12%) greater than the average from 1895-1970 according to data from the Office of the New Jersey State Climatologist. Average annual precipitation is projected to increase in the region from 6%-9% by 2100. Most of the additional precipitation is expected to come during the winter months.

As stated above, according to the temperature projections for Northern New Jersey, including Morris County, this area 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.

3.13.8 VULNERABILITY ASSESSMENT

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3.13.8.1 IMPACT ON LIFE, HEALTH, AND SAFETY

Potential losses from wildfire include impacts to human health and life of residents and responders, structures, infrastructure and natural resources. In addition, 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. The most vulnerable populations include emergency responders and those within a short distance of the interface between the built environment and the wildland environment. First responders are exposed to the dangers from the initial incident and after-effects from smoke inhalation and heat stroke.

Of the population exposed, the most vulnerable include the economically disadvantaged and the population over age 65. Economically disadvantaged populations are more vulnerable because they are likely to evaluate their risk and make decisions to evacuate based on net economic impacts on their families. The population over age 65 is also more vulnerable because they are more likely to seek or need medical attention that may not be available due to isolation during a wildfire event, and they may have more difficulty evacuating.

3.13.8.2 IMPACT ON GENERAL BUILDING STOCK

Buildings located within the NJFFS identified extreme, very high or high fuel hazard areas are exposed and considered 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, stone or concrete. Less than 1-percent (\$686 million) of the County's building replacement cost value is located in the extreme/very high/high hazard area.



1.1.3.1 IMPACT ON CRITICAL FACILITIES

In Morris County, there are 11 critical facilities located in the wildfire hazard area. Three of these critical facilities are community lifelines. Table 53 provides data on critical facilities located in the wildfire hazard area.

Table 53. Number and Types of Critical Facilities Located in the Wildfire Hazard Area in Morris County

Type of Critical Facility	Number of Critical Facilities
Dam	5
Hazmat	2
Sewer Pump	1
Sewer Utility	1
Water	1
Well	1
Total	11

Source: NJFFS

Roads and bridges in areas of fire risk are extremely important because they provide ingress and egress to large areas and, in some cases, to isolated neighborhoods. According to the exposure analysis conducted in 2020, 2.5 miles of major highway fall within wildfire hazard areas: NJ 124, US 46, US 206, NJ 53, NJ 15, and US 202.

Fires can create conditions that block or prevent access and can isolate residents and emergency service providers. Areas surrounding any dams located in wooded areas or other areas adjacent to the wildfire hazard areas are particularly vulnerable to additional impacts from a wildfire.

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3.13.8.3 IMPACT ON THE ECONOMY

Wildfire events can have major economic impacts on a community including the loss of tax base and business revenue from destroyed structures. Depending upon the scale of the event, wildfires can cost thousands of taxpayer dollars to suppress and control and involve hundreds of operating hours on fire apparatus and thousands of volunteer man 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.

Due to a lack of data regarding past structural and economic losses specific to Morris County or its municipalities, it is not possible to estimate potential future economic losses due to wildfire events currently.

3.13.8.4 IMPACT ON THE ENVIRONMENT

Wildfire can have many impacts on the environment, not the least which is the direct destruction of natural habitats. According to the USGS, post-fire runoff polluted with debris and contaminants can be extremely harmful to ecosystem and aquatic life. Studies show that urban fires in particular are more harmful to the environment compared to forest fires. The age and density of the infrastructure within Morris County implies that a fire can have exacerbated consequences on the environment because of the increased amount of chemicals and contaminants that would be released from burning infrastructure.

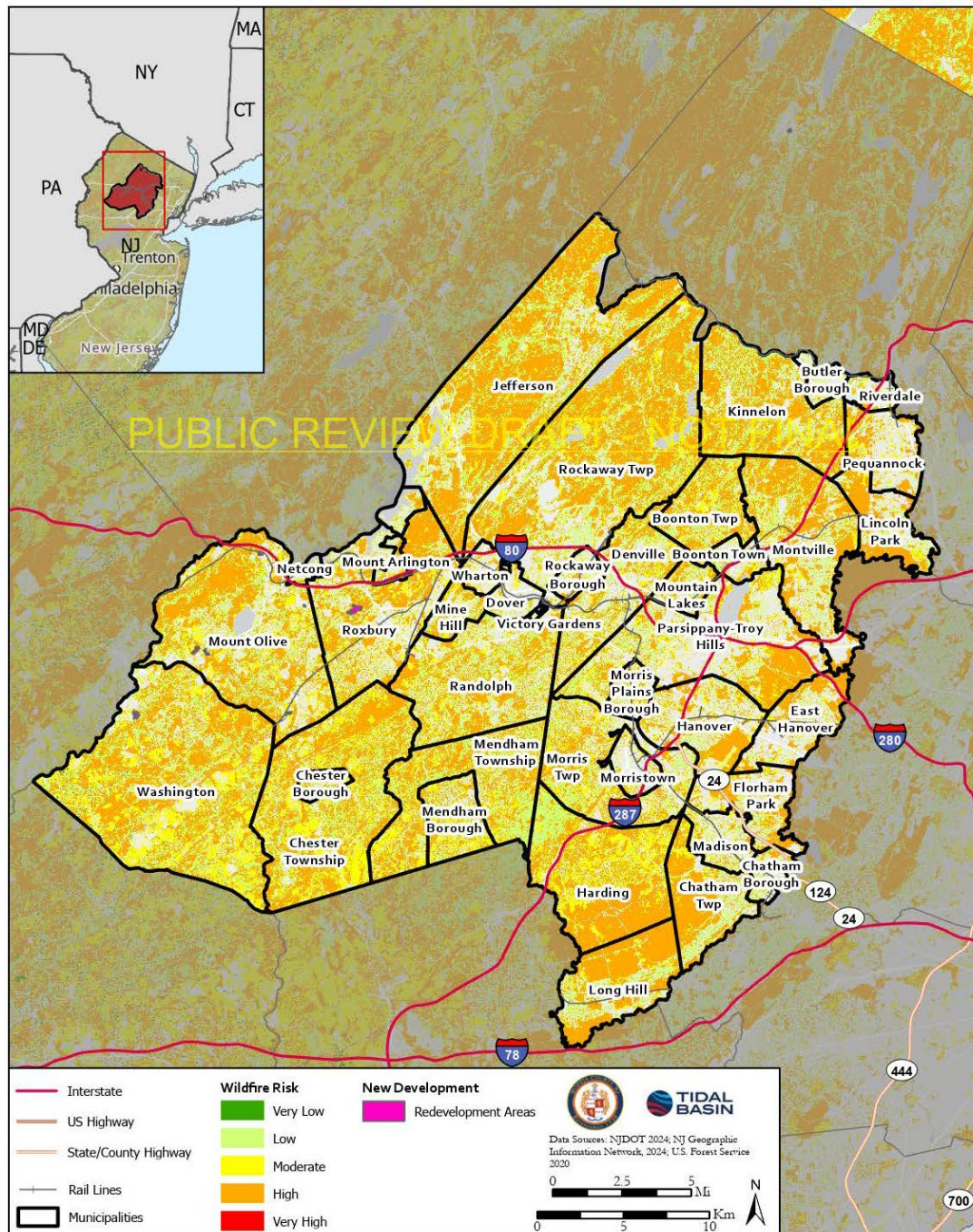


3.13.9 FUTURE CHANGES THAT MAY IMPACT DEVELOPMENT

3.13.9.1 PROJECTED DEVELOPMENT

It is anticipated that any new development and new residents in the wildfire hazard area will be exposed to some level of risk from the wildfire hazard. Figure 45 shows an overlay of projected development over the fire risk zones in Morris County.

Figure 45. Fire Risk Zones and Projected Development





1.1.3.1.1 Projected Changes in Population

Overall, the county's population has been increasing and is projected to continue to increase the next few decades. As the population expands and new development is constructed, vulnerability to this hazard will depend upon the location of the new construction and its proximity to wildfire fuels.

3.13.9.2 CLIMATE CHANGE

As discussed earlier, temperatures are anticipated to increase, 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 have the potential to increase the likelihood of a wildfire. The increased potential combined with stronger winds can increase the County's vulnerability. If stronger winds occur near a wildfire and emergency services are unable to initially contain the event, the fast-moving fire can spread to nearby developments. This can directly impact the County's population and built environment in the vicinity of the fire, and also indirectly affect those served by utility infrastructure that can be damaged by a fire.

3.13.10 VULNERABILITY CHANGE SINCE THE 2020 HMP

The entire County continues to be vulnerable to the wildfire hazard; however, areas with heavier development in wooded areas have a greater exposure and vulnerability to fire.

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SECTION 4: PLAN IMPLEMENTATION, INTEGRATION AND MAINTENANCE

4.1 PLAN GOALS

The planning process included a review and update of the prior mitigation goals and objectives as a basis for the planning process and selection of appropriate mitigation actions addressing all hazards of concern. Upon consideration, participating jurisdictions opted not to change the goals from the 2020 plan update. The goals remain:

Goal 1. Reduce the impacts of hazards on people, property, the environment and the economy.

Goal 2. Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measures that can be taken to reduce their impact.

Goal 3. Improve data collection, use and sharing to reduce the impact of hazards.

Goal 4. Improve capabilities, coordination and opportunities at municipal and county levels to plan and implement hazard mitigation projects, programs and activities.

Goal 5. Pursue opportunities to mitigate repetitive loss properties and other appropriate hazard mitigation projects, programs and activities.

Communities were encouraged to use these goals as guideposts when reviewing, updating and adding new hazard mitigation actions.

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4.2 STRATEGY DEVELOPMENT

Using the updated goals as a planning tool to guide mitigation planning efforts, the LPC collaborated to identify a 2025 hazard mitigation strategy that is both effective and feasible for the county and participating communities. As part of the process, the group reviewed the mitigation strategy from the previous plan and reported on the status of specific hazard mitigation actions. These actions were divided into three categories. Completed actions are those activities that Morris County and its communities have implemented over the life of the previous plan; these are located in Section 4.4. Deleted actions are those activities that the committee reviewed and decided to remove from the new hazard mitigation strategy; these are located in Section 4.5. Continued actions are those actions that have either not been started yet or are in the process of being implemented; elements of each action are included in respective community-specific annexes. Implementation and maintenance procedures for the hazard mitigation strategy are included in Chapter 5 of this plan.

At the beginning of the planning process, the planning team set out participation requirements for jurisdictions to be considered full participants in the hazard mitigation plan. Among these requirements, the planning committee asked that each jurisdiction that wanted to be considered a full participant in the update identify at least one new or continuing hazard mitigation action to reduce risk in their community.

4.3 2020 MITIGATION ACTION REPORTING

Communities were asked to review and update the hazard mitigation actions that were identified in the 2020 plan to better understand the progress that they had made, and to identify actions that they wanted to keep for the 2025 plan update. Communities reviewed each action and identified it in one of four categories:

- **Completed.** The action has been completed.



- **Not started.** The action has not been started but should be included in the updated strategy.
- **In progress.** The action has been started but should still be included in the updated strategy.
- **Cancelled.** The action is no longer relevant and should be cancelled.

4.4 COMPLETED ACTIONS

Completed hazard mitigation actions are found in each community-specific strategy.

4.5 CANCELLED ACTIONS

Cancelled hazard mitigation actions are found in each community-specific strategy.

4.6 2025 HAZARD MITIGATION STRATEGY ELEMENTS

For all new and continuing actions, communities were asked to provide background information on the action. Each action includes:

- Mitigation action name
- What is the problem the action is solving?
- How does the action solve the problem?
- Action status
- Hazards the action helps mitigate
- Plan goal(s) the action helps implement
- Lead and support agencies for each action
- Potential funding sources to support each action
- Benefits of implementing the action
- Estimated cost of the action
- Estimated timeline for the action

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4.7 ACTION PRIORITIZATION

Action prioritization was streamlined from the methodology used in the previous plan. Communities were asked to score each action on a set of metrics. These metrics were:

- Potential for lives saved
- Potential for reduced property damages
- Potential for reduced response actions
- Whether the benefits of the action exceed the costs
- Internal community action priority ranking

Each metric was scored on a scale of 1 – 3, and the total scores were tallied up to identify a final priority ranking. Final rankings were based on a minimum score of 5 and a maximum score of 15.

5 – 8	Low Priority
9 – 12	Medium Priority
13 – 15	High Priority



Once scoring was tallied, they were presented to the LPC and communities during the internal plan review process, along with the invitation to review and edit scores and prioritization as warranted based on specific community needs. Committee members were invited to review the scoring further during the committee plan review period and provide any additional comments or concerns on action prioritization; any comments received were reviewed and incorporated.

4.8 2025 HAZARD MITIGATION STRATEGY

The 2025 Hazard Mitigation Strategy is found in each community-specific annex.

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SECTION 5: PLAN IMPLEMENTATION, INTEGRATION AND MAINTENANCE

Maintaining and ensuring the plan is kept up to date are integral components of the hazard mitigation plan life cycle. A structured process for these updates keeps the HMP current, informs any changes in risk, and maintains eligibility to applicable funding sources for Morris County and its communities. Plan maintenance will be coordinated by:

- The Morris County Hazard Mitigation Plan Coordinator, as assigned.
- The Morris County Local Planning Team, made up of representatives from each participating jurisdiction in Morris County.

5.1 PLAN IMPLEMENTATION

5.1.1 FORMAL ADOPTION

Formally adopting the Morris County HMP secures buy-in, raises awareness of the HMP, and formalizes the HMP's implementation. Each jurisdiction participating in this plan will adopt it following all jurisdictional procedures. A copy of the generic resolution and the executed copies are included in the appendices.

5.1.2 IMPLEMENTATION

Once the plan is adopted, each participating community may begin implementing the hazard mitigation strategy in Section 4 and Community Specific Annexes of this document. The mitigation strategy identifies responsible agencies and entities, general timelines, prioritization, and potential funding sources to assist in strategy implementation.

5.1.3 INTEGRATION WITH OTHER COUNTY AND COMMUNITY INITIATIVES

During the HMP annual review process, each participating municipality will be asked to document how they are utilizing and incorporating the Morris County HMP in tandem to their day-to-day operations and planning and regulatory processes. Additionally, each municipality will identify additional policies, programs, practices, and procedures that could be modified to accommodate hazard mitigation actions.

5.1.4 CONTINUED PUBLIC INVOLVEMENT

Morris County and participating jurisdictions are committed to the continued involvement of the public in the hazard mitigation process. Public outreach and dissemination of the HMP will include:

- Links to the plan on municipal websites of each jurisdiction with that capability.
- Continued utilization of existing social media outlets to inform the public of natural hazard events. Educate the public via jurisdictional websites on how these applications can be used in an emergency.
- Development of annual articles or workshops on flood hazards to educate the public and keep them aware of the dangers of flooding.

5.2 MONITORING, EVALUATING AND UPDATING THE PLAN

The Morris County HMP Coordinator is assigned to manage the maintenance and update of the plan during its performance period. The HMP Coordinator will chair the LPC and be the prime point of contact for questions regarding the plan and its implementation as well as to coordinate incorporation of additional information into the



plan. Each jurisdiction is expected to maintain a representative on the Planning Team throughout the plan performance period (five years from the date of plan adoption).

Regarding the composition of the team, it is recognized that individual commitments change over time, and it shall be the responsibility of each jurisdiction and its representatives to inform the HMP Coordinator of any changes in representation. The HMP Coordinator will strive to keep the committee makeup as a uniform representation of planning partners and stakeholders within the planning area.

5.2.1 MONITORING

Each year, beginning one year after plan development, Morris County and local community representatives will collect and process information from the departments, agencies and organizations involved in implementing mitigation projects or activities identified in their jurisdictional annexes by contacting persons responsible for initiating and/or overseeing the mitigation projects.

In addition to progress on the implementation of mitigation actions, including efforts to obtain outside funding; and obstacles or impediments to implementation of actions, the information that Planning Partnership representatives shall be expected to document, as needed and appropriate include:

- 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.

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5.2.2 EVALUATION

The evaluation of the mitigation plan is an assessment of whether the planning process and actions have been effective, if the HMP goals are being achieved, and whether changes are needed. The HMP will be evaluated on an annual basis to determine the effectiveness of the programs, 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. At least two weeks before the annual plan review meeting, the Morris County HMP Coordinator will advise the Planning Partnership of the meeting date, agenda and expectations of the members.

The Morris County HMP Coordinator will be responsible for calling and coordinating the annual plan review meeting and soliciting input regarding progress toward meeting plan goals and objectives. Plan evaluation will focus on four key areas:

- Changes in capabilities
- Changes in hazard threat, vulnerability and consequences
- Progress on achieving plan goals
- Monitoring the implementation of the mitigation strategy, including project closeout

Morris County will utilize an Annual Review Tool to assist in this process. This reporting tool allows for continual tracking of evolving risks to Morris County as well as progress toward the mitigation of the risks and impacts.

The HMP will also be evaluated and revised following any major disasters, to determine if the recommended actions remain relevant and appropriate.



5.2.3 PLAN UPDATES

Local hazard mitigation plans must be reviewed, revised as appropriate, and resubmitted for approval in order to remain eligible for benefits awarded under the DMA 2000. It is the intent of Morris County to update this plan on a five-year cycle from the date of initial plan adoption.

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APPENDIX 1: BOROUGH OF BUTLER COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Butler and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Chapter 101 of the municipal code.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter 143 Land Use. Part 5 Zoning Regulations. Administered by the Planning Board.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 143 Land Use. Administered by the Planning Board.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 143 Land Use, Article XXIII.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level. Butler is fully built out with no room for growth.					
Site Plan Review	Yes	Local	No	No	-
Comment: Chapter 143 Land Use, Article XIII Design and Construction Standards for Site Plans. Administered by the Planning Board.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Environmental Protection	Yes	State	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	Yes	No	2020-Borough of Butler-004
Comment: Chapter 124 Flood Damage Prevention. Adopted in 1988. Administered by the Floodplain Administrator. Needs to be updated to include state freeboard requirement.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	-	-	-
Comment: Chapter 21 Fire Department. Chapter 40 Police Department. Chapter 60 Emergency Management.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-
Comment: Borough of Butler Master Plan August 19, 2004. Reexamination November 12, 2015. Original plan had physical and environmental characteristics including topography, steep slopes, soils, freshwater wetlands, and flood hazard areas. Plan also included land use plan, housing plan, circulation plan, utility plan, recycling plan, community facilities, and coordination with other planning programs. The reexamination notes best management strategies to reduce flood risk through low impact development.					
Capital Improvement Plan	No	-	Allowed	-	-
Comment: 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.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local and State	Yes	Yes/No	Yes/No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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). The Borough also hosts educational information on stormwater management on the municipal website.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes/No	Yes/No
Comment: Borough of Butler Stormwater Pollution Prevention Plan. Completed 2005. Updated 2009.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	Yes	Local	No	No	-
Comment: Economic Development Committee that works on business development.					
Other	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	-
Comment: 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	No	-
Comment:					
Public Health Plan	Yes	Local	No	No	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
- If no, who does? If yes, which department?	Building Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No – Butler is 99% built out already. Construction is typically teardown and rebuild type activity

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Butler.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department / Agency / Position
Administrative Capability		
Planning Board	Yes	Planning Board

Staff/Personnel Resource	Available?	Department / Agency / Position
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	No	-
Economic Development Commission / Committee	Yes	EDC Committee
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Police
Maintenance program to reduce risk	Yes	DPW/Police/Electric
Mutual aid agreements	Yes	Fire/Police/DPW/Electric
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	Building Inspector
Planners or engineers with an understanding of natural hazards	Yes	Land Use Board Planner/Engineer
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	Yes	Engineer
Staff with education/knowledge/training in low impact development	Yes	Engineer
Surveyor	Yes	Contracted Surveyor
Stormwater engineer	Yes	Engineer
Personnel skilled or trained in GIS applications	Yes	DPW Superintendent
Local or state water quality professional	Yes	Water Treatment Plant Superintendent
Scientist familiar with natural hazards in local area	Yes	Engineer
Emergency manager	Yes	OEM Coordinator/Administrator
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Administrator
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Butler.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, the Borough has previously used these
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No

Financial Resource	Accessible or Eligible to Use?
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Butler.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – We link to the NJ Website
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Facebook is used to communicate information
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	No
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, through OEM the Borough can put out alerts and instructions to our residents

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Butler.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	ISO Class 5	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Tom Boorady, Borough Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, the FPA is a CFM
What is the date that your flood damage prevention ordinance was last amended?	1988
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	1992
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	N/A
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Policies in force: 42 Insurance in force: \$14,016,500 Premium in force: \$74,583
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 35 Claims open or closed without payment: 8 Total payments for losses: \$330,073
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Butler that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Butler has significant exposure. Refer to Figure 1 and Figure 2.

Figure 1: Borough of Butler Hazard Area Extent and Location Map 1

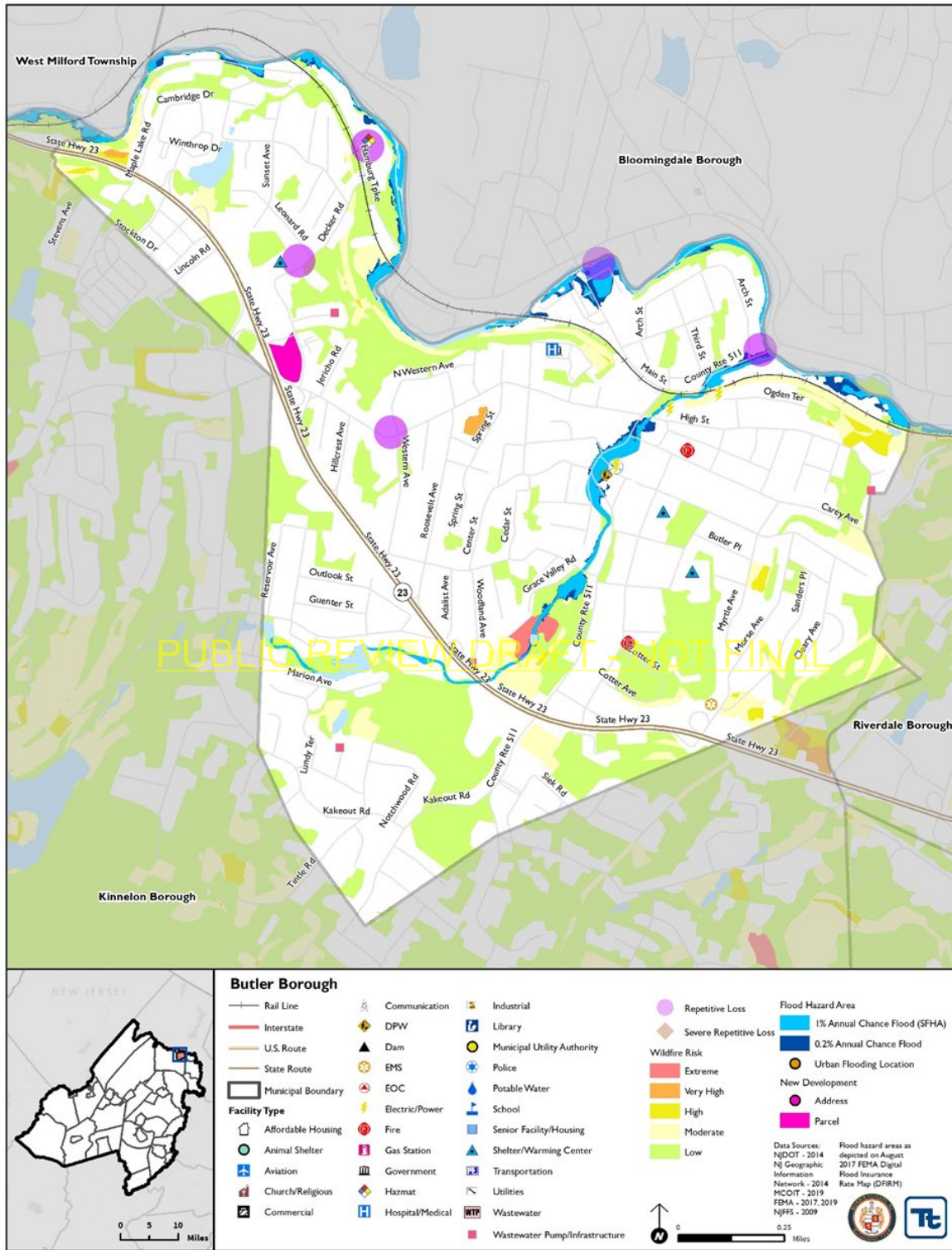
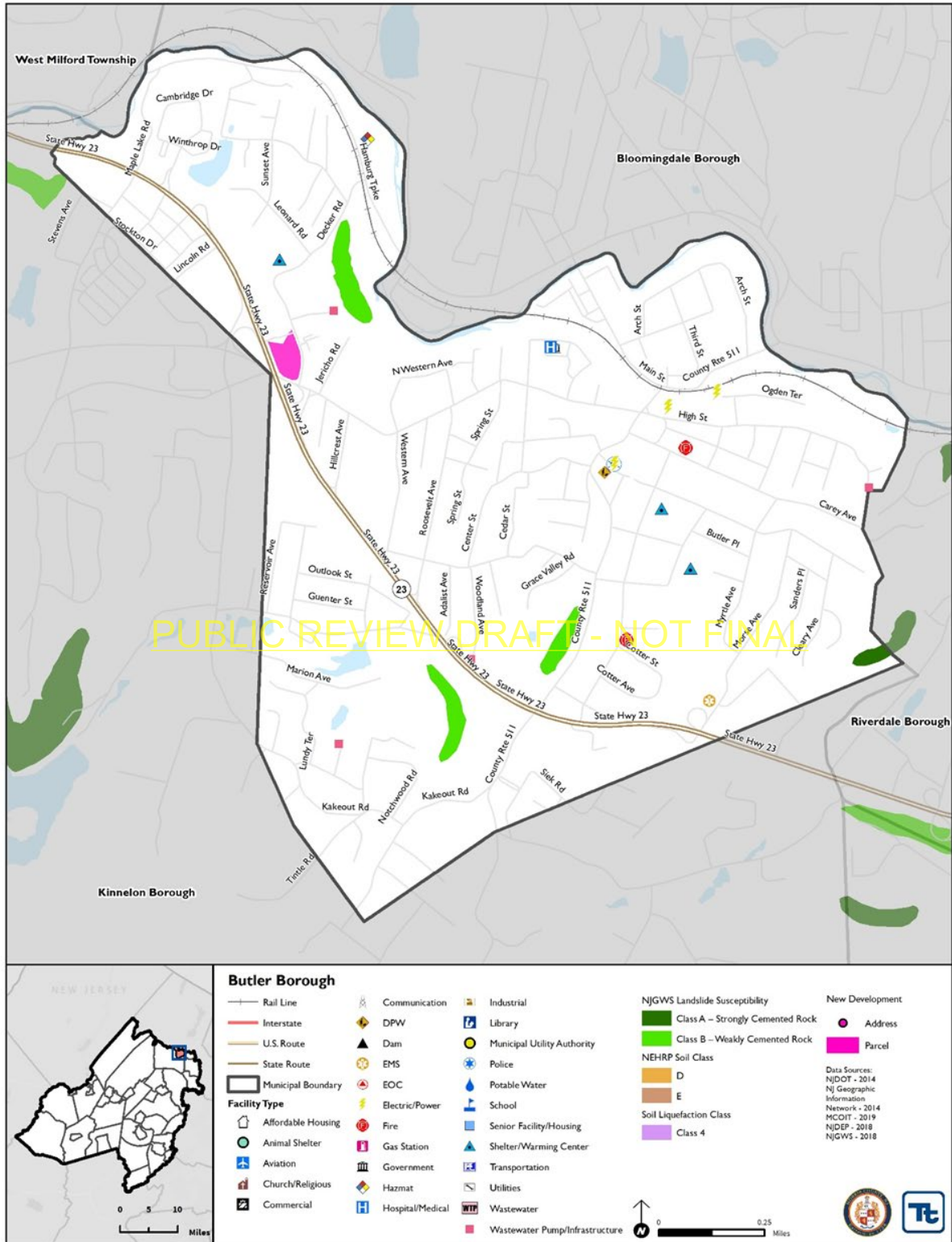


Figure 2: Borough of Butler Hazard Area Extent and Location Map 2



2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Butler.

- Number of repetitive loss (RL) properties: 6
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Borough of Butler DPW	DPW	X	X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Butler has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Borough of Butler Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Butler did not report any completed actions.

2.6 CANCELLED ACTIONS

Butler did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Butler Borough	Home Elevation/ Acquisition Program	The Borough has six repetitive loss properties.	Elevate/acquire flood-vulnerable properties, including severe repetitive and repetitive loss properties located in the Borough.	Yes	Not Started
2	Butler Borough	Department of Public Works flood protection initiative	The Borough's Department of Public Works is located in the 1% floodplain. DPW is considered a critical facility and provides critical services.		Yes	In Progress
3	Butler Borough	Develop/ Enhance all-hazards public education and outreach program for hazard mitigation and preparedness.	Need for a All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Create and continuously update All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	No	New
4	Butler Borough	Electric System Resiliency	Extensive power outages caused by Hurricanes/ High Winds/ Ice Storms	Butler operates its own electric utility. This project will provide resiliency to the system.	No	New

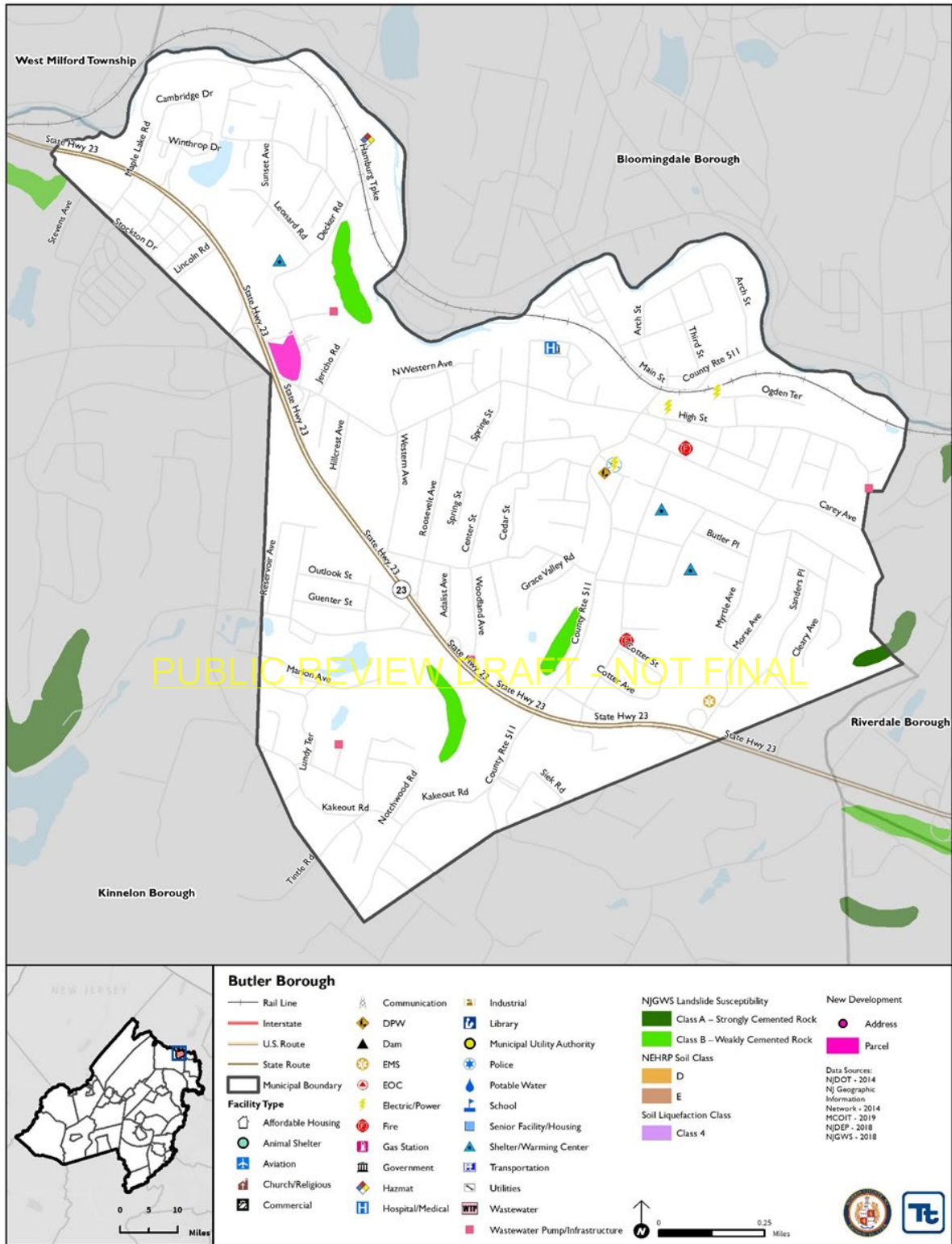
2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 5	Goal 1	FPA		HMA Grants, FMA	Flood risk reduced
2	Flood	Severe Weather	Goal 1		DPW, Engineer		HMGP, Municipal budget	Reduction in flood risk.
3	Severe Weather		Goal 2	Goal 1	Engineering	Administration	Operating budget	Improve education and outreach
4	Severe Weather	Severe Winter Weather	Goal 1	Goal 5	Butler Electric		Utility Budget	Reduce time of power outages

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Over \$1M	3-5 years	2	3	2	2	1	10	Medium
2	\$50k-\$250k	1-3 years	1	3	1	3	3	11	Medium
3	Under \$50k	1-3 years	3	3	2	1	2	11	Medium
4	Over \$1M	3-5 years	2	3	2	1	2	10	Medium



ANNEX 2: BOROUGH OF CHATHAM COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Chatham and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. UCC in Borough of Chatham Chapter 111.					
Zoning Code	Yes	Local	Yes, if have planning board	No	No
Comment: State permissive on local level. [note local ordinance # and date of adoption]. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Borough of Chatham Chapter 165 Land Development Regulations.					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Borough of Chatham Chapter 165 Land Development Regulations.					
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Borough of Chatham Engineering					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes, if have planning board	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes, if have planning board	No	No
Comment: 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 freeholders 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. Borough of Chatham Code subsection 165-157.					
Environmental Protection	No	-	Yes	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	No	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance.					
Wellhead Protection	Yes	Local	No	No	No
Comment: 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)). Borough of Chatham Code subsection 165-50.					
Emergency Management	No	-I	Yes	-	-
Comment: 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	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other: Tree Protection Ordinance	Yes	Local	No	-	-
Comment: Borough of Chatham Code Chapter 257.					
Planning Documents					
Master Plan	Yes	Local	Yes	Yes	n/a
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1). Borough of Chatham Master Plan was updated by the planning board in 2016 https://www.chathamborough.org/chatham/Master%20Plan%20Update/ . Objectives include to protect local natural resources that provide the Borough's water supply, prevent flooding and provide recreation opportunities. The Environmental Resource Inventory, adopted into the Master Plan in May 2012, provides to take steps to assure that the Borough's floodplains, woods, and natural vegetation areas be protected for both aesthetic and practical reasons.					
Capital Improvement Plan	Yes	Local	Yes	No	No
Comment: 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. Borough Strategic Financial Mgt Plan is updated annually by the Borough Administrator.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332)					
Stormwater Management Plan	Yes	Local/State	Yes	No	No
Comment: 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). Borough Storm Water Management Plan. Borough of Chatham Stormwater Management Plan March 2005 http://www.zumu.com/zumu/chatham/Stormwater%20Management%20Plan.pdf .					
Stormwater Pollution Prevention Plan	Yes	Local/State	Yes	No	No
Comment: 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). Borough of Chatham Storm Water Pollution Prevention Plan April 10, 2019.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	-	-
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4).					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Shade Tree commission	Yes	Local	Allowed	No	No
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958. Chatham Borough Shade Tree Commission was established in 1909.					
Other: Historic Preservation	Yes	Local	Allowed	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest. Borough of Chatham Historic Preservation Commission was formed in May 1989.					
Other: Open Space Plan	Yes	Local-	No	No	No
Comment: The Borough of Chatham Open Space Advisory Board published the Open Space and Recreation Plan in July 2010. https://www.chathamborough.org/chatham/Boards%20%26%20Commissions/Advisory%20Committees/Open%20Space%20Advisory%20Committee/					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes/No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	Yes/No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes/No	-	No	-	-
Comment:					
Public Health Plan	Yes/No	-	No	-	-
Comment:					
Other	Yes/No	-	Yes/No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	No
- If no, who does? If yes, which department?	Building construction questions, permits and inspections will be carried out by the Borough of Madison Building Construction Office. All zoning questions, land disturbance permits, tree removal permits, and CCO requests are addressed by the Office of the Borough Engineer.
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Borough is completely built out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Chatham.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Administrator

Staff/Personnel Resource	Available?	Department/Agency/Position
Mitigation Planning Committee	Yes	OEM, Engineering, Administration, DPW, Fire, Police, Finance
Environmental Board / Commission	Yes	Administrator
Open Space Board / Committee	Yes	Engineering
Economic Development Commission / Committee	Yes	Administrator
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Police
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Police and Fire
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 training in benefit/cost analysis	Yes	Engineering
Staff with training in green infrastructure	Yes	Engineering
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	Yes	Engineering
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Engineering
Local or state water quality professional	Yes	Engineering
Scientist familiar with natural hazards in local area	Yes	Engineering
Emergency manager	Yes	OEM Coordinator, OEM Deputy Coordinator
Grant writers	No	-
Resilience Officer	No	-
Watershed planner	Yes	Community Services
Environmental specialist	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Chatham.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes (Water/Sewer)
Incur Debt through General Obligation Bonds	Yes

Financial Resource	Accessible or Eligible to Use?
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Chatham.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, OEM site links to County HMP
Do you use social media for hazard mitigation education and outreach? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, Twitter @chathamNJOEM
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, Environmental Commission, Planning Board, Zoning Board
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, briefly describe. 	No
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes, AlertChathamBorough

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Chatham.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	3	2014
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Silver		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (department/position)	Engineering/Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	July 9, 2001
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	n/a
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state what they are. 	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what they are. 	No, updated in 2019
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If no, state why. 	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	N/a
Does your jurisdiction participate in the Community Rating System (CRS)? <ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	No
How many flood insurance policies are in force in your jurisdiction? <ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	47 \$12,853,100 \$32,224
How many total loss claims have been filed in your jurisdiction? <ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	7 0 open, 4 closed without payment \$2,753
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Chatham that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Chatham has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Mendham.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Molitor Water Pollution Control Facility*	Wastewater Treatment	x	x

*Lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 3 (Risk Assessment). The Borough of Chatham reviewed the results of the hazard ranking as shown below and confirmed the indicated ranking in agreement with the calculated results for all hazards.

Table 9: Borough of Chatham Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

Figure 1: Borough of Chatham Hazard Area Extent and Location Map 1

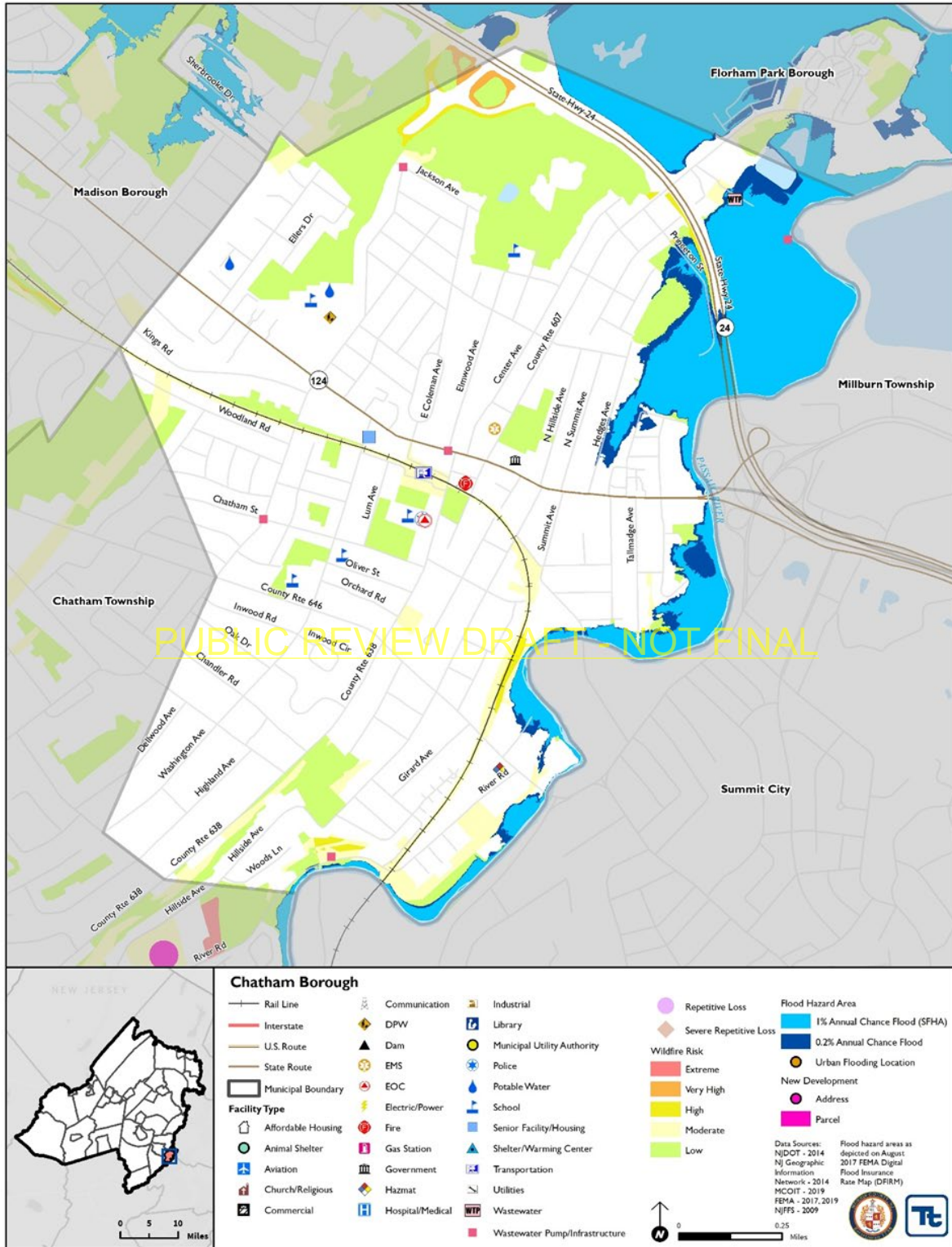
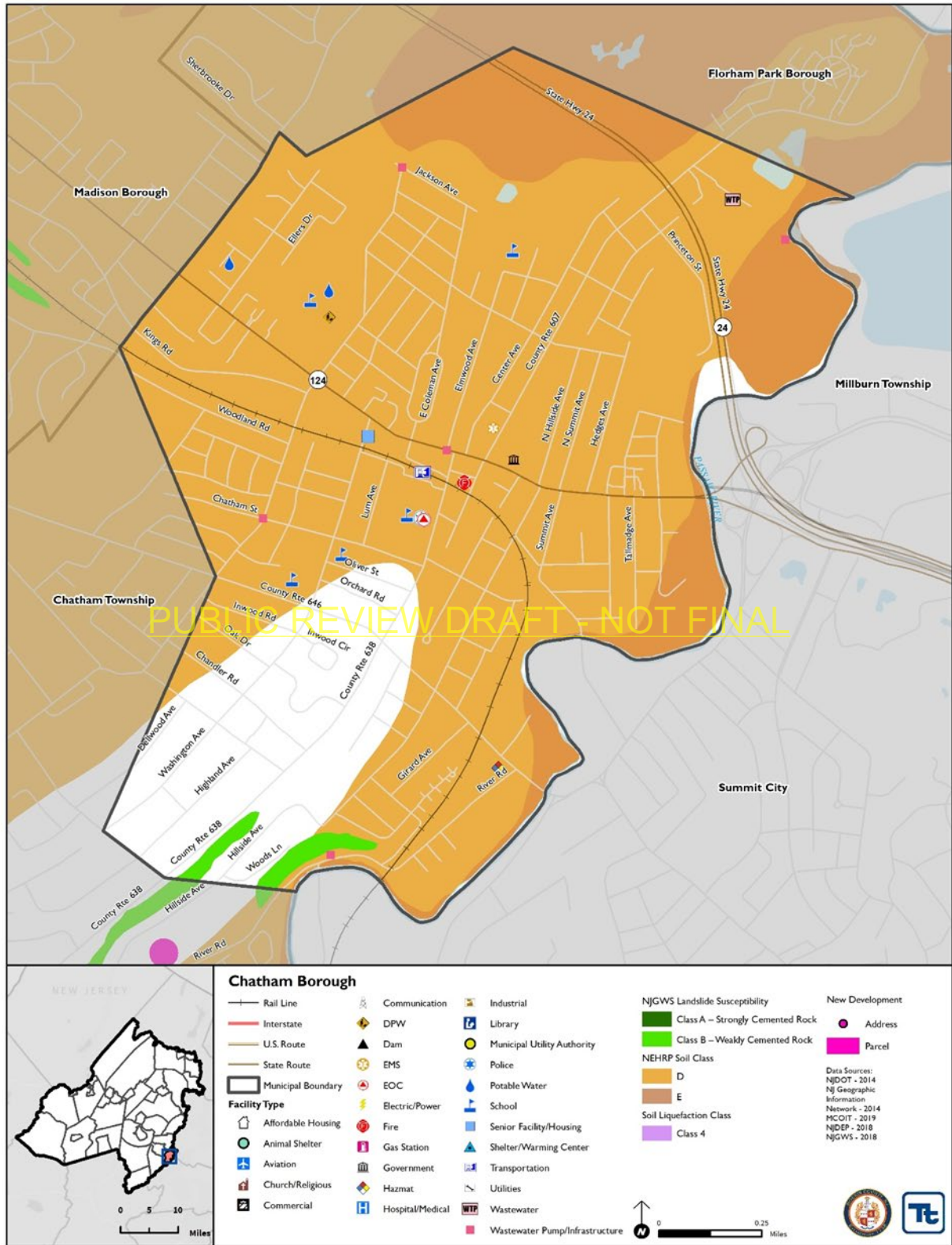


Figure 2: Borough of Chatham Hazard Area Extent and Location Map 2



2.5 COMPLETED ACTIONS

Borough of Chatham reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were reported as cancelled:

- **Action:** Investigate floodproofing options at the Molitor Water Pollution Control Facility. **Reason:** The Molitor project could never satisfy FEMA's requirement that the benefit-cost ratio be greater than 1.
- **Action:** Install backup generator for the library. **Reason:** The Library Generator project could never satisfy FEMA's requirement that the benefit-cost ratio be greater than 1.
- **Action:** Procure and stockpile PPE. **Reason:** The PPE project did not satisfy FEMA's eligibility requirements, according to the consultants.

2.7 HAZARD MITIGATION STRATEGY

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Chatham Township	Review & update the Chatham Township Flood Hazard Area Ordinance	The Chatham Township Flood Hazard Area Ordinance should be consistent with FEMA requirements. Updating is required periodically and will be required when FEMA issues the new digital mapping to replace the prior paper maps	The Township anticipates reviewing and updating the Flood Hazard Area Ordinance upon the adoption of the new FEMA maps to replace the prior maps. Status is on-going and the adoption has not been scheduled. This will improve regulatory and enforcement capabilities to manage flood risk.	No	New
2	Chatham Borough	Tornado awareness, preparation and response	Limited local understanding of tornado warnings, hazards and best safety actions even as tornado reports are more frequent in recent years	Improves resident awareness, preparation and response to warnings	No	N/A
3	Chatham Borough	Promote SMART 911 opt-ins	This most effective means of alerts and information is used by only a portion of the population blunting the effect of public safety communications	Allows emergency warnings and information to be communicated more broadly and faster	No	N/A

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
4	Chatham Borough	NFIP Participation	Continue to participate in and remain in good standing with the National Flood Insurance Program (NFIP)	Participating in the NFIP both makes a community more flood resilient and offers affordable flood insurance to homeowners.	No	New

2.7.2 IMPLEMENTATION INFORMATION

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Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1	Goal 3; Goal 5	<u>Engineering, Administration</u>		Local Funds; Federal Funds; BRIC	Reviewing and updating the ordinance will allow the community to get a better handle on ordinances.
2	Severe Weather		Goal 2		OEM	Administration	not required	public safety and preparedness
3	Severe Weather	Hazardous substance /	Goal 3		Police	OEM, Administration	not required	public safety and preparedness

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
		Severe winter weather / Extreme temperature						
4	Flood	Severe Weather	Goal 5	Goal 4	Floodplain Administrator	OEM, Administration	Borough funds	flood safety

2.7.3 STRATEGY RANKING AND PRIORITIZATION

What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
Under \$50k	1-3 years	1	3	3	2	2	11	Medium
Under \$50k	Under 1 year	2	1	2	3	2	10	Medium
Under \$50k	1-3 years	2	1	2	3	3	11	Medium
Under \$50k	Under 1 year	1	3	1	3	3	11	Medium

ANNEX 3: BOROUGH OF CHESTER COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Chester and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	-	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019					
Zoning Code	Yes	Local	Yes, if have planning board	-	-
Comment: Updated by the Planning Board and Governing Body (Chapter 163 (Land Development and Procedures) Article IX (Zoning – Zoning Requirements)) Adopted 5/2019					
Subdivisions	Yes	Local	Yes, if have planning board	-	-
Comment: Updated by the Planning Board and Governing Body (Chapter 163 (Land Development and Procedures) Article VII (Subdivision of Land))					
Stormwater Management	Yes	Local	Yes	-	-
Comment: Engineering updates. (Chapter 204 Borough of Chester Code. Amended February 7, 2006.)					
Post-Disaster Recovery	No		No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	-	-
Comment: Division of Consumer Affairs (N.J.A.C. 13:45A-29.1). Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	Local	Yes, if have planning board	-	-
Comment: State Mandated on a municipal level. See Zoning Ordinance ; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Via Master Plan.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Site Plan Review	Yes	Local	Yes, if have planning board	-	-
Comment: Through land use board, reference Section 163-27 of Borough code : 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 and 40:27-6.10.					
Environmental Protection	Yes	State	Yes	-	Y-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	No	Local	No	-	-
Comment: The Borough currently does not participate in the NFIP as it has no NFIP mapped floodplains					
Wellhead Protection	No	Local	No	-	-
Comment:					
Emergency Management	Yes	Local	Yes	-	-
Comment: 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	No	Local	No	-	-
Comment:					
Disaster Recovery Ordinance	No	Local	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	Local	No	-	-
Comment:					
Other: Municipal Separate Storm Sewer System (MS4)	Yes	Local	Yes	-	-
Comment: Chapter 192 (Sewers and Water)					
Other: [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	Local	No		
Comment: Chapter 197 (Soil Control) Article I (Soil Erosion, Sediment Control and Flood Prevention)					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Municipal: Yes/No County: Yes	-	-
Comment: Plan was prepared by Banish Associates. 11/12/2002. Authority is the Planning Board.					
Capital Improvement Plan	Yes	Local	Allowed	-	-
Comment: 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.					
Disaster Debris Management Plan	No	Local	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Floodplain or Watershed Plan	No	Local	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local	Yes	-	-
Comment: Authority is Governing Body/Engineer and is updated "as needed". Reference Chapter 201 Stormwater Management adopted by the Mayor and Council of the Borough of Chester 2-7-2006 by Ord. No. 2006.					
Stormwater Pollution Prevention Plan	Yes	State	Yes	-	-
Comment: Comment: Revised 9/20/2019. 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).					
Urban Water Management Plan	No	Local	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8). Addressed in the master plan.					
Economic Development Plan	Yes	Local	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.) addressed in the master plan.					
Shoreline Management Plan	No	Local	No	-	-
Comment:					
Community Wildfire Protection Plan	No	Local	No	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	-	-
Comment: The Borough' Second Community Forest Management Plan dated 2018-2022 is prepared in accordance with the NJ Shade Tree Commission and provides a guide to create, protect, sustain, and manage a robust healthy tree resource for the environment, aesthetic, and economic benefit of residents, visitors, and businesses.					
Transportation Plan	No	Local	No	-	-
Comment:					
Agriculture Plan	No	Local	No	-	-
Comment:					
Climate Action Plan	No	Local	No	-	-
Comment:					
Tourism Plan	Yes	Local	No	-	-
Comment: Addressed in the master plan.					
Business Development Plan	No	Local	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Addressed in the master plan.					
Other: Shade Tree Commission	Yes	Local	No	-	-
Comment: 40:37-5. Powers; regulations; trees on highways; parks. The shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county with exceptions noted in the law.					
Other: Open Space Plan	Yes	Local	No	-	-
Comment: Updated by the Governing Body/Planning Board 1/28/2010					
Other: Historic Preservation	Yes	Local	No	-	-
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	EOP= Yes	-	-
Comment: Chief of Police Updates the Plan					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Local	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	Local	No	-	-
Comment:					
Continuity of Operations Plan	No	Local	No	-	-
Comment:					
Public Health Plan	Yes	Local	No	-	-
Comment: The public health annex is updated yearly. Also, reference Chapter 249 of the Borough code, adopted by the Board of Health of the Borough of Chester 3-20-1980 as Ch. BH:IV of the 1980 Code					
Other	-	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Chester.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board Secretary
Mitigation Planning Committee	No	
Environmental Board / Commission	Yes	Committee
Open Space Board / Committee	Yes	Committee- no employees, volunteer positions
Economic Development Commission / Committee	No	Borough is working on developing and Economic Development Committee
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	There is a warning siren but it needs to be replaced.
Maintenance program to reduce risk	Yes	The Borough has an MS4 plan, and maintains drainage and stormwater detention infrastructure
Mutual aid agreements	Yes	Red Cross; Fire Mutual Aid (county-wide)
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Professional Services, not employees
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering, professional services
Planners or engineers with an understanding of natural hazards	Yes	Paul Ferriero, Contractor
Staff with training in benefit/cost analysis	Yes	Paul Ferriero, Contractor
Staff with training in green infrastructure	Yes/No	Paul Ferriero, Contractor
Staff with education/knowledge/training in low impact development	Yes/No	Paul Ferriero, Contractor
Surveyor	Yes	Paul Ferriero, Contractor
Stormwater engineer	Yes/No	Paul Ferriero, Contractor
Personnel skilled or trained in GIS applications	Yes/No	Paul Ferriero, Contractor
Local or state water quality professional	Yes/No	Paul Ferriero, Contractor
Scientist familiar with natural hazards in local area	Yes	Paul Ferriero, Contractor
Emergency manager	Yes/No	Edward Windt
Watershed planner	Yes/No	No
Environmental specialist	Yes/No	No
Grant writers	Yes	Paul Ferriero, Contractor
Resilience Officer	No	-
Other	Yes	Paul Ferriero, Contractor

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Chester.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, eligible to apply for, administrator
Capital Improvements Project Funding	Yes, Governing Body puts in budget, CFO administers funding
Authority to Levy Taxes for Specific Purposes	Yes, Governing Body
User Fees for Water, Sewer, Gas or Electric Service	Yes, Sewer, Governing Body
Incur Debt through General Obligation Bonds	Yes, Governing Body, CFO administers
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other: Open Space Acquisition Funding Programs	Yes, Governing Body

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Chester.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	SwiftReach, Reverse 911, AM Radio Station 1780, Website and Social Media (FaceBook and Twitter)
Do you have any established warning systems for hazard events? • If yes, briefly describe.	No

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Chester.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	Date
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	Date
Public Protection (Fire ISO Protection Class)	Yes	4/8B	6/27/2011
Storm Ready Certification	No	-	Date
Firewise Community Classification	No	-	Date
Sustainable Jersey	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

The Borough of Chester does not participate in the National Flood Insurance Program.

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Chester that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Chester has significant exposure. Refer to Figure 1 and Figure 2.

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2.2 REPETITIVE FLOOD LOSSES

There is no repetitive loss data available as the Borough does not participate in the NFIP.

2.3 CRITICAL FACILITIES

There are no NFIP-mapped floodplains in the Borough.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Chester reviewed the results of the hazard ranking as shown below and confirmed the indicated ranking in agreement with the calculated results for all hazards.

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Borough of Chester reported no completed actions.

2.6 CANCELLED ACTIONS

Borough of Chester reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Chester Borough	Backup Power for Municipal Building: Install back-up power for the Municipal Building at 50 North Road, which houses DPW, Board of Education, warming center, and most municipal departments.	The Borough Municipal Building is a designated critical and lifeline facility and does not have back up power for uninterrupted power supply for frequent power outages during which necessitates administrative shutdown at these times.	The Borough Engineer will research what size generator is necessary to supply backup power the Municipal building. The Borough will then purchase and install a generator.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Chester Borough	Undergrounding Electric Utilities	Above ground electrical utilities (power, cable, telephone) are vulnerable to damage caused by fallen limbs during severe weather events which result in potential utility interruptions.	Hardening/retrofitting and burying utility lines within the Borough that are identified as particularly vulnerable to power outages, specifically Fairmount Avenue, Grove Street, Budd Avenue, Hillside, and Main Street.	Yes	Not Started
3	Chester Borough	NFIP Initiative	Currently the town does not participate in the NFIP, precluding property owners from obtaining NFIP insurance.	Evaluate participation in NFIP: Evaluate the need for and benefits of joining the NFIP and join the NFIP if found to be worthwhile for the Borough and its constituents.	Yes	Not Started
4	Chester Borough	All-Hazards Public Education Program	There is a need to protect residents from harmful potential natural hazards on private property and to educate the public on the impacts/mitigation of natural hazards.	Develop a multi-pronged educational outreach program to provide critical information to residents on methods to reduce their vulnerability to natural hazards such as vegetation management, ash tree removal, etc.	Yes	Not Started
5	Chester Borough	Mobile Municipal Message Board	The Borough needs an effective method to distribute information during hazard events when internet and utilities down.	Purchase a variable message board trailer to deploy in affected areas.	Yes	Not Started

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	All hazards	Goal 1		Borough Administrator		FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	
2	Severe Weather	Severe winter weather	Goal 1		Borough Administrator		FEMA HMA, local match	
3	Flood		Goal 4	Goal 5	Borough Administrator		Operating Budget	

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
4	Severe Weather	All hazards	Goal 2	Goal 1	Borough Administrator		Operating budget, HMA funding	
5	Severe Winter Weather	All hazards	Goal 1	Goal 2	Borough Administrator		Operating budget,	

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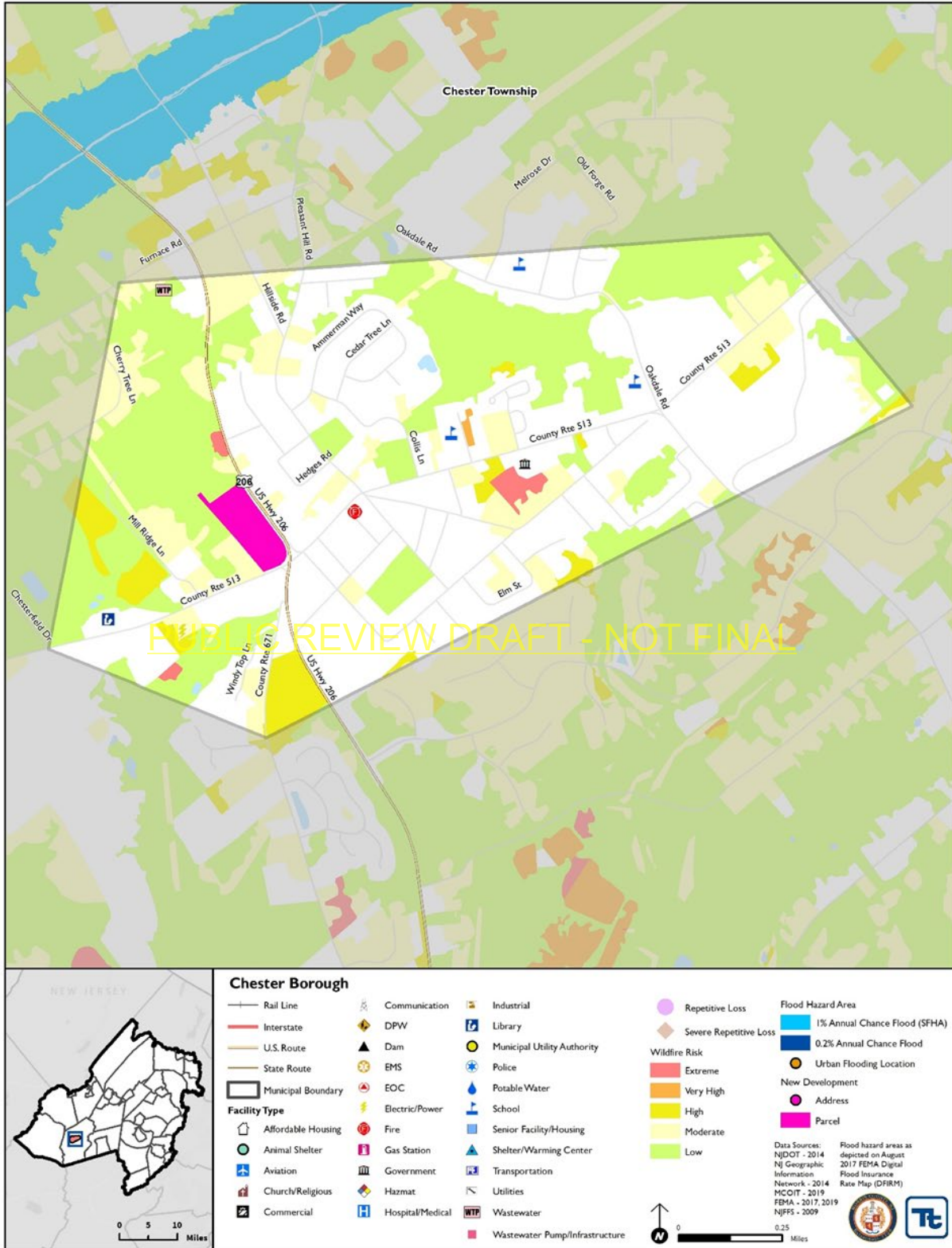
2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the main hazard from the 2025 update that the action mitigates?	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Severe Weather	\$250k-\$500k	3-5 years	2	1	1	1	2	7	Low
2	Severe Weather	Over \$1M	3-5 years	2	2	3	3	2	12	Medium

	What is the main hazard from the 2025 update that the action mitigates?	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
3	Flood	Under \$50k	1-3 years	1	3	1	3	2	10	Medium
4	Severe Weather	Under \$50k	1-3 years	2	2	2	3	2	11	Medium
5	Severe Winter Weather	Under \$50k	1-3 years	2	1	2	2	2	9	Medium

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Figure 1: Borough of Chester Hazard Area Extent and Location Map



APPENDIX 4: BOROUGH OF FLORHAM PARK COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Florham Park and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) Chapter 112.					
Zoning Code	Yes	Local	Yes, if have planning board	No	No
Comment: State permissive on local level. [note local ordinance # and date of adoption]. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Updated Regularly. Enforced by Zoning Officer, Chapter 250.					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Enforced by Zoning, Chapter 212.					
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Engineering, Chapter 213.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	No	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes, if have planning board	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes, if have planning board	No	No
Comment: 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 freeholders 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. Enforced by Engineering/Planning Board, Chapter 212.					
Environmental Protection	No	-	No	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	No	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Enforced by Engineer, Chapter 215.14.					
Wellhead Protection	Yes	-	No	-	-
Comment: 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)).					
Emergency Management	No	-	No	-	-
Comment: 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	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Master Plan	Yes	Who is responsible organization?	Yes	No	No
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Enforced by Borough Planner, 2005. Updated annually; building addendum added in 2011, housing element to comply with COAH added in 2017.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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. Enforced by Borough Engineer, CFO, 2014.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332)					
Stormwater Management Plan	Yes	Local	Yes	No	No
Comment: 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). Enforced by Borough Engineer, SWPPP 2019, SWMP 2014. Annual updates provided to State. July 2008. http://www.fpboro.net/wp-content/uploads/2018/02/Stormwater-Management-Plan-Revised-07-08.pdf					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	No
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). April 2019. http://www.fpboro.net/wp-content/uploads/2019/06/Stormwater-Pollution-Prevention-Plan.pdf					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes		No	-	-
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	-	-
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4).					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other:	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. Enforced by OEM, All Hazard Plan, February 2014.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
- If no, who does? If yes, which department?	Building Department
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Redevelopment only.

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Florham Park.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	Consists of several municipal departments
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Engineering, DPW, Police Department
Maintenance program to reduce risk	Yes	Engineering, DPW
Mutual aid agreements	Yes	Shared services with surrounding municipalities
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer/Construction Official
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	Yes	Borough Engineer
Staff with education/knowledge/training in low impact development	Yes	Borough Engineer and Planner
Surveyor	Yes	Contracted out by borough annually
Stormwater engineer	Yes	-Subcontracted as needed
Personnel skilled or trained in GIS applications	Yes	Engineering Department
Local or state water quality professional	Yes	Water Superintendent
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM Coordinator
Grant writers	Yes	Internal departments write grants
Resilience Officer	No	-
Watershed planner	Yes	Borough Planner

Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental specialist	Yes	Engineering Department
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Florham Park.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Yes, DEP Green Acres, Morris County Open Space

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Florham Park.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes. Police Department
Do you have personnel skilled or trained in website development?	No Staff can update existing, vendor for development changes.
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook, Twitter, RAVE Alert Florham, Instagram
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Environmental Commission
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes RAVE Alert Florham(reverse 911)
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes RAVE Alert Florham(reverse 911), Register Ready link

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Florham Park.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	_____	Date
Building Code Effectiveness Grading Schedule (BCEGS)	No	_____	Date
Public Protection (Fire ISO Protection Class)	Yes	3	Unknown
Storm Ready Certification	No	_____	Date
Firewise Community Classification	No	_____	Date
Sustainable Jersey	No	_____	_____

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Engineering/Asst. Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	5/15/01
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	n/a
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes Morris County maps are in appeal
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No n/a Yes
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	70 \$26,855,000 \$72,257
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	8 0 Open, 4 Closed without payment \$68,795

Criterion	Response
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Florham Park that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Florham Park has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Florham Park.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Sewer Pump Station – Hassock Brook (293 Columbia Turnpike)*	Wastewater	x	X
Sewer Pump Station – Black Brook (329 Columbia Turnpike)*	Wastewater	x	x

Source: Morris County, 2019; FEMA 2014/2017/2018; HAZUS-MH v4.2, <https://nid.sec.usace.army.mil/ords/f?p=105:113:8713532089703::NO::>

* Lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Florham Park has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Borough agreed with the calculated 2020 hazard rankings.

Table 9: Borough of Florham Park Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High

Hazard	Ranking	Hazard	Ranking
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Borough of Florham Park did not report any completed actions.

2.6 CANCELLED ACTIONS

The following actions were cancelled:

- **Action:** Purchase and install a generator to provide backup power and mitigate essential communications disruptions. The pipe will be upsized when the road is milled and paved. This is expected to take place in the next 5 years. **Reason provided:** No reason provided.
- **Action:** Culvert upsizing during road maintenance project. **Reason provided:** The wetlands and flood hazard areas were delineated, and it was determined that no work would be permitted in this area. The Borough also does not have easements to some of the required area.
- **Action:** Notify Triumph Development that Dam #2 is a critical facility in the floodplain. Update Florham Park's EOP to include information regarding the dam and potentially the dam's Emergency Action Plan. Reason provided:

PUBLIC REVIEW DRAFT - NOT FINAL

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Florham Park	Hassock Brook Sewer Pump Station Flooding	Hassock Brook Sewer Pump Station is a critical facility in the floodplain.	Conduct a study to determine extent of flooding expected in the area around the facility, as well as expected facility vulnerability to flood. Once the study is complete, develop a strategy to mitigate identified vulnerabilities and their consequences.	Yes	Not Started
2	Florham Park	Black Brook Sewer Pump Station Flooding	Black Brook Sewer Pump Station is a critical facility in the floodplain.	Conduct a study to determine extent of flooding expected in the area around the facility, as well as expected facility vulnerability to flood. Once the study is complete, develop a strategy to mitigate identified vulnerabilities and their consequences.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
3	Florham Park	Ridgedale Middle School Primary Shelter	Upgrade backup power for Ridgedale Middle School to be used as the primary shelter. Currently only the elevators are on generator. The middle school shelters residents without power at their homes and provides warmth.	Work with the Florham Park Board of Education to obtain and install a generator for the entire Ridgedale Middle School. Florham Park has communicated with the Board of Education and this is part of the referendum and is scheduled to take place early spring/summer 2024.	Yes	Not Started
4	Florham Park	Senior Center Warming Facility	Florham Park Senior Center is Borough owned, serves as a warming/charging station, and does not have backup power.	Design, purchase, and install generator.	Yes	Not Started
5	Florham Park	Edgewood and Circle Road Flooding	Edgewood and Circle Road floods during heavy rains. Stormwater lines back up from Passaic River.	Drainage upgrades during road maintenance project.	Yes	Not Started
6	Florham Park	Sewer plant backup	Sewage Plant did not have power during Superstorm Sandy, as Diesel was not available due to shortages.	Investigate upgrade from diesel generators to natural gas or multisource conversion. This project is under contract and the generator has been ordered. Supply issues have delayed the project and it is expected to be completed in 2 years.	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 3	Goal 1	<u>Engineering</u>		Capital budget, HMGP, PDM	High
2	Flood		Goal 3	Goal 1	<u>Engineering</u>		Capital budget, HMGP, PDM	High
3	Severe Weather	Severe Winter Weather	Goal 1		<u>Engineering, Board of Education</u>	Board of Education	Capital budget, HMGP, PDM	Medium
4	Severe Weather	Severe Winter Weather	Goal 1		<u>Engineering</u>		Capital budget, HMGP, PDM	Medium
5	Flood		Goal 1		<u>Engineering</u>		Capital budget, HMGP, PDM	High
6	Flood		Goal 1		<u>Engineering</u>		Capital budget, HMGP, PDM	High

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$250,000.00	3-5 years	1	1	1	1	1	5	
2	\$250,000.00	3-5 years	1	1	1	1	1	5	
3	Unknown	Under 1 year	2	1	3	1	1	8	
4	\$30,000.00	3-5 years	1	1	1	1	1	5	
5	\$30,000.00	3-5 years	1	1	1	1	1	5	
6	1 million	Under 1 year	1	3	2	2	1	9	

Figure 1: Borough of Florham Park Hazard Area Extent and Location Map 1

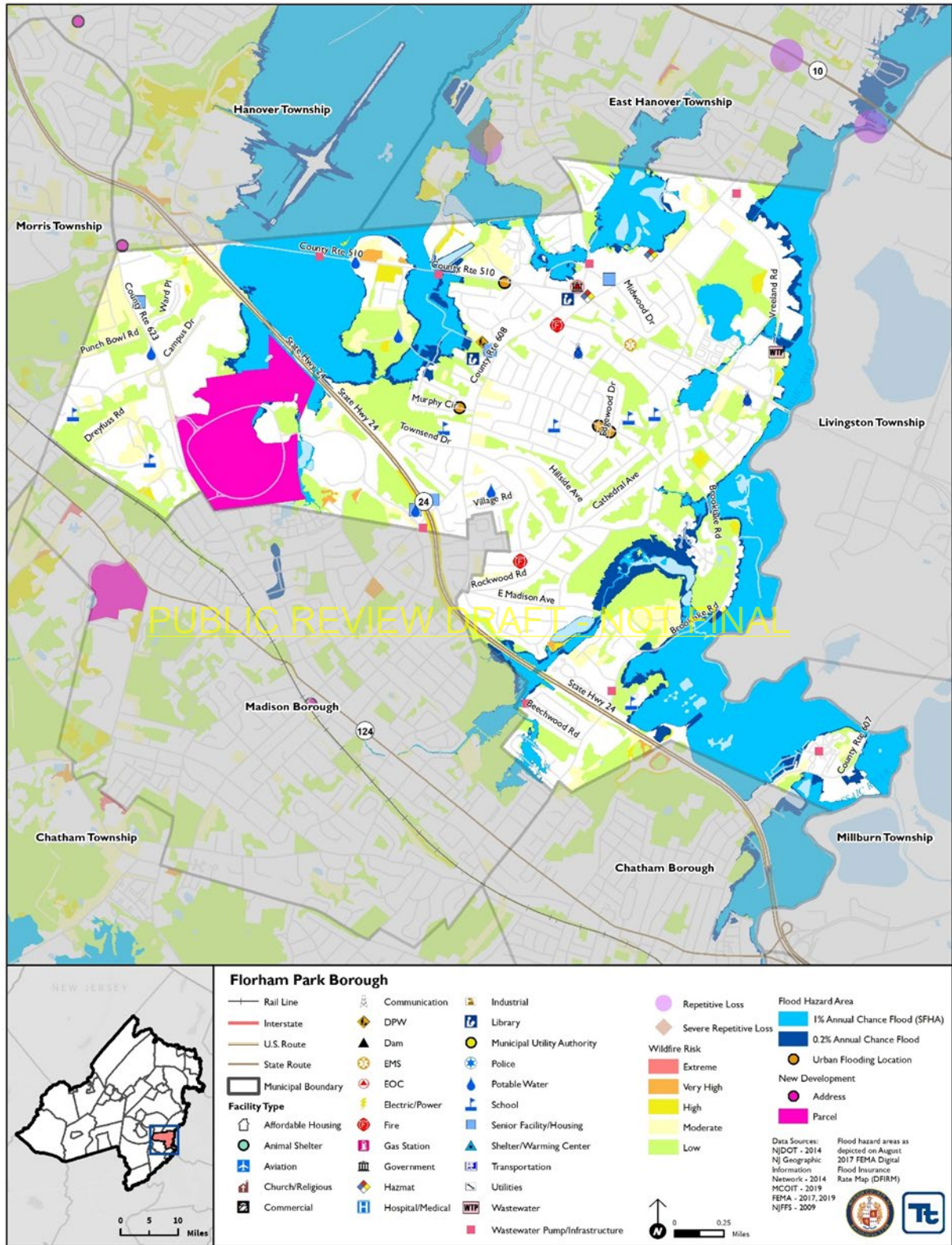
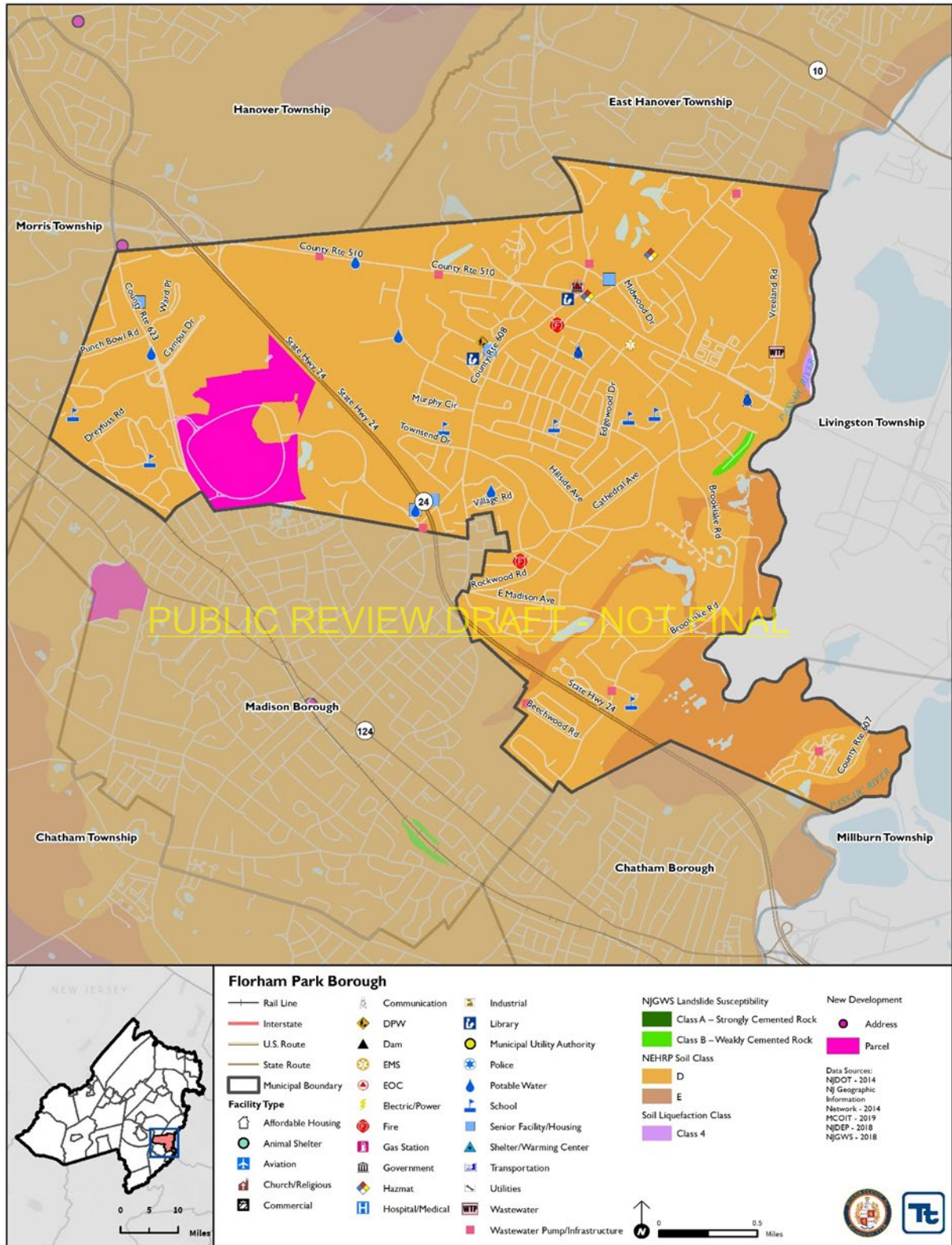


Figure 2: Borough of Florham Park Hazard Area Extent and Location Map 2



APPENDIX 5: BOROUGH OF KINNELON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Kinnelon and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Administered by the Planning Board. Chapter 105 Construction Codes, Uniform.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter 207 Zoning. Administered by the Zoning Board. Zoning ordinance includes a chapter on environmentally sensitive areas. It is the purpose of this article to protect the health, safety and welfare of people and property within the Borough of Kinnelon from improper construction, building and development on steep slope and hillside areas in the Borough of Kinnelon and, more particularly, but without limitation, to reduce the peculiar hazards which exist in hillside areas by reason of erosion, siltation, flooding, soil slippage, surface water runoff, pollution of potable water supplies from nonpoint sources and the destruction of unique and predominant views					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 176 Subdivision of Land and Site Plans. Administered by the Planning Board.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 172 Stormwater Control, administered by the DPW.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level;					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	No	-
Comment: Administered by the Planning Board.					
Environmental Protection	Yes	State and Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 50 Open Space, Recreation, and Farmland and Historic Preservation Trust Fund, Municipal. Chapter 141 Littering and Property Maintenance. Chapter 169 Soil Disturbance. Chapter 170 Soil and Plant Fertilizers. Chapter 186 Tree Removal. Chapter 199 Water.					
Flood Damage Prevention	No	-	Yes	-	-
Comment: The Borough does not participate in the NFIP.					
Wellhead Protection	Yes	Local	-	-	-
Comment: Chapter 176 Subdivision of Land and Site Plans Art XIV Submission Requirements for Development within Highlands Area.					
Emergency Management	Yes	Local	-	No	-
Comment: Chapter 33, Fire Company, Volunteer; Chapter 56, Police Department					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Hazardous Material Ordinance	Yes	Local	-	-	-
Comment: Chapter 133 Hazardous Materials. This article provides for the reimbursement for or the replacement of the specialized and sometimes non-reusable equipment required by state and federal regulations to be made available in the Borough in case of fire, release or threatened release involving any hazardous material, as well as the reimbursement of all other costs for expended resources. This article entitles the Borough of Kinnelon to reimbursement for the cost of any expended resources used by the Borough or any of its agencies in extinguishing any fire, stopping or containing any release of hazardous material and generally taking any emergency action.					
Soil Erosion and Sediment Control	Yes	Local	-	-	-
Comment: Chapter 167 Soil and Sediment Control. The purpose of this chapter is to control soil erosion and sediment damages and related environmental damage by requiring adequate provisions for surface water retention and drainage and for the protection of exposed soil surfaces in order to promote the safety, public health, convenience and general welfare of the community.					
Planning Documents					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment: First master plan document was adopted in 1954. The most recent Periodic Reexamination Report of the Master Plan was adopted on June 3, 2015. The Plan includes maps for preserved lands, Highlands Conservation Priority Areas, preserved land, open space, steep slopes, environmental constraints, wellhead protection areas, prime ground water recharge areas, steep slope protection areas, and critical wildlife habitat. Administered by the Planning Board. Hazard mitigation related goals include: rebuild Fire Company #1; to encourage and provide buffer zones to separate incompatible land uses.; to ensure that any prospective development and/or redevelopment is responsive to Kinnelon's environmental features and can be accommodated within the capacity of the community's infrastructure systems; to ensure that any prospective development and/or redevelopment is responsive to Kinnelon's environmental features and can be accommodated within the capacity of the community's infrastructure systems.					
Capital Improvement Plan	Yes	Local	Allowed	Yes	-
Comment: 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. Administered by the Administration.					
Disaster Debris Management Plan	Yes	Local	No	Yes	-
Comment: Detailed within EOP					
Floodplain or Watershed Plan	No	-	No	-	-
Comment: Floodplain/Watershed Planning is done through NJ Highlands Preservation Regulations – NJDEP Oversight.					
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: 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). Code Chapter 172, #8-07.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes	-
Comment: SPPP is required by the NJDEP MS4 Permit for Tier A Municipalities.					
Urban Water Management Plan	No	-	-	-	No
Comment: Kinnelon Borough situated within NJ Highlands Preservation Zone and is required to meet NJDEP Regulations.					
Habitat Conservation Plan	Yes	NJDEP/Highlands Preservation	Yes	Yes	-
Comment: Kinnelon Borough situated within NJ Highlands Preservation Zone and is required to meet NJDEP Regulations.					
Economic Development Plan	No	-	No	-	-
Comment: Kinnelon Borough 97.7% Situated in NJ Highlands Preservation Zone					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	Yes	Local	No	Yes	-
Comment: Wildfire protection is covered by the EOP. Mutual Aid Agreements with adjacent Municipalities and NJ Forest Service.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Community Forest Management Plan	Yes	State	NJDEP/Highlands Preservation Regulations	Yes	-
Comment: Kinnelon Borough situated within NJ Highlands Preservation Zone and is required to meet NJDEP Regulations.					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment: Kinnelon Borough is located within NJ Highlands Preservation Zone. This restricts Commercial Development/No central Utilities.					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
Comment: 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. Current Emergency Operations Plan was approved in 2018.					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	-	Yes	-
Comment: As part of EOP of 2018.					
Post-Disaster Recovery Plan	No	Local	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	Yes	-
Comment: As part of EOP of 2018.					
Public Health Plan	Yes	Local	Yes	Yes	-
Comment: As part of EOP of 2018. Shared services with Pequannock Township Board of Health.					
Other	No	-	-	-	-

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes; Engineering, Construction, Land Use Board
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, was completed during the Affordable Housing Study (2018)

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Kinnelon.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	EMO
Environmental Board / Commission	Yes	Kinnelon Borough Environmental Commission
Open Space Board / Committee	Yes	Open Space Advisory Committee
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Nixle, Emailing; Outdoor Signage
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Fire/Police/EMS/Ambulance; Red Cross Disaster Agreements
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Construction Official Chris Walthour, Borough Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer Tom Boorady
Planners or engineers with an understanding of natural hazards	Yes	Construction Official Chris Walthour
Staff with training in benefit/cost analysis	Yes	Borough Engineer Tom Boorady
Staff with training in green infrastructure	Yes	Borough Engineer
Staff with education/knowledge/training in low impact development	Yes	Borough CFO, Borough Engineer
Surveyor	Yes	Borough Engineer
Stormwater engineer	Yes	Borough Engineer
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	Yes	Borough Engineer & Crew Engineering
Scientist familiar with natural hazards in local area	Yes	Borough Engineer
Emergency manager	Yes	OEM Coordinator
Watershed planner	No	NJ DEP & Highlands Preservation Zone Regulations
Environmental specialist	No	NJ DEP & Highlands Preservation Zone Regulations
Grant writers	No	-

Staff/Personnel Resource	Available?	Department/Agency/Position
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Kinnelon.

Table 4: Fiscal Capabilities

Financial Resource
Community Development Block Grants (CDBG, CDBG-DR)
Capital Improvements Project Funding
Authority to Levy Taxes for Specific Purposes
User Fees for Water, Sewer, Gas or Electric Service
Incur Debt through General Obligation Bonds
Incur Debt through Special Tax Bonds
Incur Debt through Private Activity Bonds
Withhold Public Expenditures in Hazard-Prone Areas
State-Sponsored Grant Programs
Development Impact Fees for Homebuyers or Developers
Clean Water Act 319 Grants (Nonpoint Source Pollution)
Other NJ Highlands Preservation Zone – NJDEP Freshwater Act

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Kinnelon.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Police Chief John Schwartz; OEM Randall I. Charles; Mayor James Freda
Do you have personnel skilled or trained in website development?	Yes, Jennifer Highers
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, Borough Website
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, Borough Website/Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Borough Engineer, Planning Board, Kinnelon Police Dept, KVFC, Kinnelon OEM
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Nixle, Register Ready, Kinnelon Borough Website/Facebook/Social Media, 4 Electronic Message Bds, Bd of Education Website/Facebook/5 Schools Parent/Student eBlast Lists, Smoke Rise Club Website/Facebook/1,000 Resident eBlast List, Board of Health Website/Facebook
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Nixle, Register Ready

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Kinnelon.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes		
Public Protection (Fire ISO Protection Class)	No	-	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	none	7/22/2011

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

The Borough of Kinnelon does not participate in the National Flood Insurance Program.

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Kinnelon that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Kinnelon has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The Borough of Kinnelon does not participate in the National Flood Insurance Program. Repetitive flood losses are not tracked.

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Charlotteburg Dam/Reservoir	Dam	X	X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough

of Kinnelon has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. The Borough agreed with the calculated hazard rankings.

Table 9: Borough of Kinnelon Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Completed actions include:

- **Action:** Emergency Shelter backup power is needed to provide power to the new shelter. **Notes:** Underground utilities have been extended to the site - completed 2023.

2.6 CANCELLED ACTIONS

Borough of Kinnelon did not report any cancelled actions.

PUBLIC REVIEW DRAFT - NOT FINAL

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Kinnelon Borough	Dam Studies Assessment	There are 19 dams in the Borough. The Charlottesville Reservoir Dam is located in the floodplain and is considered a critical facility. Butler River Dam, Butler Reservoir Dam and Charlottesville Dam failure would have widespread flooding impacts across the Borough.	Conduct safety survey of dams and determine any improvements that must be made to increase safety. Implement protections.	Y	In Progress
2	Kinnelon Borough	Develop public water system	Water Supply can be impacted by drought, lack of public water; emergency services arrive on scene with water but are limited.	Conduct engineering study to determine if development of public water system is warranted and implement selected actions.	Y	In Progress
3	Kinnelon Borough	Pipelines survey and protection	Pipelines exist along Route 23 in Kinnelon Borough.	Conduct feasibility assessment to determine vulnerable areas of pipelines and necessary protections. Implement protections.	Y	Ongoing
4	Kinnelon Borough	Removal of dangerous trees	Severe storms and severe winter storms can result in downed trees and wires.	Conduct survey to identify problem trees. Remove problem trees or branches near wires and property.	Y	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
5	Kinnelon Borough	Install 5 Underground Water Supply Tanks for Fire Company/Emergency Services	Inadequate water supply. The majority of the Borough does not have municipal water/fire hydrants for fire company to access. Fire company apparatus carries water to fight fires. Mutual aid neighboring fire companies need to be called to provide water.	Conduct location/water tank capacity survey to determine placement of 5 underground water tanks. Carry out installation.	Y	In Progress
6	Kinnelon Borough	Increased hazard outreach	The Borough has numerous high hazards of concern that could impact residents.	Increase outreach on hazards of concern for the Borough.	Y	In Progress
7	Kinnelon Borough	DPW Monitoring culverts and drainage	culverts are constantly watched and monitored	improve the size the of culverts on	N	New
8	Kinnelon Borough	Improve Mobile Communications and Emergency and Interoperability	Lack of interoperability impacting emergency operations, and lack of mobile communications	Add new towers to aid in mobile communications and assist with emergency interoperability	Y	New

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flooding	Potential Road closures Rt. 23 - local roads accessibility, Loss of Life, Property several downstream municipalities; Loss of Drinking Water for several million North Jersey Major Cities/Urban areas.	Goal 1	Constant Surveillance for Maintenance Issues and Prevention of Terrorism on Reservoir Dams	<u>Engineering provided by NJDEP, NJMUA, Reservoir Operators and Private Dams through HOAs and private owners (very small dams)</u>	City of Newark Peq. Watershed Charlottesville Res; Butler Water Co. Butler Reservoir /Takeout);Boonton Water Co (Boonton Reservoir); Jersey City Water Co (Splitrock Reservoir)	NJDEP, NJMUA, Reservoir Operators, USEPA Inspections/Reports	Potential Flooding, Terrorism, Loss of Drinking Water to several million NJ residents.
2	Drought	Potential Mod/Severe Droughts as 75% of Borough relies on "Wells" and Butler Reservoir Water. Emergency Vehicles "Carry Water" to Emergencies	Goal 1	Improve Water Reliability in Drought situations and availability of KVFC access to Reliable Water.	<u>Administration</u>	Butler Water Co; Kinnelon Borough for funding	Municipal Budget	Minimizes Drought Impact and the new Denise Drive 225K gal Water Tank is on-line Jan. 2024 that will improve Volume, Pressure and supply for Emergency Services.

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
3	Hazardous Substances	Ongoing Assessments with both NJDOT, Newark Water for Pipeline Conduit, Natural Gas pipeline & NJCP&L High Power lines	Goal 1	Working with NJDOT on New Bridge; Newark Water on Rt. 23 Conduit.	<u>Borough Engineer, KOEM, NJDOT, Newark Water; NJCP&L</u>	Borough Engineer, KOEM, NJDOT, Newark Water, NJCP&L	HMGP, Municipal budget	Prevention or rupture or spill of pipelines.
4	Wildfire	Municipality is Funding Ash Tree Removal within DPW Budget Alleviate Loss of Power, Road Closures, Structure damage.	Goal 1	Infected Trees falling into Reservoirs, Lakes, Ponds, streams tainting the Water	<u>Public Works</u>	Borough Engineer, KOEM, NJCP&L, Borough Forester, Butler Electric, Fayson Laks Water Co.	Municipal budget	Reduction in falling trees, power losses, Impact Reservoir Water Supply to Local and North Jersey Populated Cities. Road Closures, Structure Damage, Loss of lives.

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
5	Wildfire	Opportunity to Contract Professional Org to undertake Complete Assessment of Municipal Firefighting Capabilities - Improvements an Proposed Costs - long-term Improvement of Fire Fighting Capabilities and Water Resources.	Goal 1	Identify Long-Term Improvements for Firefighting & Emergency Responses, installation of Additional Water Supply Sources throughout Municipality.	<u>Borough Engineer, KOEM, KVFC, ISO</u>	Municipality has contracted with a Co. that specializes in Identifying Grants and Submitting Applications to obtain potential Grants to fund these Projects.	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Increased water supply for fire suppression and wildfire protection
6	Severe Weather	Unreliable Emergency Information/Notification System	Goal 1	Provides 24/7 Emergency Notification/Information to All residents.	<u>OEM</u>	KPD, DPW, Bd of Ed, Butler Electric,JCP&L, KVFC.	Municipal budget	Increased public awareness
7	Flooding	Minimize Road Closure and Flooding of Adjacent properties	Goal 1	Flooding of adjacent Commercial Properties,	HMGP, NJDOT Funding - State Rt. 23.	NJDOT	HMGP, NJDOT	Prevention of road closures of State Rte.23 N/S, only major North Highway
8	Severe Weather	Includes Emerg Generator	Goal 1	Reliable 24/7 Emergency Communication with NJSP/County, Municipal EM Services	OEM	MC Dept of Law Public Safety	Outside funds, Municipal Budget	increase communications, and emergency communications

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	Ongoing	3	3	3	3	3	15	High
2	\$750k - \$1M	On-going	3	3	3	3	3	15	High
3	Under \$50k	Ongoing	3	2	3	3	3	14	High
4	Under \$50k	Ongoing Inspections/observations by Kinnelon DPW/KPD, Butler Elect, JCP&L.	3	3	3	3	3	15	High
5	\$250k - \$500k	Ongoing	3	3	3	3	3	15	High
6	Under \$50k	COMPLETED/implemented Jan. 2024.	3	3	3	3	3	15	High
7	Under \$50k	NJDOT has listed as Priority Repair Spring 2024.	2	3	3	3		11	Medium
8	Under \$50k	TBD NJ/Morris Cty	3	3	3	3	2	14	High

Figure 1: Borough of Kinnelon Hazard Area Extent and Location Map 1

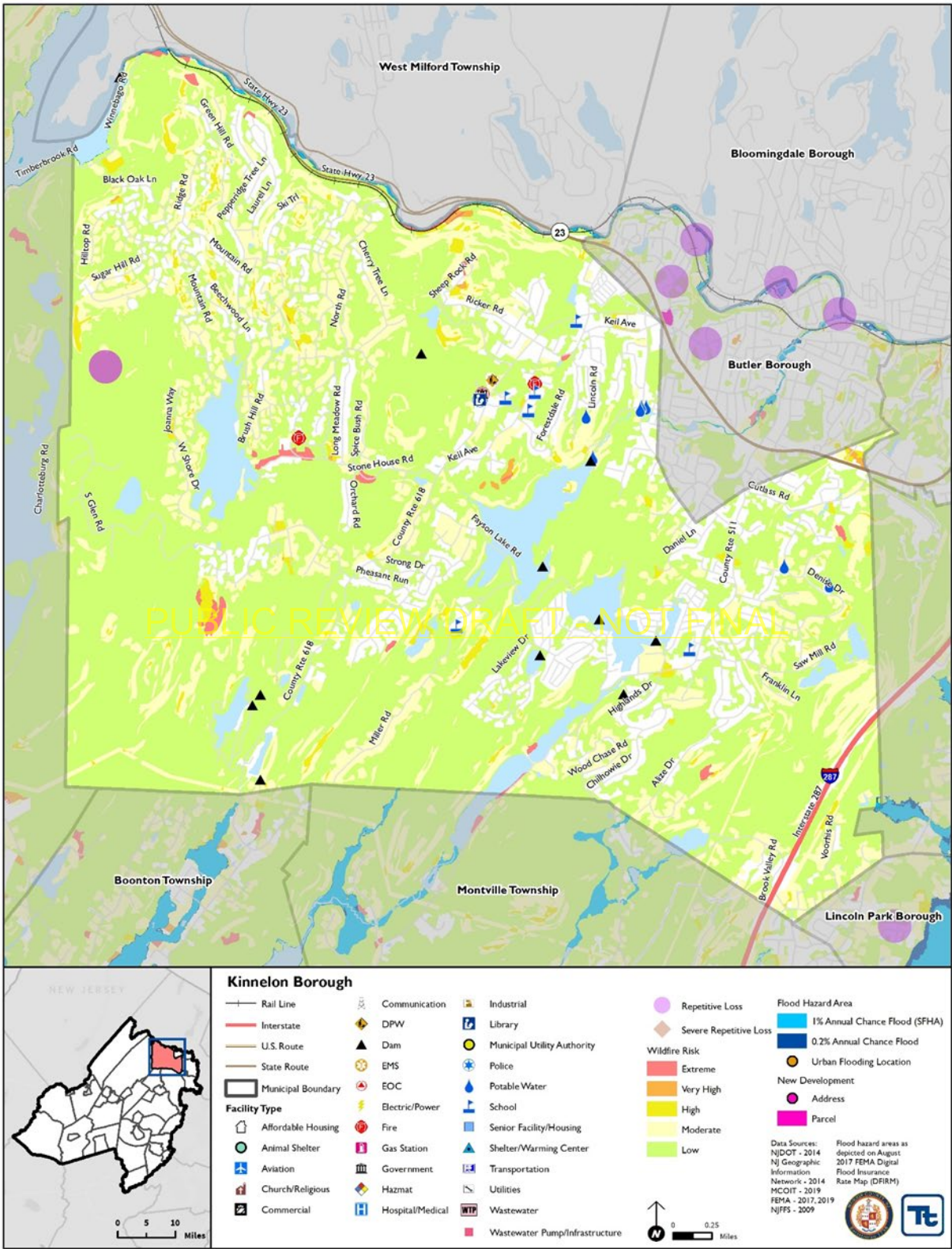
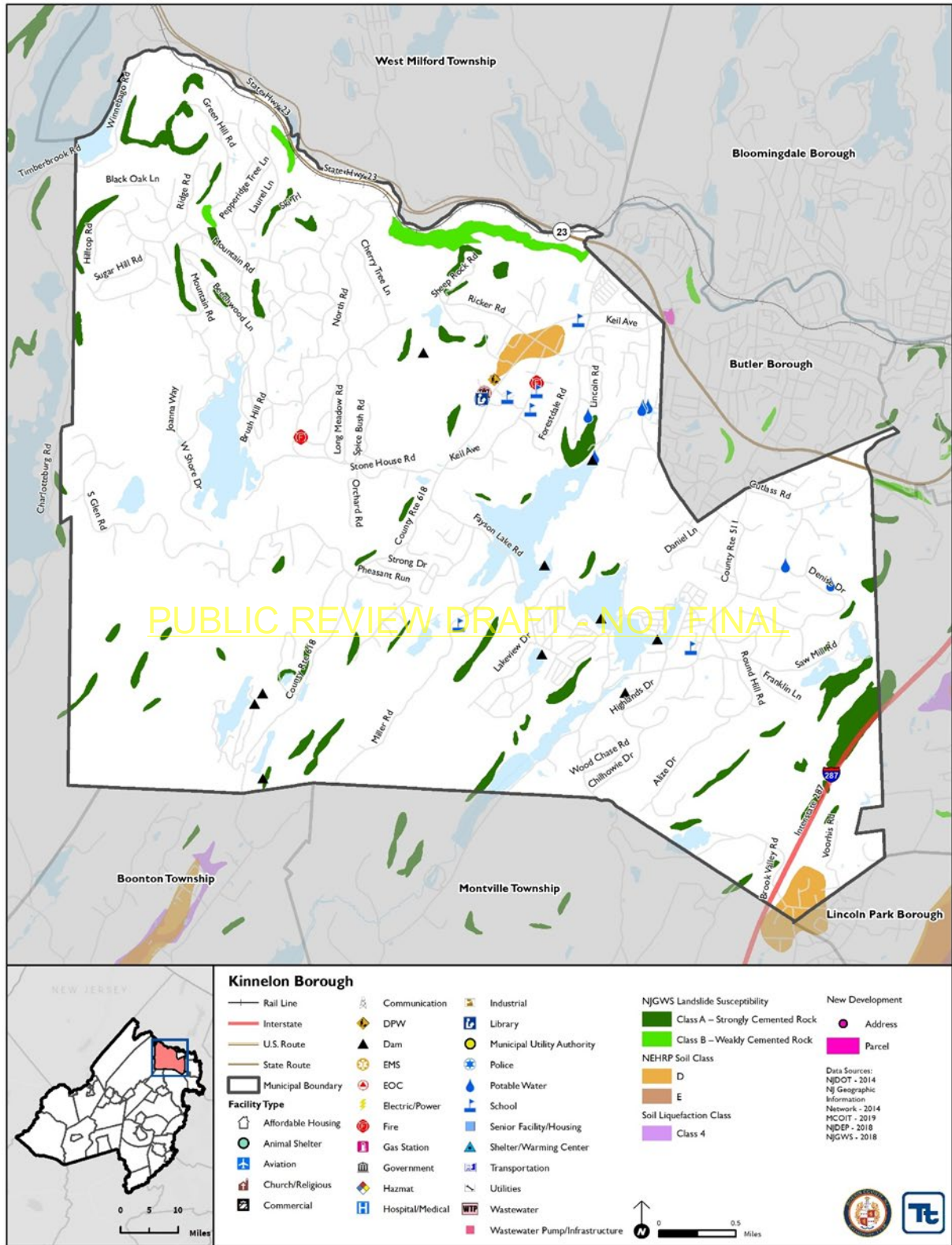


Figure 2: Borough of Kinnelon Hazard Area Extent and Location Map 2



APPENDIX 6: BOROUGH OF LINCOLN PARK COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Lincoln Park and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	-	-
Comment: State mandated on local level under NJAC 5:23-3.14 - International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Uniform Construction Codes, Chapter 213 of the municipal code. Administered by the Division of Building and Zoning.					
Zoning Code	Yes	Local	Yes	-	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Planning and Zoning Ordinance, Chapter 28 of the municipal code. Administered by the Planning Board. The Planning and Zoning Ordinance was adopted to establish a pattern for the use of land and buildings based on the Master Plan and 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 people. The ordinance is intended to regulate the use of land within zoning districts, secure safety from fire flood, panic, and other natural man-made disasters; provide adequate light air, and open space; limit and restrict buildings and structures to specified districts and regulate buildings and structures according to their type and 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 wellbeing of persons, neighborhoods, communities and regions and the preservation of the environment; provide sufficient space for agricultural, 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 land use. The ordinance includes articles on planning and zoning, the Planning Board, the Zoning Board of Adjustment, development review procedures, flood damage prevention, stormwater management, soil removal, and development of steep slope.					
Subdivisions	Yes	Local	Yes	-	-
Comment: Land Development Review, Chapter 17 of the municipal code. Administered by the Planning Board.					
Stormwater Management	Yes	Local	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 28 of the municipal code. Administered by the Planning Board. The ordinance establishes minimum stormwater management requirements and controls for major developments and promotes the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level;					
Shoreline Development	No		Yes	Yes/No	Yes/No
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	No	-	-
Comment: Land Development Review, Chapter 17 of the municipal code. Administered by Planning Board.					
Environmental Protection	No	Local	Yes	-	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	Yes	No	-
Comment: Land Development Review, Flood Damage Prevention. Chapter 17, Article 10 of the municipal code.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	-	-	-
Comment: Fire Department, Chapter 39 of the municipal code. Police Department, Chapter 99 of the municipal code. Intermunicipal Services Agreement, Chapter 55 of the municipal code. The ordinance establishes a reciprocal agreement with each and every municipality within the County of Morris and the contiguous counties of Passaic and Essex for intermunicipal police, fire, and first aid assistance at time of any and all emergencies.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	Yes	-	-	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Hazardous Materials, Chapter 286 of the municipal code. The ordinance provides for the reimbursement and the replacement of expended resources and non-reusable equipment maintained or procured by the municipality/Fire Department and used in the case of a release or threatened release of any hazardous materials. Trees and Shrubs, Chapter 434 of the municipal code. The ordinance provides for the protection of trees and removal of trees, particularly dangerous trees which are determined to be dangerous to public health, safety, or welfare. Water Emergencies, Chapter 465 of the municipal code. Allows for taking measures for the conservation of water for domestic and sanitary purposes and fire protection.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-
Comment: The Borough Master Plan was adopted on October 18, 2012.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local and State	Yes	Yes	No
Comment: 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). Stormwater Ordinance 10-14; 11-14. Administered by the DPW.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes	-
Comment: As per stormwater program requirements.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. Emergency Response Plan is reviewed on this schedule.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local	No	No	No
Comment: Updated 10/9/14. Administered by OEM.					
Continuity of Operations Plan	Yes	Local	No	-	-
Comment:					
Public Health Plan	Yes	Local	No	-	-
Comment: Public Health Plan					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Building Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes, through GIS
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	The Borough is built out with the exception of a few parcels that could be subdivided.

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Lincoln Park.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board, Director of Development
Mitigation Planning Committee	Yes	OEM, Planning
Environmental Board / Commission	No	-
Open Space Board / Committee	No	-
Economic Development Commission / Committee	Yes	Administration
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Reverse 911, social media blasts, Rave
Maintenance program to reduce risk	Yes	Stream clearing as necessary
Mutual aid agreements	Yes	Fire/First Aid/Police
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	Engineer
Planners or engineers with an understanding of natural hazards	Yes	Engineer
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	Yes	Staff trained in green stormwater infrastructure techniques
Staff with education/knowledge/training in low impact development	Yes	Planning Board, Engineer
Surveyor	Yes	Engineer
Stormwater engineer	Yes	Engineer
Personnel skilled or trained in GIS applications	Yes	Engineer
Local or state water quality professional	Yes	-
Scientist familiar with natural hazards in local area	Yes	Engineer
Emergency manager	Yes	OEM/Police
Grant writers	No	-
Resilience Officer	No	-

Staff/Personnel Resource	Available?	Department/Agency/Position
Watershed planner	Yes	Engineer/Floodplain Administrator
Environmental specialist	Yes	Engineer/Floodplain Administrator
Other	Yes	Engineer: trained in damage assessments

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Lincoln Park.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, limited areas
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Open Space Acquisition Funding Programs

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Lincoln Park.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Borough Administrator and Recreation Departments
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, the Borough has a Flood Information Page
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes: Facebook, twitter, website, email, monthly mayors' newsletter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No

Criterion	Response
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes: Recreation Department
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes: Reverse 911, social media blasts, Rave

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Lincoln Park.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	5	2016
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	-	-
Public Protection (Fire ISO Protection Class)	Yes	4	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	October 18, 2019

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Department
Who is your floodplain administrator? (name, department/position)	Sal Marino
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2012
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Exceed, Class 5 in CRS.
When was the most recent Community Assistance Visit or Community Assistance Contact?	March 20, 2017
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state what they are. 	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what they are. 	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If no, state why. 	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
☐ If so, what type of assistance/training is needed?	All training welcome

Criterion	Response
Does your jurisdiction participate in the Community Rating System (CRS)? <ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	Yes, yes
How many flood insurance policies are in force in your jurisdiction? <ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	Flood insurance policies: 619 Insurance in force: \$145,564,100 Premium in force: \$1,315,549
How many total loss claims have been filed in your jurisdiction? <ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	Total loss claims: 3,265 Claims open or closed without payment: 32 Total payments for losses: \$62,787,068
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Lincoln Park that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Lincoln Park has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Lincoln Park.

- Number of repetitive loss (RL) properties: 191
- Number of severe repetitive loss (SRL) properties: 173
- Number of RL/SRL properties that have been mitigated: 72

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Lincoln Park Hose Company 2*	Fire		x
Lincoln Park Airport	Air	x	x
Lincoln Park Station	Rail		x
Two Bridges Sewerage Authority*	Wastewater	x	x
Lincoln Park Borough DPW*	DPW	x	x

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Lincoln Park has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Borough indicated the following:

Table 9: Borough of Lincoln Park Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	Medium
Extreme Temperatures	Moderate	Severe Winter Storm	Medium
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Borough of Lincoln Park did not report any completed actions.

2.6 CANCELLED ACTIONS

Borough of Lincoln Park did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Lincoln Park Borough	Mitigate flood-prone properties, including RL/SRL properties	The Borough has repetitive loss properties.	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. The Borough will focus on acquisition as the primary mitigation action.	Yes	In Progress
2	Lincoln Park Borough	Mitigate Pompton / Passaic River chokepoints	Chokepoints along the Pompton/ Passaic River contribute to flooding.	Mitigate Pompton / Passaic River chokepoints via debris-clearing and/or dredging with an additional focus on the clearing of invasive plant species.	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
3	Lincoln Park Borough	Elevate Two Bridges Road TBSA Treatment Plant	The Two Bridges Sewerage Authority Treatment Plant is located in the floodplain. The facility is privately owned.	Undergo a flood mitigation/engineering study to determine appropriate flood mitigation actions.	Yes	In Progress
4	Lincoln Park Borough	Lincoln Park Airport	The Lincoln Park Airport is located in the 100-year floodplain. The facility is privately owned.	Undergo a flood mitigation/engineering study to determine appropriate flood mitigation actions.	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 5	Goal 1	<u>Borough OEM,</u> <u>Public Works,</u> <u>Engineering</u>	Construction Department	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
2	Flood		Goal 1		<u>Borough OEM, Public Works in cooperation with neighboring jurisdictions</u>		HMA Grants, Army Corp of Engineers	Reduction of impact of drought.
3	Flood		Goal 3		<u>FPA, facility manager</u>		Municipal budget, HMGP, FMA	Reduction in flood risk
4	Flood		Goal 3		<u>FPA, facility manager</u>		Municipal budget, HMGP, FMA	Reduction in flood risk

2.7.3 STRATEGY RAKING AND PRIORITIZATION

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Over \$1M	3-5 Years	2	3	3	3	3	14	High
2	\$250k - \$500k	3-5 Years	1	3	2	3	2	11	Medium
3	\$750k - \$1M	3-5 Years	1	3	2	2	2	10	Medium
4	\$50k - \$250k	3-5 Years	1	3	2	2	2	10	Medium

Figure 1: Borough of Lincoln Park Hazard Area Extent and Location Map 1

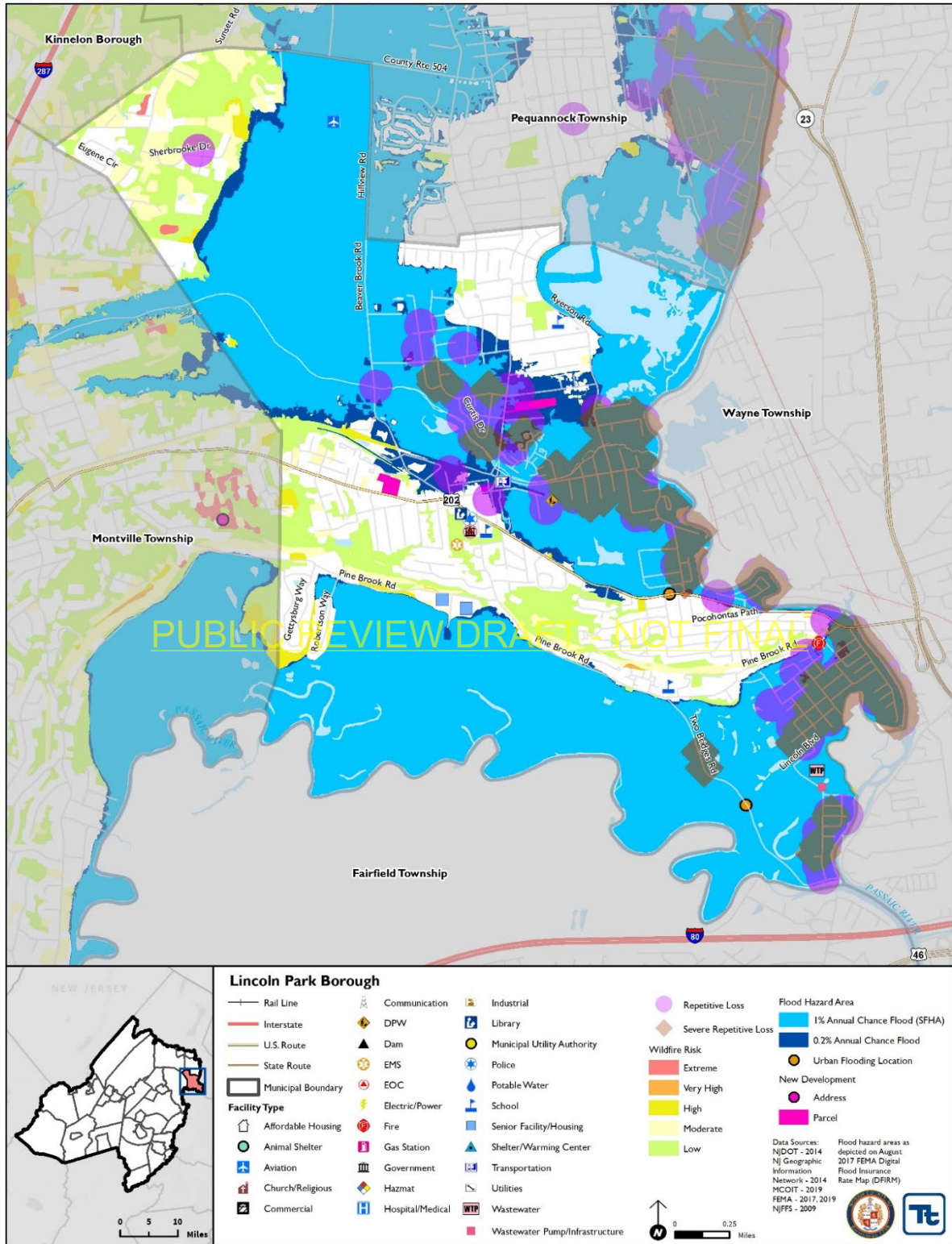
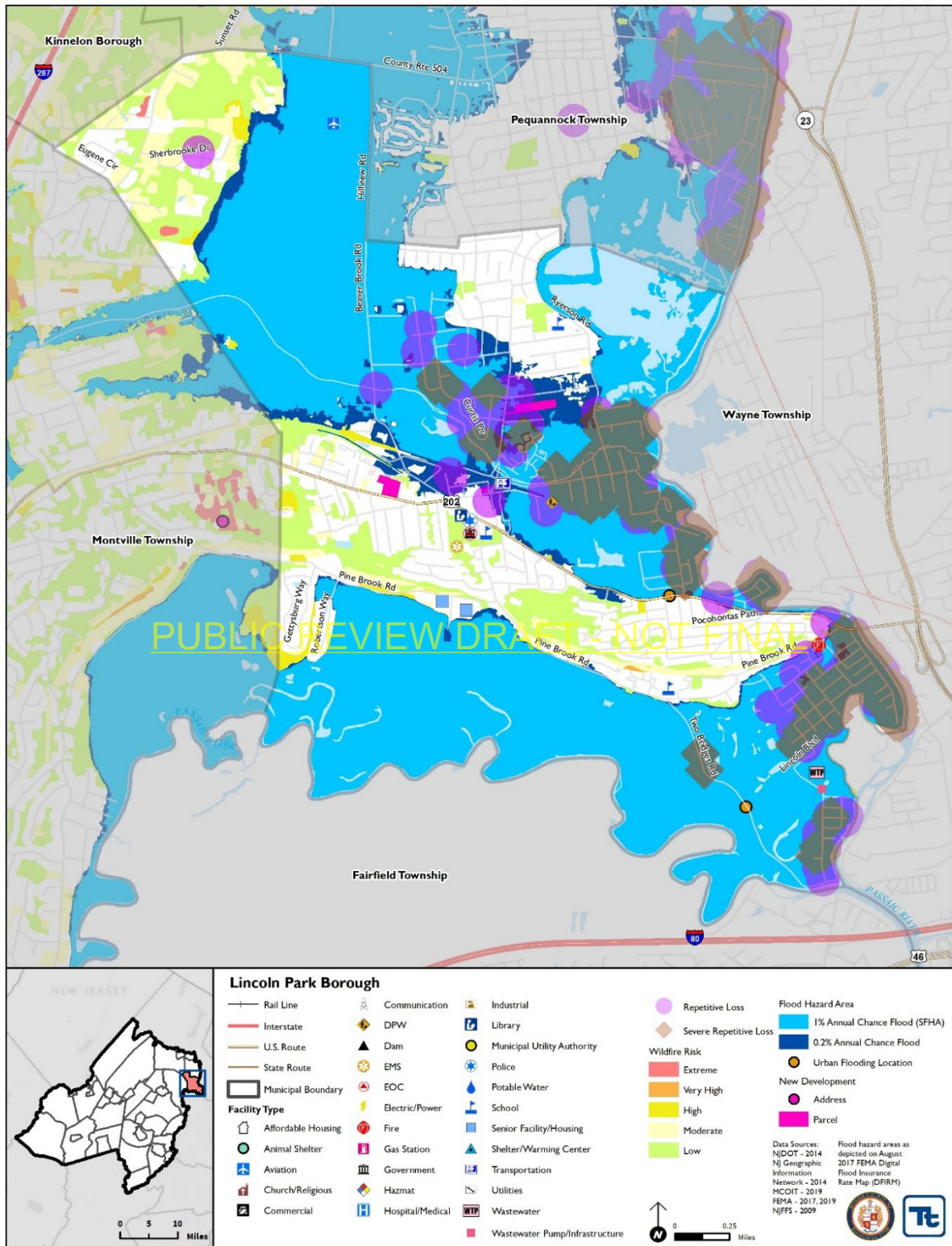


Figure 2: Borough of Lincoln Park Hazard Area Extent and Location Map 2



APPENDIX 7: BOROUGH OF MADISON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Madison and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Enforced by Building Department, State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Yes, if have planning board	No	No
Comment: State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by Land Use Department, Land Use Ordinance 195.					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Enforced by Land Use Department, Land Use Ordinance 195.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Planning Board, Land Use Code 195.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	No	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	Local and State	Yes, if have planning board	No	No
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Enforced by Land Use Department, Land Use Ordinance 195.					
Shoreline Development	No	-	-	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Yes	Yes	No	No
Comment: 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 freeholders 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					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
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.					
Environmental Protection	No	-	-	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	No	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Enforced by Land Use Department, Land Use Ordinance 195.					
Wellhead Protection	Yes	Local	No	No	No
Comment: 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)). Land Use 195.					
Emergency Management	No	-	-	-	-
Comment: 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	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other: Steep Slopes Ordinance	Yes	Local	No	No	No
Comment: Enforced by Land Use Department, Land Use Ordinance 195 Steep Slope					
Planning Documents					
Master Plan	Yes	Local	Yes	Yes	2020-Madison-001
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1). Enforced by Planning Board, March 15, 2011.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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. Enforced by Planning Board, developed annually.					
Disaster Debris Management Plan	No	-	-	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	No	No
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Land Use Ordinance 195.					
Stormwater Management Plan	Yes	Local, State	Yes	No	No
Comment: 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). Enforced by Planning Board, Land Use Ordinance 195. May 2005. https://www.rosenet.org/1035/Stormwater-Management					
Stormwater Pollution Prevention Plan	Yes	Local, State	Yes	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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). https://www.rosenet.org/1035/Stormwater-Management April 1, 2005.					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	No	-	-	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	Yes	Local	No	No	No
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.). Downtown Development Commission.					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	Yes	Local, State	No	No	No
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	Yes	Local	No	No	No
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4). Land Use Ordinance 195. Transportation Element of the Master Plan.					
Agriculture Plan	No	-	-	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Man-dated/Al-lowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in com-ments	If no - can it be a mitiga-tion action? If yes, add Mitigation Action #.
Climate Action Plan	No	-	-	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	-	-	-
Comment:					
Business Develop-ment Plan	No	-	-	-	-
Comment:					
Other: Shade Tree commission	Yes	Local	Allowed	No	No
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958.					
Other - Historic Preservation	Yes	Local	Allowed	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. Part of Community Emergency Management Plan, which was updated July 2018.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Man- dated/Al- lowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in com- ments	If no - can it be a mitiga- tion action? If yes, add Mitigation Action #.
Comment:					
Post-Disaster Recov- ery Plan	No	-	-	-	-
Comment:					
Continuity of Opera- tions Plan	No	-	-	-	-
Comment:					
Public Health Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning Board
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes Mitigation sites identified

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Madison.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use Department
Mitigation Planning Committee	No	-

Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental Board / Commission	Yes	Environmental Commission, Sustainable Madison
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	Yes	Insert appropriate information
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE (county-wide reverse 911)
Maintenance program to reduce risk	Yes	Clean catch basins and clear lines, slip lining sewers
Mutual aid agreements	Yes	Police, Fire, Engineer, Building, Electric Utility
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer and Consultant
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer and Consultant
Planners or engineers with an understanding of natural hazards	Yes	Engineer and Consultant
Staff with training in benefit/cost analysis	Yes	Engineer and Consultant
Staff with training in green infrastructure	Yes	Engineer
Staff with education/knowledge/training in low impact development	Yes	Engineer
Surveyor	Yes	Consultant
Stormwater engineer	Yes	Engineer
Personnel skilled or trained in GIS applications	Yes	Engineer and Consultant
Local or state water quality professional	Yes	Whippany Watershed, Great Swamp
Scientist familiar with natural hazards in local area	Yes	Sustainable Madison
Emergency manager	Yes	Police Department Support Service
Grant writers	Yes	Staff
Resilience Officer	Yes	Engineer
Watershed planner	Yes	Whippany Watershed, Great Swamp
Environmental specialist	Yes	Engineer
Professionals trained in conducting damage assessments	Yes	Engineer and Building Official

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Madison.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes

Financial Resource	Accessible or Eligible to Use?
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Madison.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes https://rosenet.org/442/Local-Emergency-Council recommend link to county HMP
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook, Twitter, Instagram
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Sustainable Madison, Madison Environmental Commission
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes Electric utility bill mailings
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes RAVE

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Madison.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	3	2015
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineer
Who is your floodplain administrator? (name, department/position)	Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2005
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	n/a
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	31 \$8,367,000 \$14,130
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	17 0 Open, 6 Closed without payment \$77,479
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Madison that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Madison has significant exposure. A map of the Borough of Madison hazard area extent and location is provided that indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Madison.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Well C - 34 North St	Water Utility	-	x
North Street Sewer Lift Station - 34 North St	Sewer Utility	-	x

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Madison has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Borough of Madison Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Borough of Madison reported no completed actions.

2.6 CANCELLED ACTIONS

Borough of Madison reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Madison Borough	Master Plan Evaluation	Borough is updating the Master Plan - previous plan did not reference county HMP.	Integration of the Morris County HMP into the municipal Master Plan will allow us to reference the comprehensive HMP as part of our master plan, ensuring that all information is included one way or another. By End of 2030, in compliance with Municipal Land Use Law.	Delete	Not started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Madison Borough	Well C	Well C is a lifeline in the floodplain that could disrupt delivery of drinking water.	Determine extent of flooding expected to the facility and plan mitigation. Can be integrated into the existing Wastewater Management Plan for Morris County.	Yes	Not started
3	Madison Borough	Madison High School Primary Shelter	Madison High School is designated as a primary shelter during emergencies. It does not have a redundant power source.	Purchase and install backup generator for Madison High School. This generator will provide electricity at our major shelter during emergencies. This project was approved by a bond referendum in 2023 by the Madison Board of Education. Timeline for their projects, including this, is still being finalized, but is estimated to be completed by 2026.	Yes	In progress
4	Madison Borough	Elmer Street Culvert	Parallel trunk line installed to ease flooding, but new culvert has not been installed due to easement issues.	Install a new culvert to ease up on water backup issues. The culvert will allow more water to flow through, easing water backup issues.	Yes	In progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
5	Madison Borough	Spring Garden Brook	Spring Garden Brook stream bed and bank require re-stabilization. Plans have been completed, but funding and permits are needed.	Re-stabilization and adds flood protection, to limit erosion and deterioration.	Yes	In progress
6	Madison Borough	Noe and Crestview Drainage Easement	Along the rear of the houses on Noe and Crestview there is an informal easement. To mitigate a beehive drain was installed, but does not stop potential backup into the residents homes. Establishing the easement, doing routine cleaning and ensuring the drain is accessible can limit the potential for damage.	Once corrected, this would eliminate backups from occurring in residents' homes along the drainage easement.	No	Not started
7	Madison Borough	Green Avenue and Waverly Drainage	Addressing drainage issues on Waverly Place, the center of the downtown, which when there is a heavy rainfall event results in flooding.	Resolve drainage issues resulting in popped manholes during heavy rain events.	No	Not started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
8	Madison Borough	Lorraine Pump and Lift Station	<p>The pump and lift station on Lorraine Road does not have a generator backup. In the event of a power outage, a portable generator must be installed within a short timeframe, as failure to do so can result in a back-up of sewage at residents' basements, as a result of them being in low-lying areas around the station.</p>	It eliminates the possibility of sewage back-up at residences during a power outage.	No	Not started

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 4		<u>Borough of Madison</u>	Morris County	Capital Budget, Operating Budget	
2	Flood		Goal 1		<u>Borough of Madison</u>		Capital budget HMGP, PDM, NJDEP	Decrease in flooding potential at a critical well in town.
3	Severe Weather		Goal 1		<u>Madison Board of Education</u>	Borough of Madison (including Public Works and Electric Department)	Covered via referendum	Critical generator electricity during major natural disasters.
4	Flood	Severe Weather; Severe Winter Weather	Goal 1		<u>Borough of Madison</u>		Capital budget HMGP, PDM, NJDEP	Eliminates potential water backup issues.

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
5	Flood	Severe Weather	Goal 1		<u>Borough of Madison</u>	Morris County and NJDEP	HMGP, PDM	Reduce flood damage
6	Flood	Severe Weather	Goal 1		<u>Borough of Madison</u>		Capital budget HMGP, PDM, NJDEP	Elimination of flooding/backup in residents houses, resulting in damages and potential TORT claims.
7	Flood		Goal 1		<u>Borough of Madison</u>		Capital budget HMGP, PDM, NJDEP	Would address flooding and popped man-holes during heavy rain events, exposing dangerous conditions of exposed confined space.

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	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
8	Flood	Severe Weather	Goal 1		<u>Borough of Madison</u>		Capital budget HMGP, PDM, NJDEP	Elimination of flood-ing/sewer backup in residents' houses, resulting in damages and potential TORT claims.

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k - \$250k	3-5 Years	1	1	1	2	1	6	Low
2	\$50k - \$250k	3-5 Years	1	2	2	2	1	8	Medium
3	\$250k - \$500k	1-3 Years	3	1	3	3	3	13	High
4	Over \$1M	3-5 Years	1	1	1	2	1	6	Low
5	\$500k - \$750k	3-5 Years	1	1	1	2	3	10	Medium
6	\$250k - \$500k	1-3 Years	1	2	2	2	1	8	Low
7	\$50k - \$250k	3-5 Years	1	2	2	2	2	9	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
8	\$50k - \$250k	3-5 Years	1	3	2	2	2	10	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Borough of Madison Hazard Area Extent and Location Map 1

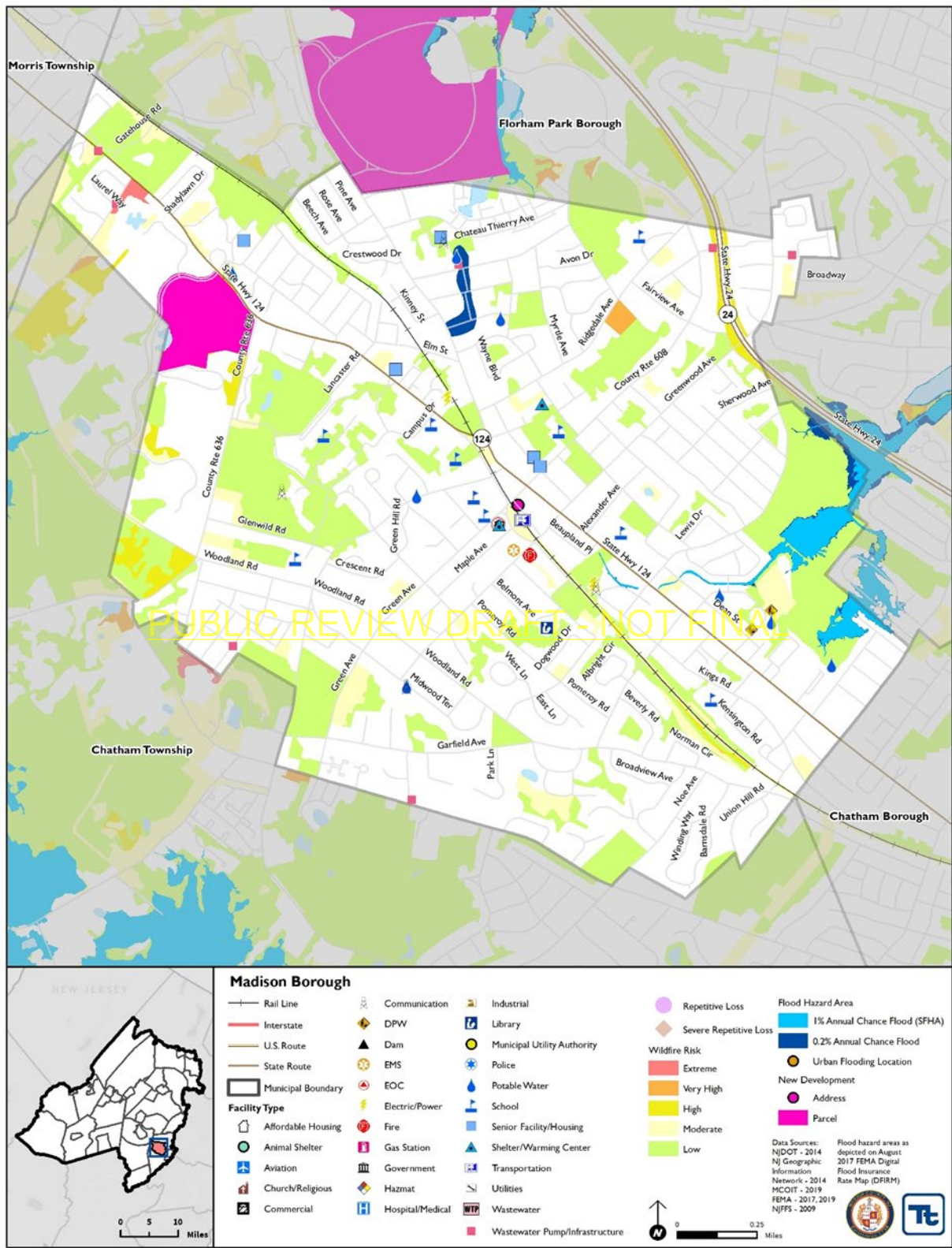
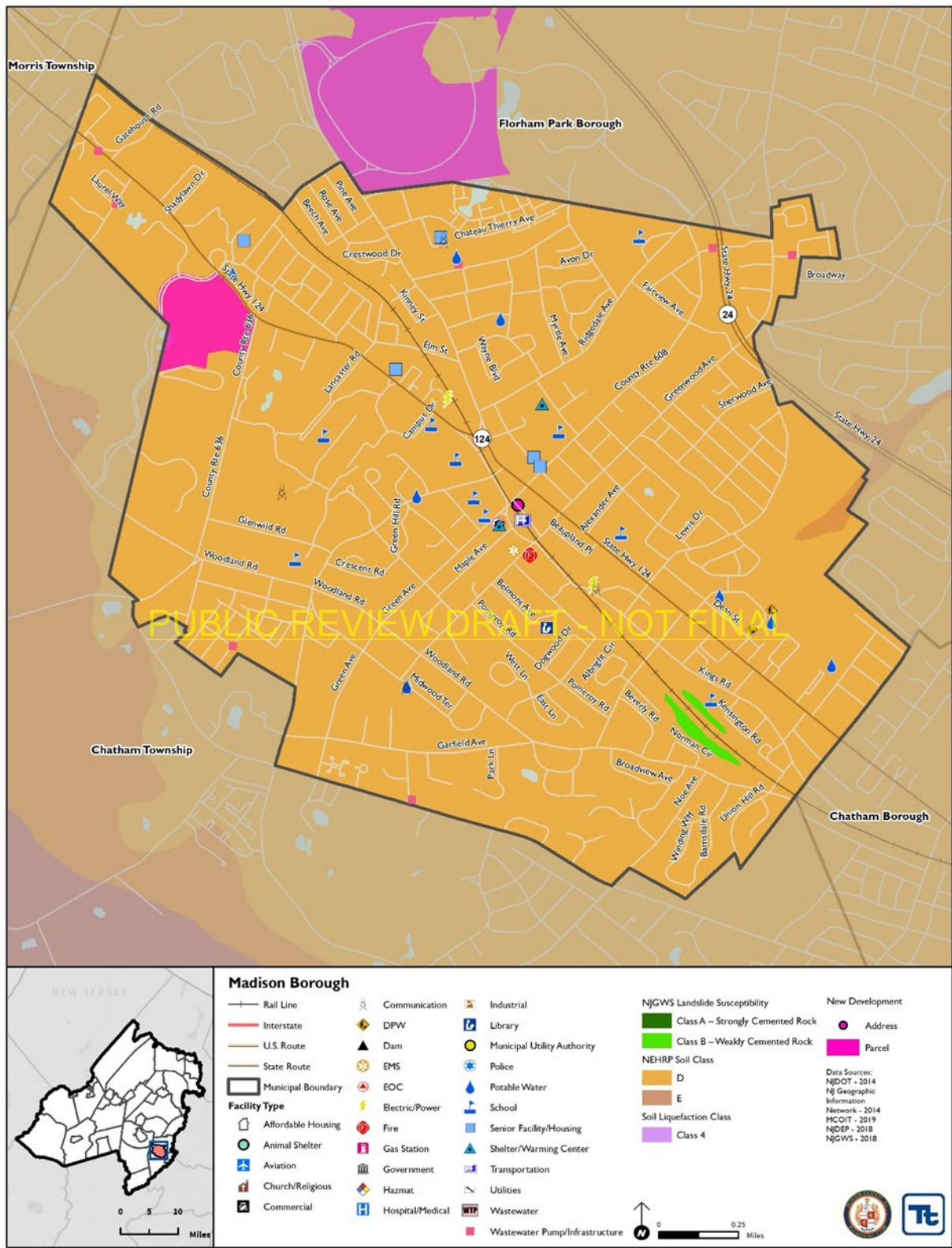


Figure 2: Borough of Madison Hazard Area Extent and Location Map 2



APPENDIX 8: BOROUGH OF MENDHAM COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Mendham and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Re- gional, County, Lo- cal)	State Man- dated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Administered by the Planning Board. Chapter 105 Construction Codes, Uniform. Code Official implements building codes as applicable for included hazards. Reference Ch. 9 of municipal code for Uniform Construction Codes.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Reference C. 215 in the municipal code. Adopted by the Mayor and Council of the Borough of Mendham 12-18-1978 by Ord. No. 18-78 (Ch. 103 of the 1974 Code). Administered by the Zoning Board. Includes chapters addressing steep slope development and stormwater management.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 195 Subdivision of Land and Site Plans. Adopted by the Mayor and Council of the Borough of Mendham 11-20-1978 by Ord. No. 16-78 (Ch. 90 of the 1974 Code). Administered by the Planning Board.					
Stormwater Management	Yes	Local	Yes	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 172 Stormwater Control, administered by the DPW. Stormwater Management planning is implemented by the Borough Engineer.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	-	Yes	-	-
Comment: State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	No	-
Comment: Administered by the Planning Board. Reference Ch. 195 of municipal code for site plan review.					
Environmental Protection	Yes	State and Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code Chapter 50 Open Space, Recreation, and Farmland and Historic Preservation Trust Fund, Municipal. Chapter 141 Littering and Property Maintenance. Chapter					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
169 Soil Disturbance. Chapter 170 Soil and Plant Fertilizers. Chapter 186 Tree Removal. Chapter 199 Water. Reference Ch. 179 of municipal code for soil erosion and sediment control.					
Flood Damage Prevention	No	State and Local	Yes	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Adopted by the Borough Council of the Borough of Mendham 7-21-2008 by Ord. No. 12-08.					
Wellhead Protection	Yes	Local	-	-	-
Comment: Chapter 176 Subdivision of Land and Site Plans Art XIV Submission Requirements for Development within Highlands Area.					
Emergency Management	Yes	Local	-	No	-
Comment: Chapter 20, Fire Department Adopted by the Mayor and Council of the Borough of Mendham 11-4-1974 as Ch. 14 of the 1974 Code; and Chapter 38, Police Department adopted by the Mayor and Council of the Borough of Mendham 11-4-1974 as Ch. 28 of the 1974 Code. 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	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Hazardous Material Ordinance	Yes	Local	-	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Chapter 118 Hazardous Materials adopted by the Mayor and Council of the Borough of Mendham 4-1-1985 by Ord. No. 5-85 (Ch. 63 of the 1974 Code . This article finds that the groundwater underlying the Borough of Mendham is the sole source of its existing and future potable water supply. Accidental spills or discharge of petroleum products, such as gasoline and benzene and other toxic and hazardous materials, could threaten the quality of such groundwater supplies, posing potential public health and safety hazards and threatening economic losses to the community. Unless preventive measures are adopted to prohibit discharge of toxic and hazardous materials and to control their storage, further spills or discharge of such materials could predictably occur with greater frequency and degree of hazard by reason of increased construction, development, population and traffic. The feasibility of restoring an acceptable quality of groundwater, once contaminated, to a safe potable condition is highly doubtful, except over a long period of time and at high cost.					
Soil Erosion and Sediment Control	Yes	Local	-	-	-
Comment: Chapter 170 Soil Erosion and Sediment Control. The purpose of this chapter is to provide measures to control, minimize and protect against soil erosion and resulting sedimentation which can occur during periods of land disturbance.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Adopted October 10, 2006. The Plan includes maps for existing land use, community facilities, environmental features, proposed historic expansion, bedrock geology, soils, slopes, floodprone areas, land use overview and sewer service areas.					
Capital Improvement Plan	Yes	Local	Allowed	Yes	-
Comment: 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. Administered by the Administration.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: 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). Code Chapter 172, #8-07. Administered by Borough Planning Board.					
Stormwater Pollution Prevention Plan	Yes	Local and State	Yes	No	-
Comment: 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). Administered by the Borough Mayor and Council.					
Urban Water Management Plan	No		No	-	-
Comment:					
Habitat Conservation Plan	No		No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.). The Borough has a strategic economic development plan on its website, administered by the Local Economic Development Committee. The purpose of the Local Economic Development Committee is to evaluate the status of our small business community here in the Borough and determine what we can do to help keep our businesses as healthy and prosperous as possible, and in turn keep our Main Street and commercial areas vibrant. The Committee's discovery and determinations are reported to Borough Council with the intent of receiving approval.					
Shoreline Management Plan	No		No	-	-
Comment:					
Community Wildfire Protection Plan	No	Federal	No	-	-
Comment:					
Community Forest Management Plan	Yes		No	-	-
Comment: Approved through 2025.Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Business Development Plan	No	-	No	-	-
Comment:					
Other: Historic Preservation	Yes	State	-	-	-
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest. Administered by the Mendham Borough Planning Committee under the authority of the State Historic Preservation Office.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: CEMP updated 2020 approved by State Police. 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Local	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	Local	No	-	-
Comment:					
Continuity of Operations Plan	No	Local	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Public Health Plan	No	Local	No	-	-
Comment:					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Engineering
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No The Borough is 85% built out to zoning standards.

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Mendham.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Borough Engineer/Planning
Mitigation Planning Committee	No	
Environmental Board / Commission	Yes	-
Open Space Board / Committee	Yes	-
Economic Development Commission / Committee	Yes	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE and AlertMendham through Morris County

Staff/Personnel Resource	Available?	Department/Agency/Position
Maintenance program to reduce risk	Yes	Have water reclamation plan for sewer system in the Borough which includes maintenance plan, tree trimming by power lines
Mutual aid agreements	Yes	Mayor's Shared Services Committee
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer
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 training in benefit/cost analysis	Yes	Borough Engineer
Staff with training in green infrastructure	Yes	Borough Engineer
Staff with education/knowledge/training in low impact development	Yes	Borough Engineer
Surveyor	Yes	Borough Engineer
Stormwater engineer	Yes	Borough Engineer
Personnel skilled or trained in GIS applications	Yes	Borough Engineer
Local or state water quality professional	Yes	Borough Engineer
Scientist familiar with natural hazards in local area	Yes	Borough Engineer
Emergency manager	Yes	OEM Coordinator in Police Department (Gary Lynch) and Mayor
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	No	-
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Mendham.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	N/A
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	-

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Mendham.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes. Chief, Mayor, Administrator
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes- Website is used to disseminate hazards related information as needed. Have updates on developing or in process hazard events (es. COVID-19)
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Website is used to disseminate hazards related information as needed.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Boro OEM Gary Lynch
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Public Access TV (Mendham TV), social media, email lists, Have worked with the Bernards Township Health Department for public outreach on pandemic and health risks.
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes. Lisa Smith Cit-E-Net, RAVE Alert & Alert Mendham

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Mendham.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	-	-
Public Protection (Fire ISO Protection Class)	Yes	4/4X	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Borough Engineer by authority of Borough Zoning Officer
Who is your floodplain administrator? (name, department/position)	Paul Ferriero, Borough Engineer

Criterion	Response
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	7/21/2008
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	-
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	13 \$3,457,000 9262
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	1 \$31,376.78
Do you maintain a list of properties that have been damaged by flooding?	N/A
Do you maintain a list of property owners interested in flood mitigation?	N/A

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Mendham that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Mendham has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Mendham.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
There are no critical facilities located in the floodplain.			

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Mendham has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Borough of Mendham Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	Medium to Low
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Low	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

The following actions were reported as completed:

- **Action:** Develop a debris management plan. **Notes:** The Department of Public Works has addressed this function and will continue to do so in the future.
- **Action:** Design and install green infrastructure/rain gardens to alleviate downstream flooding. **Notes:** This issue is addressed annually with DEP funding under the Borough's Stormwater Management Plan.
- **Action:** Purchase a variable message board trailer to deploy in affected areas. **Notes:** Two mobile electronic message boards were purchased and deployed in 2021.

2.6 CANCELLED ACTIONS

Borough of Mendham reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Mendham Borough	All-Hazards Education Program	There is a need to protect residents from harmful potential natural hazards on private property and to educate the public on the impacts/mitigation of natural hazards.	Develop a multi-pronged educational outreach program to provide critical information to residents on methods to reduce their vulnerability to natural hazards such as vegetation management, ash tree removal, etc. The program will be expanded and regularly reviewed to teach residents about safety in relation to the hazards outlined in the HMP, as well as household and other risks they may face.	Yes	In progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	All Hazards		Goal 1		<u>Borough Administrator</u>		Operating budget	A better informed and prepared population.

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	Under 1 year	2	2	2	2	3	11	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Borough of Mendham Hazard Area Extent and Location Map 1

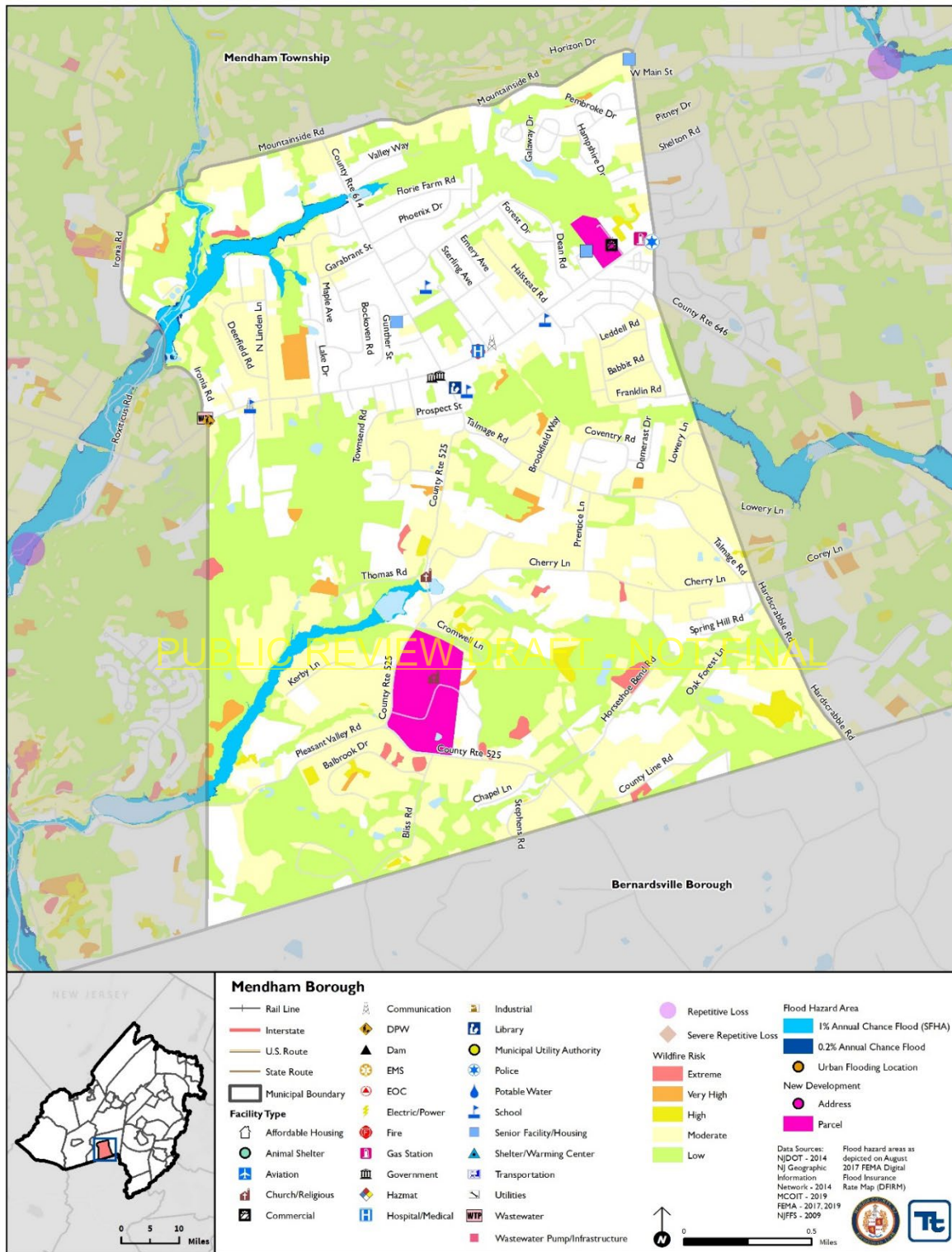
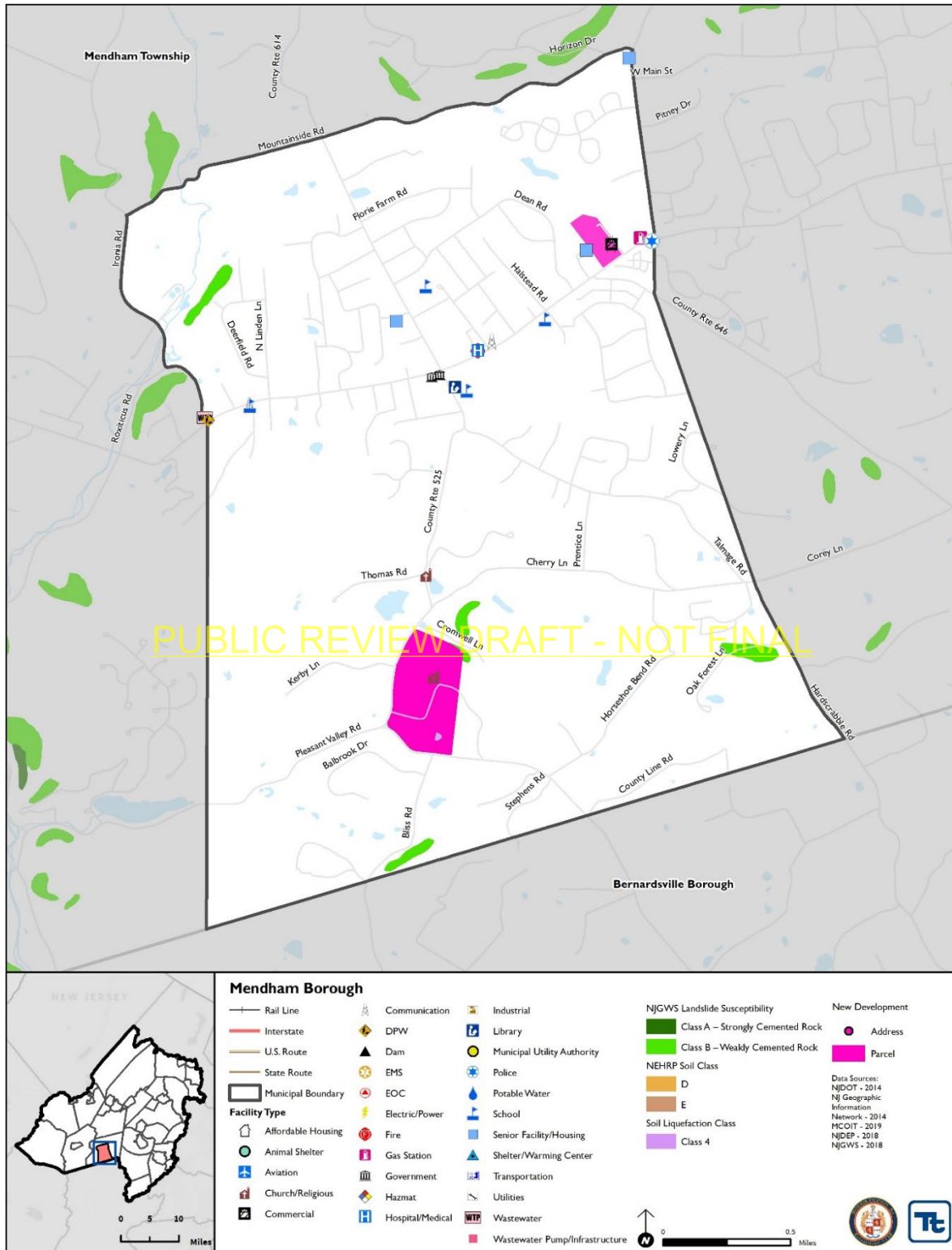


Figure 2: Borough of Mendham Hazard Area Extent and Location Map 2



APPENDIX 9: BOROUGH OF MORRIS PLAINS COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Morris Plains and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
PUBLIC REVIEW DRAFT - NOT FINAL					
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes		
Comment: Building Department, State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) Chapter 23 adopted by the Borough of Morris Plains. The "Borough of Morris Plains State Uniform Construction Code 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 Code	Yes	Local	Yes	No	
Comment: Chapter 13 (Land Development), Article 5 (Zoning Regulations). The zoning map for the Borough is dated May 2000. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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.					
Subdivisions	Yes	Local	Yes	No	
Comment: Chapter 13 (Land Development), Article 4 (Subdivision and Site Plan Review) administered by the Planning Board in accordance with Section 28 of Chapter 291, Laws of NJ 1975.					
Stormwater Management	Yes	Local	Yes		

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 18C (Municipal Stormwater Management and Storm Sewer Systems. The provisions of this chapter shall be enforced by all police officers of the Borough, the Borough Engineer, the Superintendent of the Department of Public Works, the Health Officer, the Zoning Officer, the Borough Engineer and/or their duly authorized designees.					
Post-Disaster Recovery	No		No		
Comment:					
Real Estate Disclosure	Yes	State			
Comment: Division of Consumer Affairs N.J.A.C. 13:45A-29.1 Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	Local			
Comment: Zoning map. State Mandated on a municipal level. See Zoning Ordinance;					
Site Plan Review	Yes	Local	Yes		
Comment: Planning Board					
Environmental Protection	No				
Comment: Chapter 23A (Trees)					
Flood Damage Prevention	Yes	Federal, State, Local	No	No	
Comment: Chapter 11, the Construction Official is appointed to administer and implement the flood damage prevention ordinance by granting or denying development permit applications in accordance with its provisions. The Borough Engineer is designated the National Flood Insurance Program (NFIP) Floodplain Administrator.					
Wellhead Protection	No				
Comment:					
Emergency Management	Yes	Emergency manager			
Comment: Chapter 10 (Fire Department); Chapter 11 (Fire Prevention); Chapter 18 (Police Department)					
Climate Change	No				
Comment:					
Disaster Recovery Ordinance	No				

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Disaster Reconstruction Ordinance	No				
Comment:					
Other					
Comment: <ul style="list-style-type: none"> Chapter 19, Soil Disturbance, Soil Erosion – Borough Engineer Chapter 19A Southeast Morris County Municipal Utilities Authority for Township of Hanover, Township of Morris, Borough of Morris Plains and Town of Morristown. 					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); Updated Master Plan Reexamination Report; approved by the Planning Board; Adopted Dec 2018. Flooding locations are acknowledged including under the railroad bridge and the Borough has an agreement with New Jersey Transit to pump stormwater runoff from under the bridge. A recommendation is to monitor the effectiveness of flood prevention and mitigation measures in the Borough and make changes and enhancements to the existing and planned measures as necessary. Recommendation is to encourage green building measures in site plan review and low impact development to use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat.					
Capital Improvement Plan	Yes	Local			
Comment: 5 Year Planning, but integrated into municipal budget					
Disaster Debris Management Plan	No				
Comment:					
Floodplain or Watershed Plan	No	Local			
Comment: FPA					
Stormwater Management Plan	Yes	Local			
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Pollution Prevention Plan	Yes	Local			
Comment: March 2005; Borough Engineer and Stormwater Pollution Prevention Team. The Borough ensures all residential development and redevelopment projects that are subject to Residential Site Improvement Standards for stormwater management, including NJDEP Stormwater Management Rules NJAC 7:8, are in compliance with those standards.					
Urban Water Management Plan	No				
Comment:					
Habitat Conservation Plan	Yes				
Comment:					
Economic Development Plan	Yes	Local			
Comment: Borough Council					
Shoreline Management Plan	No				
Comment: Not applicable					
Community Wildfire Protection Plan	No				
Comment:					
Community Forest Management Plan	No				
Comment: .					
Transportation Plan	Yes	Planning Board and Council			
Comment: Circulation Plan is discussed in the Master Plan (2018).					
Agriculture Plan	No				
Comment:					
Climate Action Plan	No				
Comment:					
Tourism Plan	No				
Comment:					
Business Development Plan	Yes	Planning Board and Council			

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Part of Master Plan					
Other					
Comment: Open Space Plan – Yes, Local, Borough Council					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes		
Comment: 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. The plan was last updated April 2016. The identified hazards include hazards in the hazard mitigation plan.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No				
Comment:					
Post-Disaster Recovery Plan	No				
Comment:					
Continuity of Operations Plan	Yes				
Comment: Refer to the Emergency Operations Plan.					
Public Health Plan	Yes				
Comment: Refer to the Emergency Operations Plan.					
Other					
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Building/Zoning after approval

Criterion	Response
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No 85% Built Out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Morris Plains.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	
Environmental Board / Commission	No	
Open Space Board / Committee	No	Subcommittee to the Planning Board
Economic Development Commission / Committee	No	
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Rave, Facebook (PD), Instagram, Next Door, Municipal Website, Weekly Email Blast
Maintenance program to reduce risk	Yes	Road Department
Mutual aid agreements	Yes	Police Department
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Professional Contractors
Engineers or professionals trained in building or infrastructure construction practices	Yes	Consultant
Planners or engineers with an understanding of natural hazards	Yes	Professional Contractors
Staff with training in benefit/cost analysis	Yes	Borough Planner
Staff with training in green infrastructure	Yes	Consulting Engineer
Staff with education/knowledge/training in low impact development	Yes	Planner
Surveyor	Yes	Professional Contractors
Stormwater engineer		
Personnel skilled or trained in GIS applications	Yes	
Local or state water quality professional		
Scientist familiar with natural hazards in local area	Yes	LSRP
Emergency manager	Yes	Chief of Police
Watershed planner	No	Insert appropriate information

Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental specialist	Yes	Insert appropriate information
Grant writers	Yes	Professional Contractors
Resilience Officer	No	
Other		

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Morris Plains.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Morris Plains.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes (Police Department/ Clerk's Office)
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes Department Website
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook, Instagram, Municipal Website, Email Alerts

Criterion	Response
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes LEPC
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Rave, Next Door, Social Media, Municipal Website
Do you have any established warning systems for hazard events? • If yes, briefly describe.	

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Morris Plains.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes		4-May 2015
Storm Ready Certification	No		
Firewise Community Classification	No		
Sustainable Jersey	Yes	Bronze	

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Leon Hall – Borough Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2000
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	December 1994
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No

Criterion	Response
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes, preliminary maps under FEMA review
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	2 NFIP Policies; 17 WYO Policies
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	6 NFIP Claims; 9 WYO Claims Total Payments (NFIP + WYO) = \$107,493
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Morris Plains that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Morris Plains has significant exposure. A map of the Borough of Morris Plains hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Morris Plains.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
JCP&L Substation	Utility	X	
Helipad	Transportation	X	

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment)

The Borough of Morris Plains has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community

Table 9: Township of Harding Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Low	Hazardous Substances	Medium
Earthquake	Low	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	High	Wildfire	Low
Geological Hazards	Low		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Borough of Morris Plains did not report any completed actions.

2.6 CANCELLED ACTIONS

Borough of Morris Plains did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Morris Plains	Mitigate flooded roadways	There are several roadways in the Borough that flood during heavy rain events.	The Borough will determine the cause of flooding and associated stormwater system capacity needs to identify mitigation alternatives to alleviate roadway flooding. Locations known at this time: 1. Rt 10 and Johnson Road (East Bound Lane)	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				2. Speedwell Avenue Extension by Municipal Parking Lot 3 floods		
2	Morris Plains	Mitigate flooded residential properties	There are several residential properties that flood during heavy rain events.	The Borough will attempt to determine the cause of flooding for the Wanting Brook, which overflows its banks and affects homes along Kathleen Place, Brook Drive and Mt. Way. Once this study is complete, concrete mitigation actions will be developed.	Yes	Not Started
3	Morris Plains	Generators for Public Schools	Problem: Two public schools in the Borough, Mt. Arlington Public School and Edith M. Decker school are both identified as shelters for the Borough. However, neither school has backup power. In the event of a power outage, the	Working with the Borough Engineer, identify the proper size generators for each school. Once identified, purchase and install generators and associated equipment at each school.	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			schools cannot function as shelters for residents.			
4	Morris Plains	Public Education and Outreach Program	Problem: The Borough maintains a website and social media accounts that provide information to residents. This includes announcements, emergency alerts, forms, and contact information. However, the website does not include hazard-related information.	The Borough will develop and implement a multi-hazard public awareness program. This will include information on the types of hazards that can impact the Borough based on the County's HMP. Topics will include preparedness, mitigation measures, safe generator use, and posting information about the County's HMP on the municipal website.	No	New

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1		<u>Borough Engineer</u>		FEMA HMA, Borough match	High
2	Flood		Goal 1		<u>Borough Engineer</u>		FEMA,-HMA., Borough match	Medium
3	Severe Weather	Severe Winter Weather	Goal 1		Borough OEM Coordinator, Superintendent		FEMA HMGP or PDM, BRIC, CDBG	
4	Flood	All hazards	Goal 2		Borough OEM Coordinator, Borough Administrator		Borough budget	

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$750k-\$1M	1-3 years	1	3	2	2	2	10	Medium
2	\$750k-\$1M	1-3 years	1	3	2	2	2	10	Medium
3	\$250k-\$500k	1-3 years	1	1	2	2	2	8	Low
4	Under \$50k	Under 1 year	2	2	2	2	2	10	Medium

Figure 1: Borough of Morris Plains Hazard Area Extent and Location Map 1

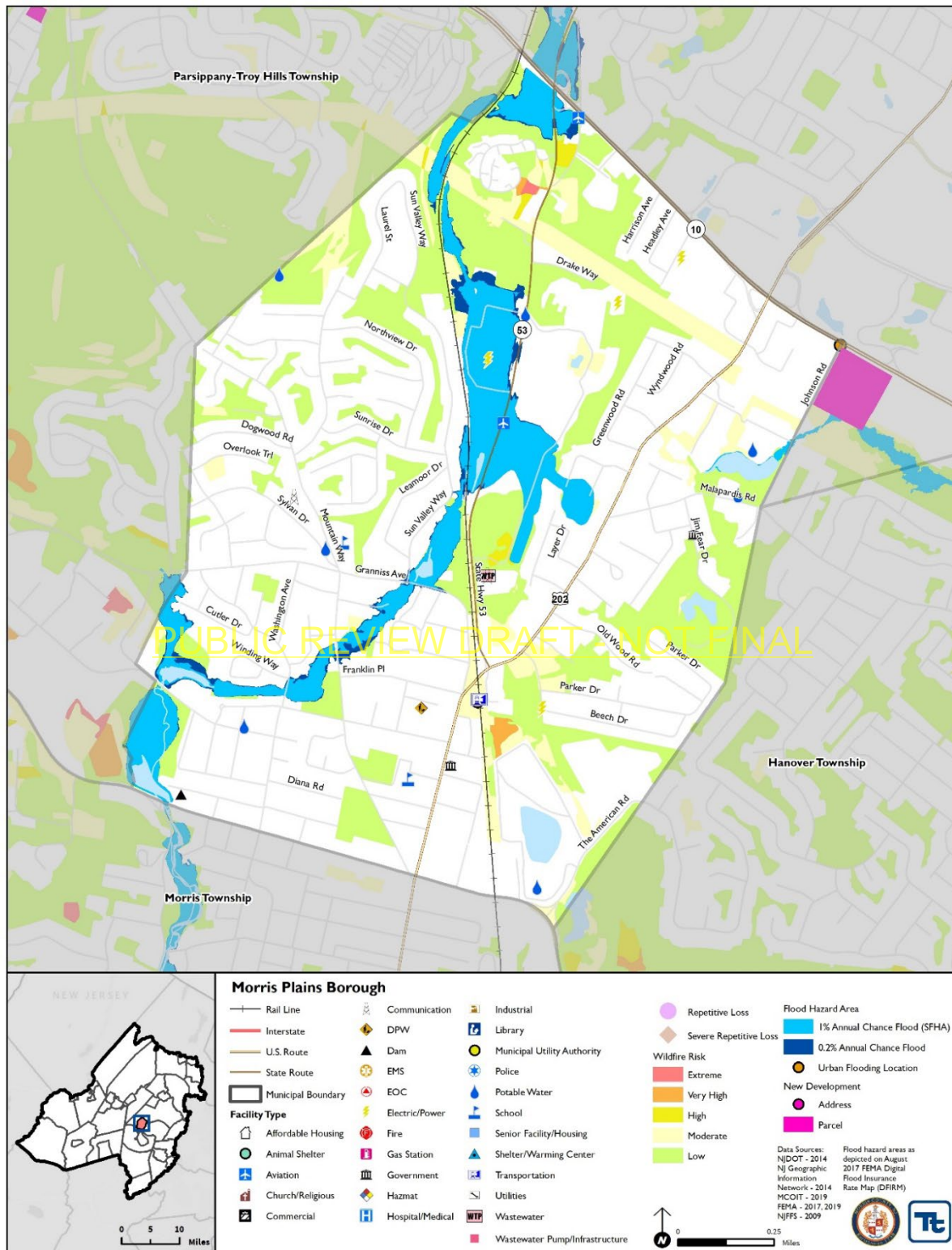
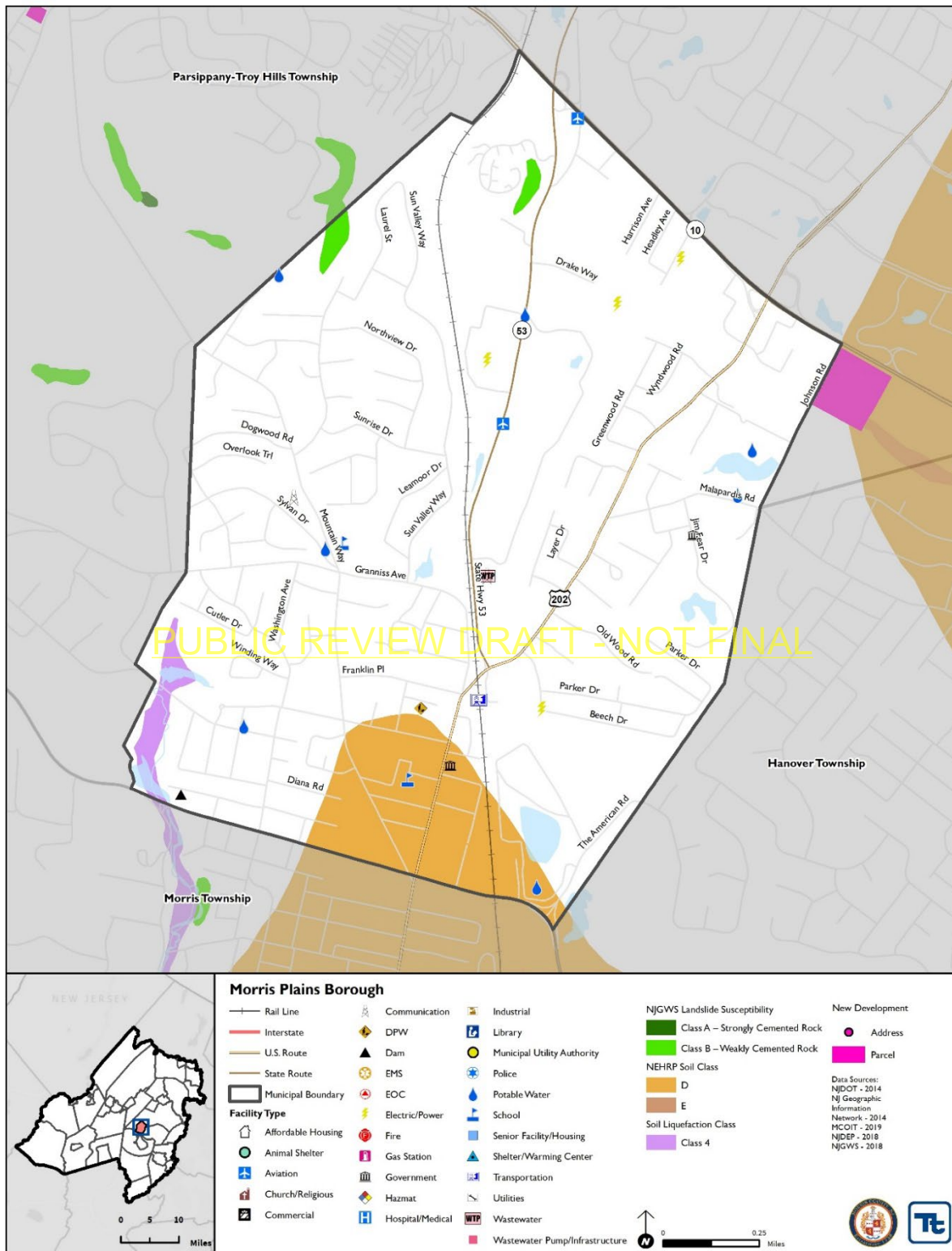


Figure 2: Borough of Morris Plains Hazard Area Extent and Location Map 2



APPENDIX 10: BOROUGH OF MOUNTAIN LAKES COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Mountain Lakes and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter 88 Building Construction. Administered by the Mountain Lakes Construction Office.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter 245 Zoning. Administered by Zoning.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 208 Subdivision of Land and Site Plan Review.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 202 Stormwater Control. Administered by Administration.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	No	-
Comment: State mandated at local level;					
Shoreline Development	No	-	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	-	No	-
Comment: Chapter 208 Subdivision of Land and Site Plan Review.					
Environmental Protection	Yes	Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 102 Environmental Factors; Soils, Water, and Trees; Article II Environmental Impact Statement; Article III Soil Moving; Article IV Soil Erosion and Sedimentation Control; Article V Surface Water Management; Article VII Preservation and Protection of Trees.					
Flood Damage Prevention	No	-	Yes	-	-
Comment: The Borough does not participate in the NFIP.					
Wellhead Protection	Yes	Local	-	Yes	-
Comment: Chapter 102 Environmental Factors; Soils, Water, and Trees; Article VI Wellhead Protection Area Regulations. Amended 2014.					
Emergency Management	Yes	Local	-	No	-
Comment: Chapter 120 Fire Prevention.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-
Comment: Administered by the Planning Board.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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. The Mountain Lakes Capital Improvement Plan is updated annually.					
Disaster Debris Management Plan	No	-	No	No	2020-Mountain Lakes-006
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: 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).					
Stormwater Pollution Prevention Plan	Yes/No		Yes		
Comment:					
Urban Water Management Plan	Yes/No		No		
Comment:					
Habitat Conservation Plan	Yes/No		No		
Comment:					
Economic Development Plan	Yes	Local	No		
Comment: Administered by Planning and Administration.					
Shoreline Management Plan	Yes/No		No		
Comment:					
Community Wildfire Protection Plan	Yes/No		No		
Comment:					
Community Forest Management Plan	Yes	Local	No		
Comment: 2011 Tree Canopy Resolution. Administered by the Shade Tree Commission.					
Transportation Plan	Yes	Local	No		
Comment: Administered by OEM.					
Agriculture Plan	No		No		
Comment:					
Climate Action Plan	No		No		
Comment:					
Tourism Plan	No		No		
Comment:					
Business Development Plan	No		No		
Comment:					
Other					
Comment:					
Response/Recovery Planning					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. Comprehensive Emergency Management Plan. 2018. Administered by OEM.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment: Complete smaller exercises with schools					
Post-Disaster Recovery Plan	Yes	Local	No	No	No
Comment: Updated in 2018. Administered by OEM.					
Continuity of Operations Plan	Yes	Local	No	No	No
Comment: Have a chain of command plan for continuity.					
Public Health Plan	No				
Comment: Will be initiated soon as a result of COVID-19 pandemic					
Other	Yes	Local	No	Yes	No
Comment: Standard operating procedures established within police department.					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Building Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Mountain Lakes.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Council
Mitigation Planning Committee	Yes	Administration
Environmental Board / Commission	Yes	Council

Staff/Personnel Resource	Available?	Department/Agency/Position
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	Yes	Council
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Fire sirens, Nixle, email blasts, social media
Maintenance program to reduce risk	Yes	Administration
Mutual aid agreements	Yes	Administration
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Administration/Council
Engineers or professionals trained in building or infrastructure construction practices	Yes	Administration
Planners or engineers with an understanding of natural hazards	Yes	Administration
Staff with training in benefit/cost analysis	Yes	Administration/Clerk
Staff with training in green infrastructure	Yes	Part time staff, contractors
Staff with education/knowledge/training in low impact development	Yes	Part time staff, contractors
Surveyor	No	-
Stormwater engineer	Yes	Engineer
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	Yes	Water Department
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Administration
Watershed planner	Yes	Volunteers on committee
Environmental specialist	Yes	Volunteers on committee
Grant writers	Yes	Administration
Resilience Officer	Yes	Volunteers on committee
Other	Yes	Many committees in the Borough are responsible for various aspects

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Mountain Lakes.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, in limited cases
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No

Financial Resource	Accessible or Eligible to Use?
Other	

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Mountain Lakes.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Manager if Borough specific, Chief of Police/OEM for emergencies
Do you have personnel skilled or trained in website development?	Contracted out.
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes; FEMA CERT information, sheltering information
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, The Borough recently started outreach programs with Police, Fire and CERT presents to the public quarterly – advertised through social media and email.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	CERT
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Various committees in the Borough could be utilized to communicate and educate.
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Fire sirens, Nixle, email blasts, social media

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Mountain Lakes.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	4	October 2014
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	October 17, 2017

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

The Borough of Mountain Lakes does not participate in the National Flood Insurance Program.

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Mountain Lakes that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Mountain Lakes has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

There is no repetitive loss data available as the Borough of Mountain Lakes does not participate in the NFIP.

2.3 CRITICAL FACILITIES

There are no NFIP mapped floodplains in the Borough.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Borough of Mountain Lakes has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 8: Borough of Mountain Lakes Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Low	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

The following actions were completed:

- **Action:** Enhance the current public outreach and education program to include high ranked hazards. **Notes:** The Borough recently started outreach programs with Police, Fire and CERT presents to the public quarterly – advertised through social media and email

2.6 CANCELLED ACTIONS

Borough of Mountain Lakes did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

PUBLIC REVIEW DRAFT - NOT FINAL						
Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Mountain Lakes Borough	Backup power for municipal wells	Four municipal wells lack backup power. Without power, the wells will not function properly, and the Borough will be without potable water.	Purchase generators to use during a power outage to keep the municipal-owned wells operational.	No	Not Started
2	Mountain Lakes Borough	Sunset Lake Dam	NJ DEP changed their calculations and dam ranking for Sunset Lake Dam. The dam is now high hazard dam	Rebuild the dam. After the dam is rebuilt, the Borough will develop an EAP and submit to NJDEP.	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1		Disruption of water distribution	Goal 1		<u>Borough Administrator, working OEM and DPW</u>	DPW	Borough budget/bonding	Continuity of water service
2	Flood	Dam failure/Flood	Goal 1		<u>Engineering</u>		HMGP, PDM, FMA, Municipal budget	Dam failure avoided, meet safety requirements

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1			1	1	2	2		9	Medium
2	Over \$1M	Under 1 year	1	3	3	1	3	11	Medium

Figure 1: Borough of Mountain Lakes Hazard Area Extent and Location Map 1

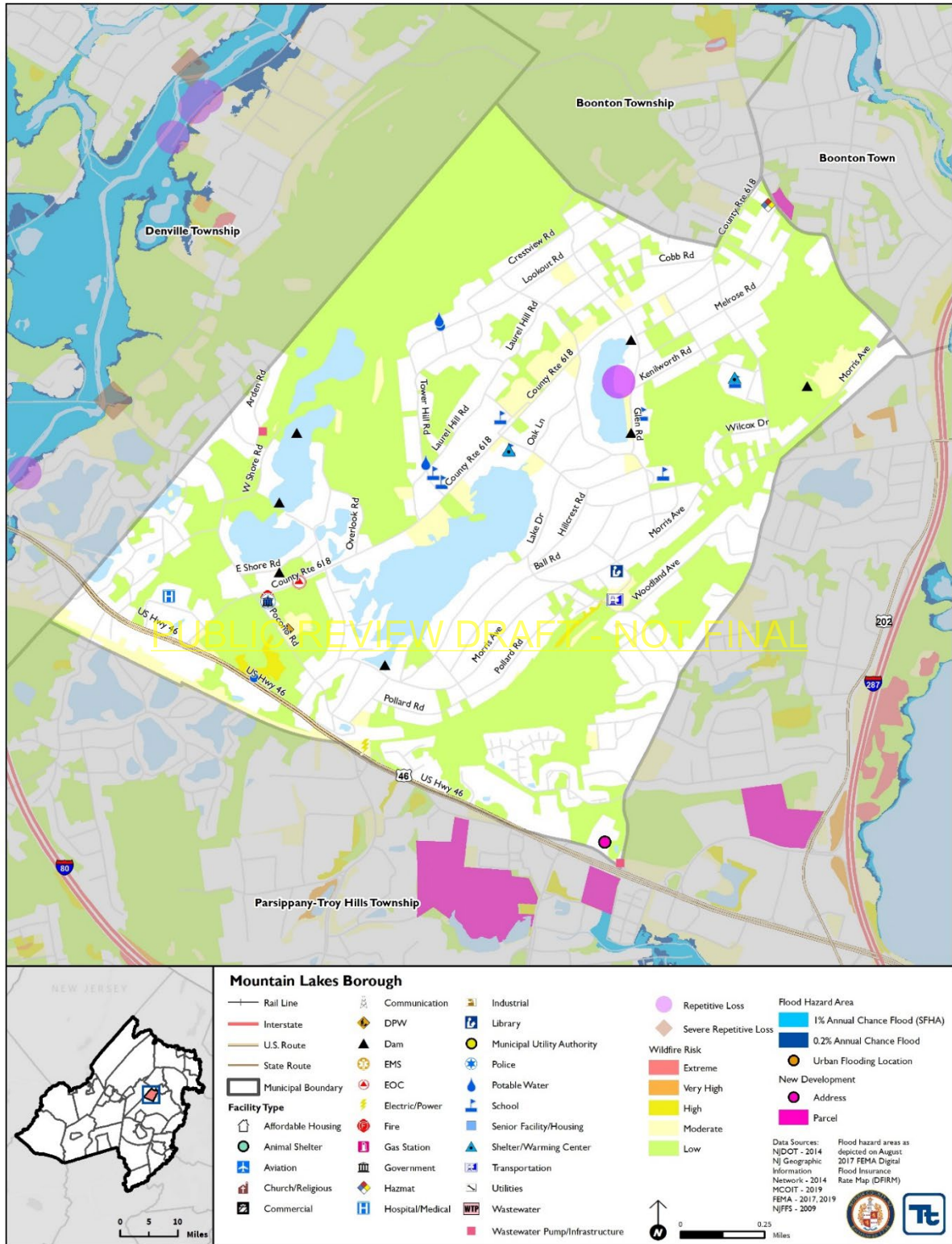
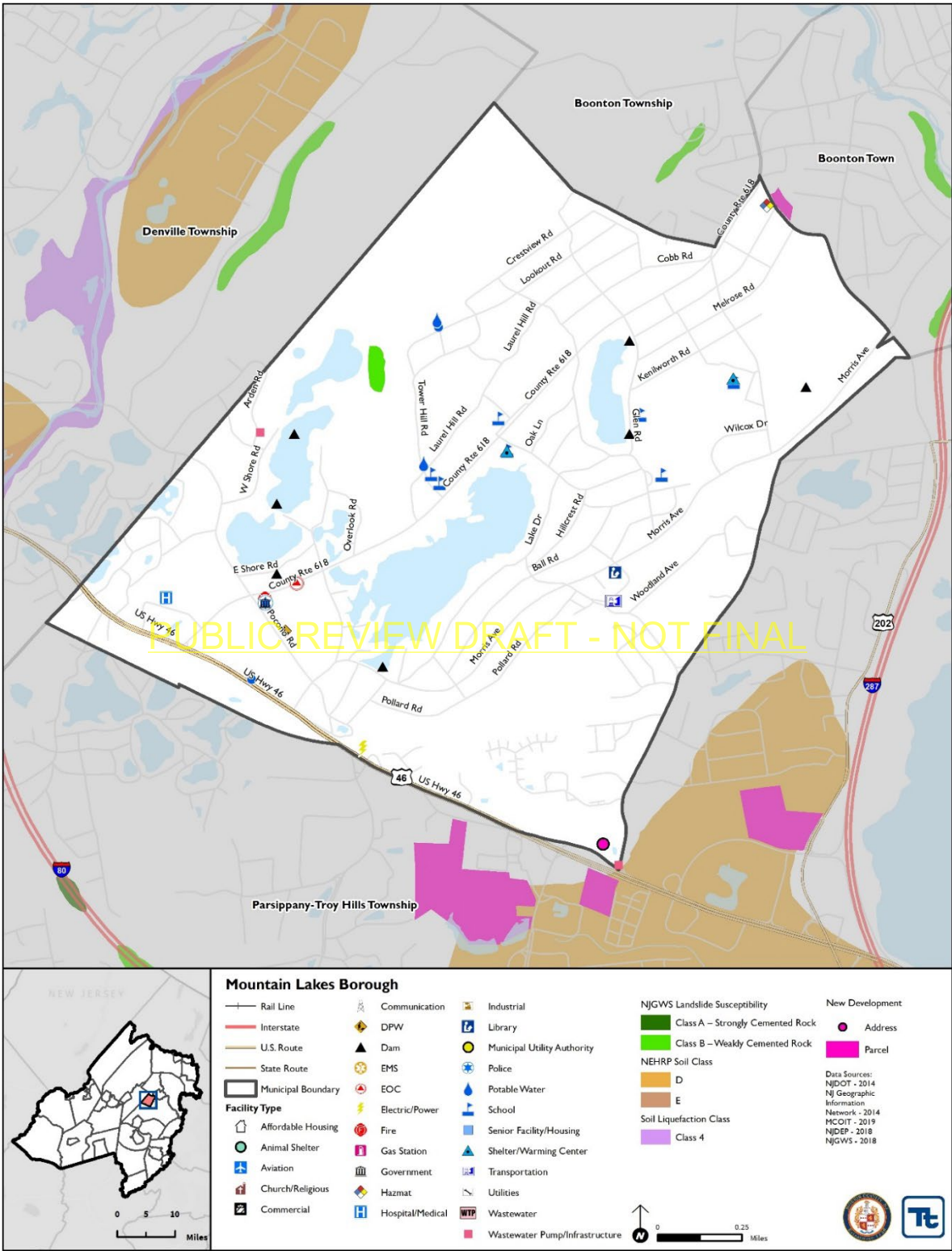


Figure 2: Borough of Mountain Lakes Hazard Area Extent and Location Map 2



ANNEX 11: BOROUGH OF NETCONG COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Netcong and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State, Local	Yes	-	-
Comment: State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.); Chapter 140 of the borough code					
Zoning Code	Yes	Local	Yes	Yes	-
Comment: Chapter 194 (Land Development Procedures); adopted by the Borough Mayor and Council on 1/31/1979; the purpose of this chapter is to limit and restrict to specified districts and regulate therein buildings and structures according to their construction and the nature and the extent of their use and the nature and extent of the uses of land, including the regulation and restricting of the height, number of stories and sizes of buildings and other structures, the percentage of lot that may be occupied, the sizes of yards, courts and other open spaces, the density of population and the location and use and extent of use of buildings and structures and land for trade, industry, residence and other purposes					
Subdivisions	Yes	Local, Land-Use Board	Yes	Yes	-
Comment: Chapter 194 (Land Development Procedures); adopted by the Borough Mayor and Council on 1/31/1979. The code requires any developer applying for subdivision or resubdivision need to submit a sketch plat. The sketch plat has a list of requirements that is must include, including structures, wooded areas, topography, watercourses, soil erosion and sediment control, and utility and drainage information.					
Stormwater Management	Yes	State, Local, Land-Use Board	Yes	Yes	-
Comment: Borough Ord. 194-89 through 194-100. 4-13-2006 <ul style="list-style-type: none">Municipal Separate Storm Sewer System (MS4), Borough Ord. 238The Borough ensures that all new residential development and redevelopment projects are in compliance with the regulations as a condition of the Land Use Board approval process.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	-	-
Comment: N.J.A.C. 13:45A-29.1					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Growth Management	No	-	-	-	-
Comment:					
Site Plan Review	Yes	Local	Yes	No	-
Comment: Chapter 194 (Land Development Procedures); adopted by the Borough Mayor and Council on 1/31/1979. The Borough requires site plan reviews and approvals prior to issuing a permit for any development except for detached one-family dwellings. The site plans have requirements that they must include, including the location and size of existing and proposed storm drainage facilities.					
Environmental Protection	No	-	-	-	-
Comment:					
Flood Damage Prevention	Yes	Local	Yes	Yes	-
Comment: Chapter 164 (Flood Damage Prevention Ordinance); adopted by the Mayor and Council on 7/13/1982. The purpose 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 areas by provisions designed to: Protect human life and health; Minimize expenditure of public money for costly flood control projects; Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; Minimize prolonged business interruptions; Minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in areas of special flood hazard; 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; Ensure that potential buyers are notified that property is in an area of special flood hazard; and Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. The Borough requires a development permit for any development or construction to occur in the special flood hazard area.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	No	-	-	-	-
Comment: Borough can declare a municipal state of emergency – part of the EOP; have the ability to bring in the additional services when needed (e.g. extra garbage pickup days, tree trimming, etc.)					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local, Planning Board	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Netcong Master Plan was first adopted in September 1978 and has been reexamined in 1988, 1998, and 2008. The plan 1978 includes elements on: existing development, population, neighborhood analysis, environmental conditions, traffic plan, community facilities plan, financial considerations, and land use plan. The January 2008 Master Plan Reexamination Report includes goals related to open space, zoning, environmental (including flooding and stormwater), and preserving the character of the Borough.					
Capital Improvement Plan	Yes	Local	No	-	-
Comment: This is part of the annual budget and updated each year. It includes line items for snow removal, maintenance, and capital improvement projects.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local, Borough Engineer	Yes	-	-
Comment: Netcong Stormwater Management Plan, 3/2005; the Planning Board has adopted the plan and is an amendment to the Borough's master plan.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	-	-
Comment: Netcong Borough Stormwater Pollution Prevention Plan; last updated in December 2017 by the Borough Engineer. The plan outlines how the Borough reduces stormwater pollution, including their maintenance schedule, how they implement the ordinances, training, and education and outreach.					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	No	-	-	-	-
Comment:					
Economic Development Plan	No	-	-	-	-
Comment:					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	No				
Comment:					
Transportation Plan	Yes	Local, Netcong School	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Netcong School Travel Plan, 12/2006					
Agriculture Plan	No	-	-	-	-
Comment:					
Climate Action Plan	No	-	-	-	-
Comment:					
Tourism Plan	No	-	-	-	-
Comment:					
Business Development Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local, OEM	Yes	-	-
Comment: Municipal Emergency Operations Plan					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	-	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	-	-
Comment: Part of the EOP in the EOC annex; prior to any event, the Borough meets to identify what needs to be done to help reduce storm impacts					
Public Health Plan	Yes	Local	No	-	-
Comment: Part of the EOP but governed by the Mt. Olive Health Department					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes and No. Borough Zoning Department but uses Byram Construction Department for building permits
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. Through the redevelopment plan

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Netcong.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board consists of volunteer residents appointed by the Mayor & Council who are responsible for preparing the Borough Master Plan in compliance with provisions of the New Jersey Municipal Land Use Law (MLUL) and who are responsible for reviewing zoning ordinances referring to them by the Mayor & Council.
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	No	-
Economic Development Commission / Committee	Yes	Borough Council
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Reverse 911 (Swift911) through the County
Maintenance program to reduce risk	Yes	The Borough conducts storm drain cleaning and tree trimming to help reduce the impacts during storm events. Catch basins are inspected twice a year to maintain function and efficiency. If there is sediment, trash or debris in the basins, the Borough will clean as needed.
Mutual aid agreements	Yes	Surrounding communities and Morris County
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer, Borough Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer, Borough Construction Official
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer
Staff with training in benefit/cost analysis	Yes	Borough Administrator
Staff with training in green infrastructure	Yes	Borough Engineer
Staff with education/knowledge/training in low impact development	NYes	- Borough Engineer

Staff/Personnel Resource	Available?	Department/Agency/Position
Surveyor	Yes	Borough Engineer
Personnel skilled or trained in GIS applications	Yes	Borough Engineer
Scientist familiar with natural hazards in local area	Yes	Borough Engineer
Emergency manager	Yes	Emergency Management Coordinator
Watershed planner	Yes	Borough Engineer
Environmental specialist	Yes	Borough Engineer
Grant writers	Yes	Borough Engineer, Borough Administrator
Resilience Officer	No	-
Other	Yes	Borough Engineer – Certified Floodplain Manager

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Netcong.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Netcong.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Borough Administrator
Do you have personnel skilled or trained in website development?	Yes – Borough Administrator
Do you have hazard mitigation information available on your website? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes - The Borough provides news and event information on the homepage of their website (http://netcong.org/).

Criterion	Response
Do you use social media for hazard mitigation education and outreach? <ul style="list-style-type: none"> If yes, briefly describe. 	The Borough has a public outreach program that informs its citizens on hazards. Additionally, the Borough utilizes Swift Reach which allows the community to provide important information (alerts, advisories, community information, traffic, etc.) to the residents of the Borough.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <ul style="list-style-type: none"> If yes, briefly describe. 	No
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – Borough Calendar, tax bill, Facebook
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – Swift Reach

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Netcong.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	
Public Protection (Fire ISO Protection Class)	Yes	5	
Storm Ready Certification	No		
Firewise Community Classification	No		
Sustainable Jersey	No	Registered	3/6/2009

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Administration and Engineering
Who is your floodplain administrator? (name, department/position)	Administration and Engineering
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	Chapter 164; adopted 7/13/1982
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets the minimum; however, it does not meet the design flood elevation required by NJDEP.
When was the most recent Community Assistance Visit or Community Assistance Contact?	According to information provided by FEMA, dated March 18, 2020, a CAV or CAC has not been conducted for the Borough.

Criterion	Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	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
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No – the Borough is not interested in joining CRS at the time of the plan update
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	1 Policy in force. \$250,000 Insurance In-Force. \$1,524 Premium In-Force.
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	3 Claims. 0 claims still open, 0 claims closed without payment. \$1,017,297 claim amount.
Do you maintain a list of properties that have been damaged by flooding?	Yes - McMullan and Route 183; Allen and Route 183 are the floodprone areas in the Borough - two different water sources
Do you maintain a list of property owners interested in flood mitigation?	No – there is no interest within the Borough at the time of the plan update

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2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Netcong that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Netcong has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

There are zero repetitive loss properties within the borough.

2.3 CRITICAL FACILITIES

There are zero repetitive loss properties within the borough.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking

process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and bounce back after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Netcong. The Borough of Netcong has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 8: Borough of Netcong Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Medium
Geological Hazards	Low		

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2.5 COMPLETED ACTIONS

Borough of Netcong reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were cancelled:

- **Action:** Update the Borough’s flood damage prevention ordinance. **Reason:** No reason provided.
- **Action:** Floodproof the municipal building and police department. **Reason:** No reason provided.
- **Action:** Enhance pandemic response operations. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

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Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Netcong	GIS Mapping of Catch Basin & General Stormwater Facilities	The location of all catch basins and stormwater facilities, both private and public, need to be identified, mapped, and located for planning, maintenance, and proposed upgrades to the system. This is done by creating a GIS Mapping system.	Infrastructure mapping is critical to emergency response, review of issues, and creating recommendations for improvements. This must be complete by the end of 2025 per NJDEP MS4 Permit. \$25,000 grant from NJDEP for mapping, obtained.	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Netcong	Develop All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Need for a All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Create and continuously update All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	No	New
3	Netcong	Review & update the Rockaway Borough Flood Hazard Area Ordinance	The Netcong Borough Flood Hazard Area Ordinance should be consistent with FEMA requirements. Updating is required periodically and will be required when FEMA issues the new digital mapping to replace the prior paper maps	The Borough anticipates reviewing and updating the Flood Hazard Area Ordinance upon the adoption of the new FEMA maps to replace the prior maps. Status is on-going and the adoption has not been scheduled. This will improve regulatory and enforcement capabilities to manage flood risk.	No	New
4	Netcong	Firehouse #2 Generator	The existing ground mounted generator at Firehouse #2 is nearing the end of its useful life. A comprehensive analysis of the generator should be undertaken and plans for replacement of the generator be generated.	Auxiliary power at Firehouse #2 is critical to provide emergency services during all hazard events.	No	New
5	Netcong	Borough wide generator Inspection and review	The Borough has generators at its critical facilities and has routine maintenance contracts. A comprehensive analysis and review of all generators is required for long-term capital budgeting on the replacement or upgrade of the generators	This is an action to plan for future generator costs and expenditures, rather than react to their failures	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
6	Netcong	Sanitary Sewer Reinforcement Under Railroad Avenue	The existing 8" sanitary sewer line that runs under Railroad Avenue is a major vulnerability for the Borough's sanitary sewer system. About a quarter of the town's sewage runs through this pipe which is under the railroad tracks.	Reinforcement of, or a replacement of, the existing 8" sanitary sewer line that runs under Railroad Avenue would provide reinforcement to a vulnerability in the Borough's sanitary sewer system	No	New
7	Netcong	McMullen Street Drainage Improvements	Localized flooding during large storm events	The previous version of this action called for a study to determine drainage improvements needed, and to implement the drainage improvements recommended at the end of the study. The drainage evaluation is currently in progress; once completed, it will result in actionable mitigation strategies to directly mitigate issues with drainage.	No	New

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	Severe Winter Weather, Flood, Drought	Goal 3	Goal 1; Goal 5	<u>Engineering</u>	Administration	NJDEP Grant funding, Capital Budget	Improved data collection, reduction in hazard impacts; identify hazards
2	Severe Weather	ALL Hazards	Goal 2	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve education and outreach
3	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve capabilities, coordination at Municipal level
4	Severe Weather	Severe winter weather; Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration, Fire & Police Department	Capital; FEMA Grants	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
5	Severe Weather	Severe winter weather; Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration, Fire & Police Department	Capital	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
6	Severe Weather	Severe winter weather; Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration, DPW	Capital	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
7	Severe Weather	Severe winter weather; Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration, DPW	Capital	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

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2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	1-3 years	1	2	3	3	3	12	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
2	Under \$50k	1-3 years	3	3	2	1	2	11	Medium
3	Under \$50k	Under 1 year	1	3	3	3	3	13	High
4	\$50k-250k	1-3 years	2	3	3	3	2	13	High
5	Under \$50k	1-3 years	2	3	3	3	2	13	High
6	\$500k-\$750k	1-3 years	1	3	3	3	2	12	Medium
7	\$250k-\$500k	3-5 years	1	3	2	1	2	9	Medium

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Figure 1: Borough of Netcong Hazard Area Extent and Location Map 1

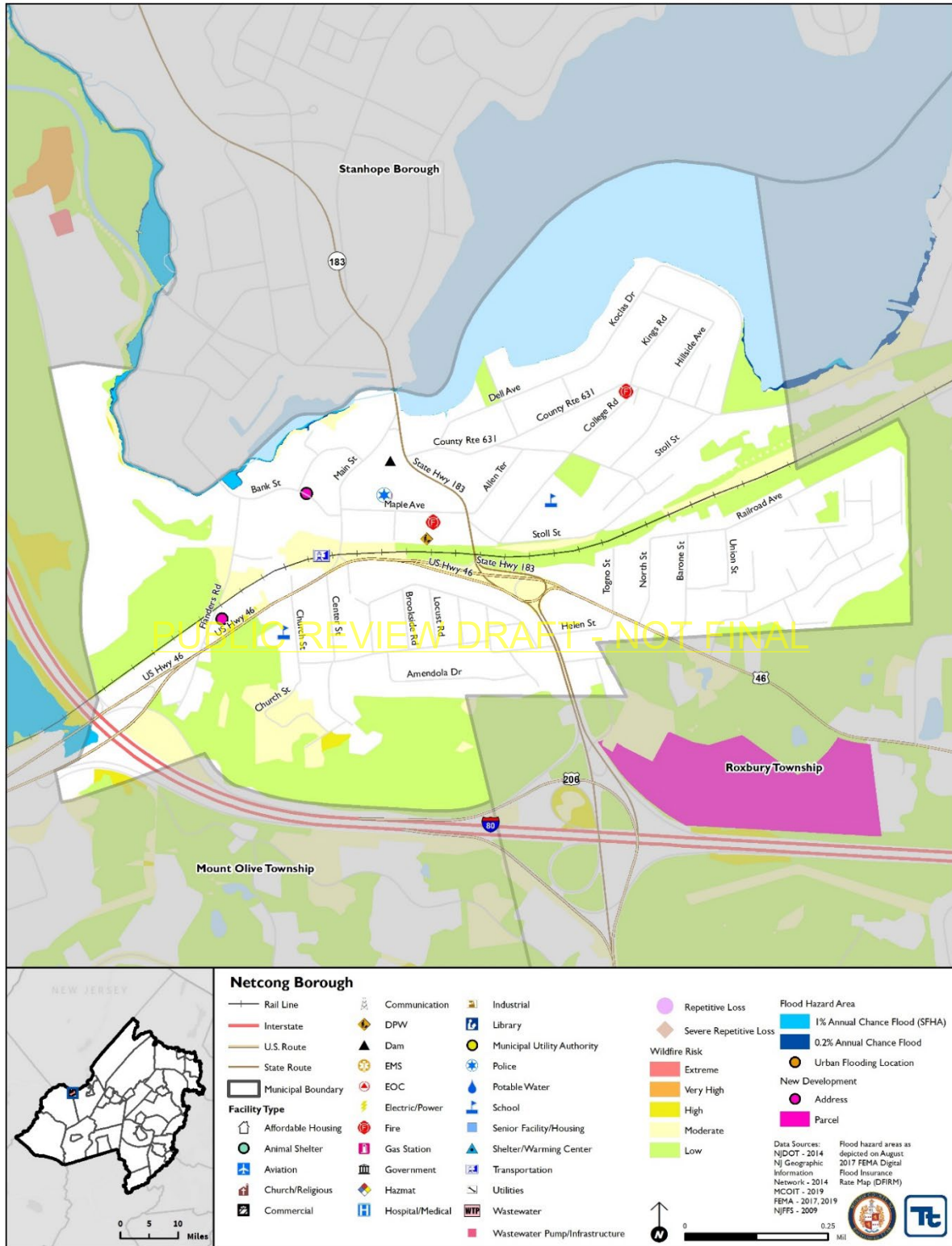
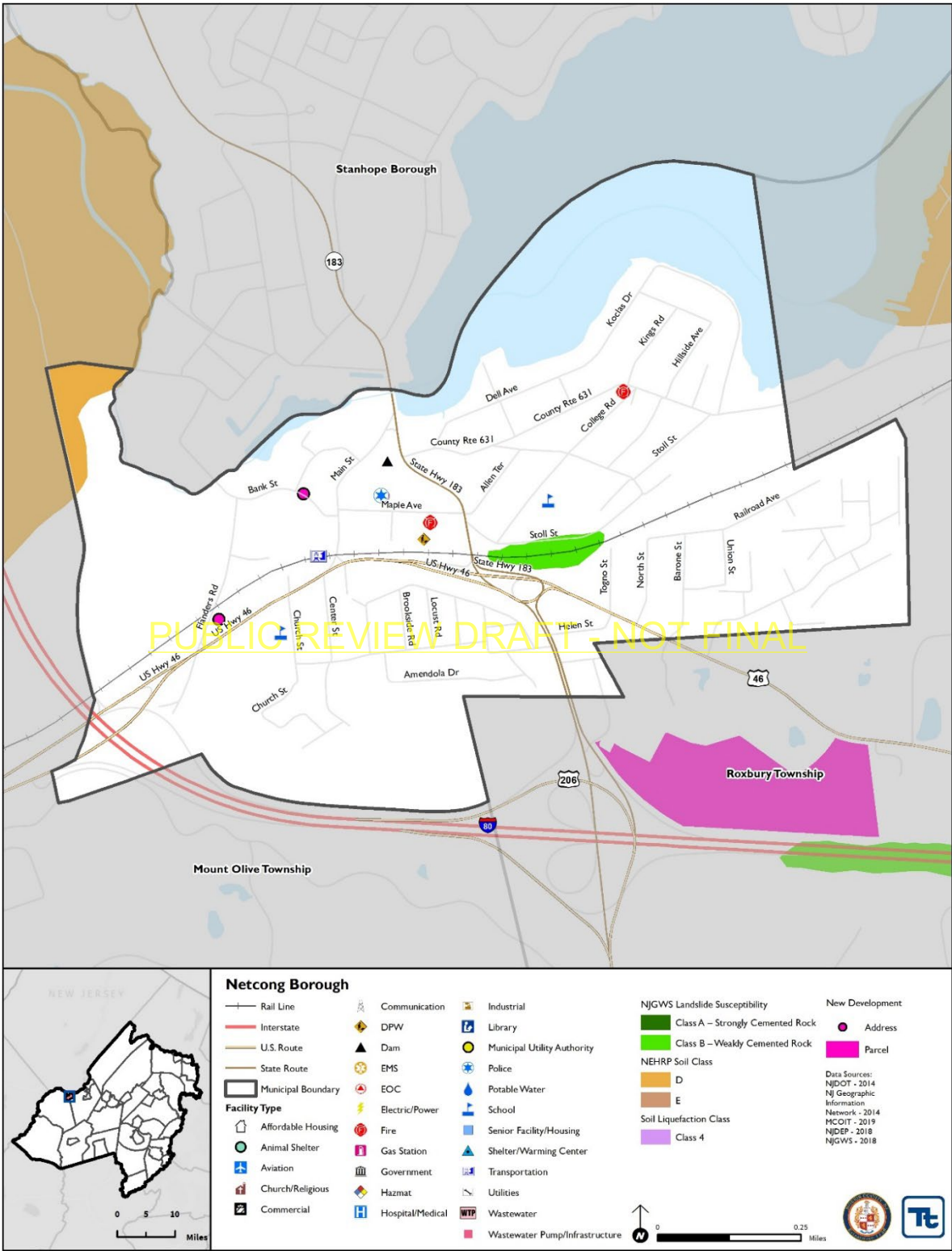


Figure 2: Borough of Netcong Hazard Area Extent and Location Map 2



ANNEX 12: BOROUGH OF RIVERDALE COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Riverdale and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter 149 of the municipal code. Administered by the Planning Board.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Ordinance #12-2011, Chapter 168, updated in 2014. Administered by the Zoning Board.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 37 of the municipal code. Administered by the Zoning Board.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 145 of the Revised General Ordinance, 2010.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level;					
Shoreline Development	No	-	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	No	No	-
Comment: Chapter 149, 1991. Administered by the Construction Code Official.					
Environmental Protection	Yes	State, Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Steep Slope, EIS requirements, and Shade Tree ordinances.					
Flood Damage Prevention	Yes	Local	Yes	-	-
Comment: Chapter 104 Flood Hazard Control. 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: <ul style="list-style-type: none">• Protect human life and health.• Minimize expenditure of public money for costly flood control projects.• Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.• Minimize prolonged business interruptions.• 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.• 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.• Ensure that potential buyers are notified that property is in an area of special flood hazard.• Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	-	Yes	-
Comment: Ordinance No 2-2016 Emergency Management. Administered by the Emergency Management Coordinator.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: The Master Plan of Riverdale, January 2008. Administered by the Planning Board. The Plan includes elements for Historic, Housing, Green, Utilities, Circulation, Demographic, Land Use, and Vision. The Plan identified the following actions: Plant trees. Trees are relatively inexpensive and keep ambient temperatures down by providing shade for buildings and surrounding areas and are a critical component to effective site design and development.; Create utility service plan showing future water supply and distribution facilities, drainage and flood control facilities, sewage and waste treatment, solid waste disposal and provision for other related utilities.; Preserve the land around the Pequannock River by discouraging inappropriate land uses and development within the river buffer areas and designated flood zones. The Plan also has a map of hazard areas and includes an element that identifies relationships to other plans.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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. 2014. Administered by Administration.					
Disaster Debris Management Plan	No	-	No	-	2020-Borough of Riverdale-008
Comment:					
Floodplain or Watershed Plan	Yes	County, Local	No	No	-
Comment: Flood Acquisition Plan (with Morris County). Administered by OEM working with all departments.					
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: 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). Administered by the Planning Department.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	-
Comment: Stormwater Pollution Prevention Plan. Administered by the Planning Department.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	Local	Shade Tree Commission	No	-
Comment: The Community Forestry Management Plan of March 2008 conducted an inventory of municipal street trees, promotes replanting of lost trees, and promotes maintenance of trees.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Transportation Plan	Yes	Local	OEM	No	-
Comment: As part of the EOP. Administered by OEM.					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. Emergency Operations Plan is administered by OEM.					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	No	No	-
Comment: As part of the Emergency Operations Plan, administered by OEM.					
Post-Disaster Recovery Plan	Yes	Local	No	No	-
Comment: As part of the Emergency Operations Plan, administered by OEM.					
Continuity of Operations Plan	Yes	Local	No	No	-
Comment: As part of the Emergency Operations Plan, administered by OEM.					
Public Health Plan	Yes	Local	No	No	-
Comment: As part of the Emergency Operations Plan, administered by OEM.					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Zoning Official, Construction, or Planning
Does your jurisdiction have the ability to track permits by hazard area?	Yes, GIS through the County

Criterion	Response
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, Fair Share Housing Element

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

- **Planning and Zoning Board:** The Planning and Zoning Board consists of volunteer residents appointed by the Mayor and Council who are responsible for preparing the Borough Master Plan in compliance with provisions of the New Jersey Municipal Land Use Law (MLUL) and who are responsible for reviewing zoning ordinances referred to them by the Mayor & Council. The Riverdale Planning is a joint board in that it fulfills the responsibilities of both a planning board and a zoning board of adjustment. In such cases the mayor and council representative step down and do not participate in or vote on such applications. The Zoning Board reviews applications that propose to utilize property in a manner not consistent with municipal zoning laws. They preview applications for variances that are basically non-permitted uses, and the Zoning Board is empowered to grant exceptions to the zoning ordinances in cases where the literal and rigid interpretation and enforcement of the zoning laws would cause hardship or injustice. These "non-permitted" uses are based upon the zoning ordinances established by the Borough (Riverdale 2019).
- **Shade Tree Commission:** The Shade Tree Commission maintains and protects shade trees within the Borough and is responsible for the Community Forestry Management Plan (Riverdale 2019).
- **Community Forestry Management Plan:** The Community Forestry Management Plan of March 2008 conducted an inventory of municipal street trees, promotes replanting of lost trees, and promotes maintenance of trees.
- **Communications Office:** The Communications Department was created to assist in maintaining the Borough's website (<https://www.riverdalenj.gov/>) and to maintain and update the Borough's social media accounts. The Department also explores new methods to communicate using online and social media tools and brainstorms how the Borough website could be better utilized and how technology and other tools could be used to improve it.

The Borough of Riverdale uses various social media channels to reach residents and local business owners about what is going on in the Borough of Riverdale. The Borough Social Media Pages are maintained by the Borough of Riverdale Communications Department.

- Twitter: <https://twitter.com/RiverdaleNJ>
- Facebook: <https://www.facebook.com/RiverdaleNewJersey/>
- Live Stream of Council Meetings: 2nd and 4th Wednesday of the Month (7:30 p.m. sharp on Facebook).
- **Flood Acquisition Plan:** The Borough has participated in the County's Flood Mitigation Program (FMP) and has an approved Flood Acquisition Plan (FLAP). The Morris County FMP is the first dedicated, county-level flood acquisition program in the State of New Jersey. The FMP allows Morris County to assist municipalities in moving people out of harm's way, lowering municipal costs due to intense flooding episodes, and create natural flood capture and storage areas which protect the remaining homes and businesses. The FMP is funded by the Morris County Open Space tax and provides grant monies for municipalities to purchase flood-prone residential properties.

The table below summarizes potential staff and personnel resources available to the Borough of Riverdale.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	OEM-
Environmental Board / Commission	No	-
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Nixle, CodeRED, social media, website, Sirens
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Neighboring Communities
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Board Professional Planner and Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Planning Board Professional Planner and Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planning Board Professional Planner and Engineering
Staff with training in benefit/cost analysis	No	
Staff with training in green infrastructure	Yes	Borough engineer and planning
Staff with education/knowledge/training in low impact development	Yes	Borough engineer and planning
Surveyor	Yes	Outside contract
Stormwater engineer	Yes	Borough Engineer & Planning Board Engineer
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	Yes	Borough Engineer & Planning Board Engineer
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Daniel Sturm
Grant writers	No	-
Resilience Officer	No	-
Watershed planner	No	-
Environmental specialist	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Riverdale.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No

Financial Resource	Accessible or Eligible to Use?
User Fees for Water, Sewer, Gas or Electric Service	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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Riverdale.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes; Social Media Director
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes; Facebook, Twitter, website, and Constant Contact, newsletter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	No
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes; Nixle, CodeRED, social media, website

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Riverdale.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	Class 8	May 1, 2014
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes		
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering, Building
Who is your floodplain administrator? (name, department/position)	Borough Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	December 5, 1988
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Exceeds, member of CRS program
When was the most recent Community Assistance Visit or Community Assistance Contact?	2018
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state what they are. 	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what they are. 	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If no, state why. 	No, maps are under appeal
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	-
Does your jurisdiction participate in the Community Rating System (CRS)? <ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	Yes, yes
How many flood insurance policies are in force in your jurisdiction? <ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	Policies in force: 57 Insurance in force: \$16,400,900 Premium in force: \$119,687
How many total loss claims have been filed in your jurisdiction? <ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	Total loss claims: 129 Claims still open or closed without payment: 27 Total payments for losses: \$869,315
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Riverdale that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Riverdale has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Riverdale.

- Number of repetitive loss (RL) properties: 21
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 2

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
FILTRA CORP.	Hazardous Material		X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; and community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Borough of Riverdale. The Borough of Riverdale has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect 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 changed the hazard ranking of Drought from Medium to Low.
- The Borough changed the hazard ranking of Earthquake from Medium to Low.
- The Borough changed the hazard ranking of Geological Hazard from High to Low.
- The Borough changed the hazard ranking of Severe Weather from High to Medium.
- The Borough changed the hazard ranking of Severe Winter Weather from High to Medium.
- The Borough changed the hazard ranking of Hazardous Substances from High to Medium.
- The Borough changed the hazard ranking of Disease Outbreak from High to Low.
- The Borough changed the hazard ranking of Infestation from Medium to Low.

Table 9: Borough of Riverdale Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Low	Hazardous Substances	Medium
Earthquake	Low	Severe Weather	Medium
Extreme Temperature	Low	Severe Winter Storm	Medium
Flood	Medium	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

The following actions were completed:

- **Action:** Create a specific debris removal plan that includes NJDEP pre-permitting of sites chosen. **Notes:** No notes provided.

2.6 CANCELLED ACTIONS

Borough of Riverdale reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan?	2024 Project Status Provided by Respondent (not applicable to any new actions)
					Yes/No	Not Started In Progress
1	Riverdale Borough	Flood Gate on Riverdale Road	Riverdale Road becomes impassable during major storms and flooding events. Closure of the roadway requires police staff to be posted at the road in order to prevent cars from entering the flooded area.	The Borough will work with the County to place a road closure gate that can be closed by police during times of flooding and opened when no flooding is occurring to reduce staffing needs.	Yes	Not Started
2	Riverdale Borough	Flood Gate on Hamburg Turnpike	Hamburg Turnpike becomes impassable during major storms and flooding events. Closure of the roadway requires police staff to be posted at the road in order to prevent cars from entering the flooded area.	The Borough will work with the County to place a road closure gate that can be closed by police during times of flooding and opened when no flooding is occurring to reduce staffing needs.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
3	Riverdale Borough	Electronic Message Boards	Traffic from Interstate 287 and Route 23 causes major traffic delays when flood prone roadways flood. There is currently no way to notify motorists of flooded roads.	Purchase and install four mobile electronic message boards to be posted on roadways. Signs should be able to be controlled from the EOC. Utilize signs to limit traffic from exiting the interstate and highway. The signs could be utilized for outreach when not in use.	Yes	Not Started
4	Riverdale Borough	Backup power for traffic lights	Loss of power to traffic lights of exits from Interstate 287 and 23 causes dangerous traffic throughout the Borough on various roadways. During certain hazard events, this congestion causes increased safety concern and keeps motorist exposed to dangerous conditions longer.	Install battery backup on vital traffic signals in the Borough, specifically those that exist on exits from Interstate 287 and 23.	Yes	Not Started
5	Riverdale Borough	Mitigate flood-prone properties, including RL/SRL properties	Frequent flooding events have resulted in damages, resulting in 20 repetitive loss properties. The flood prone areas are residential, and these properties have been repetitively flooded as documented by paid NFIP claims.	Conduct outreach to 30 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	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood risk reduced, reduction in staffing		Flood risk reduced, reduction in staffing		<u>County, Office of Emergency Management</u>	OEM, PD, DPW	HMGP	Flood risk reduced, reduction in staffing
2	Flood	Flood risk reduced, reduction in staffing	Goal 2	Flood risk reduced, reduction in staffing	<u>County, Office of Emergency Management</u>	OEM, PD, DPW	HMGP	Flood risk reduced, reduction in staffing
3	Flood risk reduced, reduction in staffing	Flood risk reduced, reduction in staffing	Goal 2		<u>Office of Emergency Management</u>	OEM, PD, DPW	HMGP, FMA, BRIC	Reduction in risk to motorists.
4	Flood	Flood risk reduced, reduction in staffing	Goal 2	Flood risk reduced, reduction in staffing	<u>Office of Emergency Management</u>	OEM, PD, DPW	HMGP, BRIC	Traffic kept flowing during power outages
5	Flood risk reduced, reduction in staffing	Flood risk reduced, reduction in staffing	Goal 2		<u>NFIP Floodplain Administrator, supported by homeowners</u>	OEM, Flood plain admin	FEMA, HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space.

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	1-3 years	2	1	2	1	1	7	Low
2	Under \$50k	1-3 years	2	1	2	1	1	7	Low
3	Under \$50k	1-3 years	2	1	3	1	3	10	Medium
4	Under \$50k	1-3 years	2	1	2	1	2	8	Low
5	Over \$1M	1-3 years	3	3	3	2	3	14	High

Figure 1: Borough of Riverdale Hazard Area Extent and Location Map 1

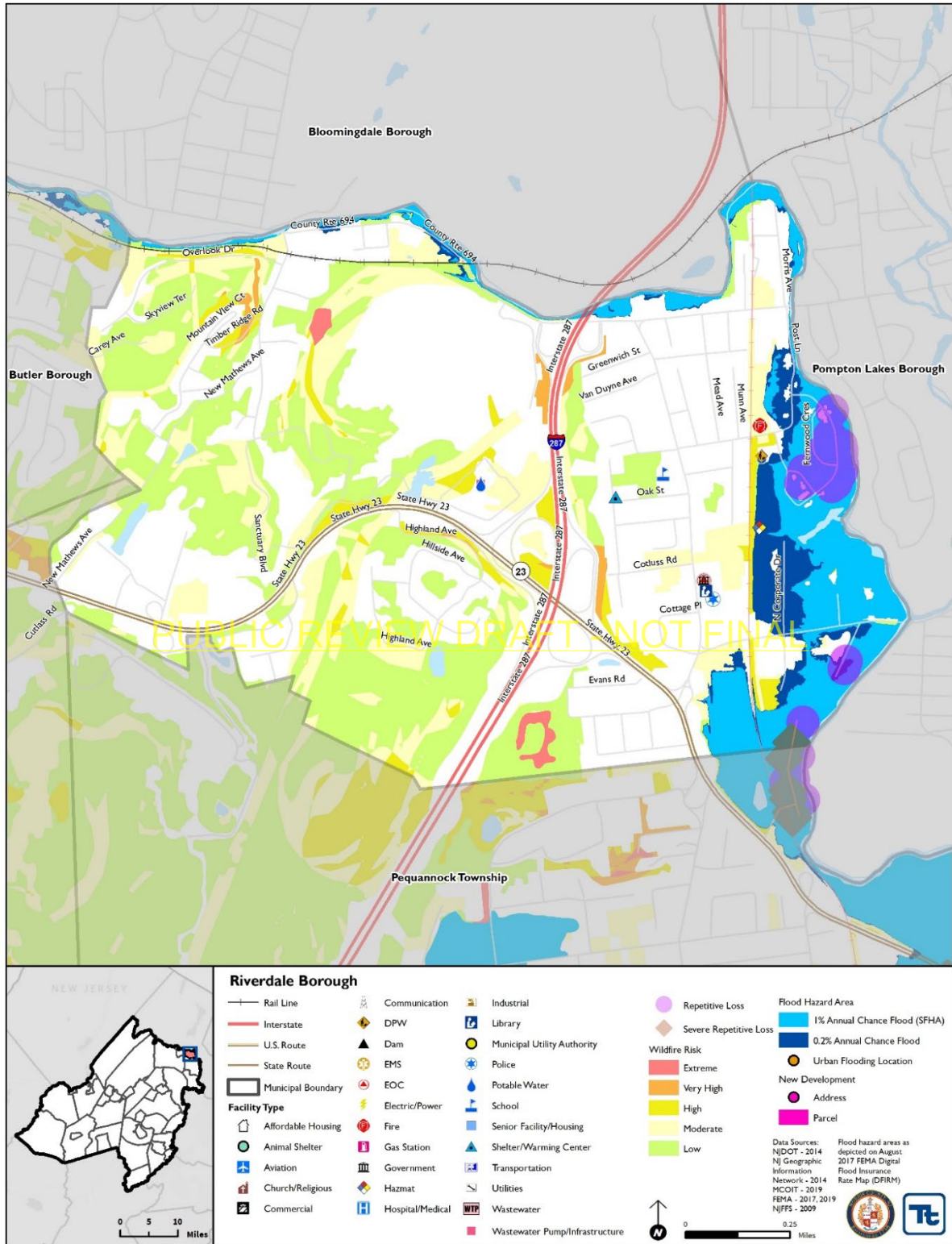
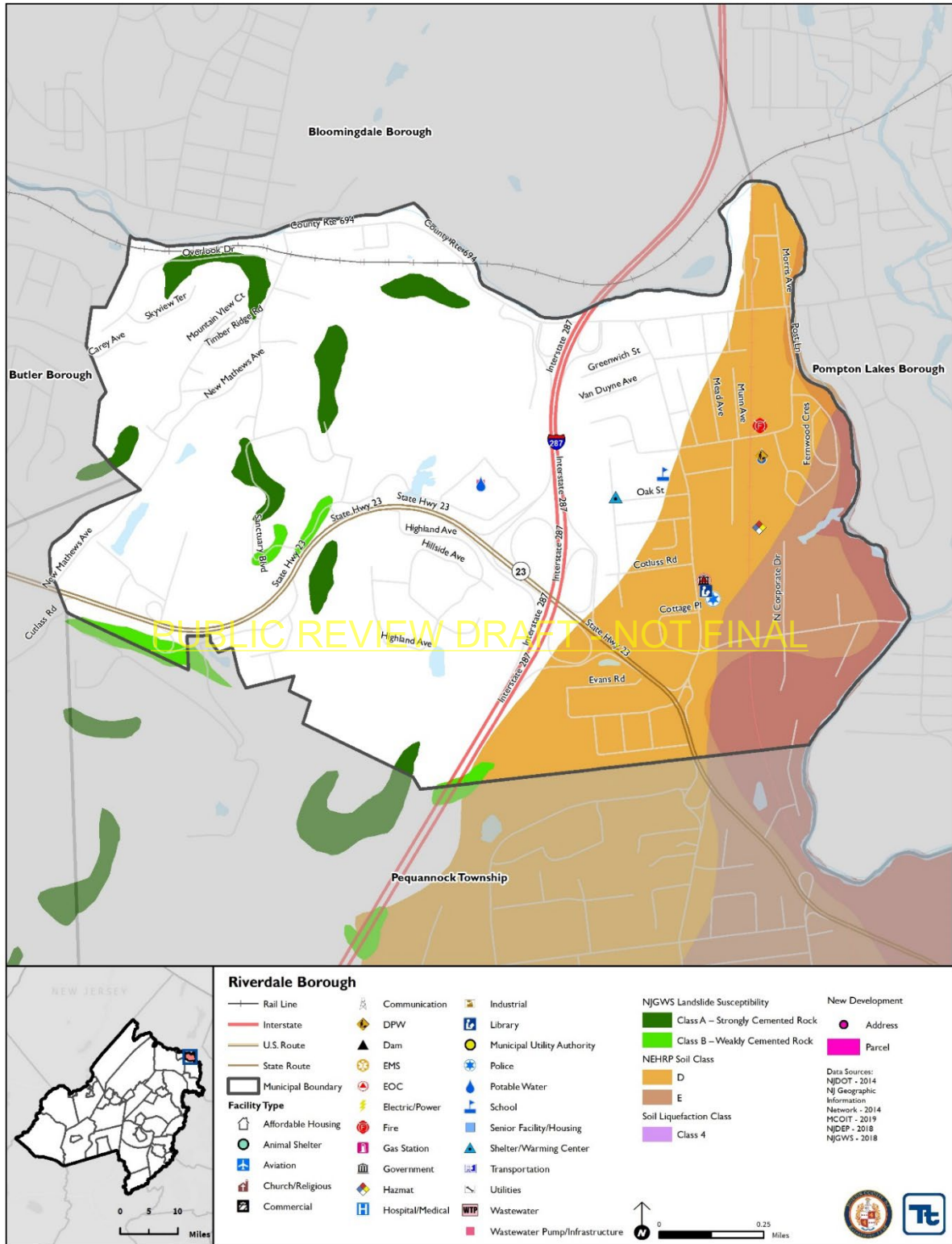


Figure 2: Borough of Riverdale Hazard Area Extent and Location Map 2



APPENDIX 13: BOROUGH OF ROCKAWAY COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Rockaway and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes, 12/9/76, Ord. 17-76	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes, 10/24/96, Ord. 12-96	Local	Yes, if have planning board	Yes	-
Comment: State permissive on local level. [note local ordinance # and date of adoption]. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by Land Use Bd., Chapter 172, Sections 172-1 – 172-94; Zoning.					
Subdivisions	Yes, 10/24/96, Ord. 12-96	Local	Yes, if have planning board	Yes	-
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. 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. Enforced by Land Use Bd., Chapter 171, Sections 171-1 – 171-13; Requirements for subdivisions.					
Stormwater Management	Yes, 4/13/06, Ord. 12-96	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by GB/Land Use Bd., Chapter 170, Sections 170-36 – 170-36.10; Stormwater control.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Enforced by Division of Consumer Affairs, N.J. A. C. 13:45A-29.1.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Growth Management	No	Local and State	Yes	No	No
Comment: State Mandated on a municipal level. See Zoning Ordinance ; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	Yes	-
Comment: 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 freeholders 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. Enforced by Land Use Bd., Chapter 171, Sections 171-14 – 171-20; Requirements for site plans.					
Environmental Protection	No	-	Yes	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	No	Yes	-
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Enforced by Borough Engineer, Chapter 139A – Flood Damage Prevention.					
Wellhead Protection	No	Local	No	-	-
Comment: 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)).					
Emergency Management	No	-	-	-	-
Comment: 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	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other: Steep Slope Ordinance	Yes, 10/24/96, Ord. 12-96	Local	-	Yes	-
Comment: Enforced by Land Use Bd., Chapter 170, Section 170-5; Steep slope.					
Planning Documents					
Master Plan	Yes	Local	Yes County: Yes	No	No
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Enforced by the Land Use Bd., 1995. Re-examined 2002, 2008, 2018.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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. Enforced by Gov. Body.					
Disaster Debris Management Plan	No	-	No	No	No
Comment:					
Floodplain or Watershed Plan	No	-	No	No	No
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332)					
Stormwater Management Plan	Yes, 4/13/06, Ord. 04-06	Local	Yes	No	No
Comment: 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), updated January 1, 2023. Enforced by Land Use Bd., Chapter 170, Sections 170-36 – 170-36.10; Stormwater control.					
Stormwater Pollution Prevention Plan	No	Local, State	Yes	No	No
Comment: 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), updated January 1, 2023.					
Urban Water Management Plan	No	-	No	No	No
Comment:					
Habitat Conservation Plan	No	-	No	No	No
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Economic Development Plan	No	-	No	No	No
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	No	No
Comment:					
Community Wildfire Protection Plan	No	-	No	No	No
Comment:					
Community Forest Management Plan	No	-	No	No	No
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	No	No
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4).					
Agriculture Plan	No	-	No	No	No
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	No	No
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	No	No
Comment:					
Business Development Plan	No	-	No	No	No
Comment:					
Other: Shade Tree commission	No	-	Allowed	No	No
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958.					
Other - Historic Preservation	No	-	Allowed	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	No	-	Yes	No	No
Comment: 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.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	No	No
Comment:					
Post-Disaster Recovery Plan	No	-	No	No	No
Comment:					
Continuity of Operations Plan	No	-	No	No	No
Comment:					
Public Health Plan	No	-	Yes/No	No	No
Comment:					
Other	No	-	Yes/No	No	No
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Construction
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Borough is 95% built out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Rockaway.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Borough Engineer/Borough Planner
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Advisory Committee – 3 Volunteers
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Alert Morris
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Police and Fire Depts.

Staff/Personnel Resource	Available?	Department/Agency/Position
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer/Borough Planner
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 training in benefit/cost analysis	Yes	Borough Engineer
Staff with training in green infrastructure	Yes	Borough Engineer
Staff with education/knowledge/training in low impact development	Yes	Borough Engineer
Surveyor	Yes	Borough Engineer
Stormwater engineer	Yes	Borough Engineer
Personnel skilled or trained in GIS applications	Yes	Borough Engineer
Local or state water quality professional	Yes	Water Department
Scientist familiar with natural hazards in local area	Yes	Borough Engineer
Emergency manager	Yes	Police Chief/OEM Coordinator
Watershed planner	Yes	Borough Engineer
Environmental specialist	Yes	Borough Engineer
Grant writers	Yes	Borough Engineer
Resilience Officer	No	-
Other	Yes	Borough Engineer – Certified Floodplain Manager

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Rockaway.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes – Engineer/Finance
Capital Improvements Project Funding	Yes – Finance
Authority to Levy Taxes for Specific Purposes	Yes – Finance
User Fees for Water, Sewer, Gas or Electric Service	Yes – Water Dept. collects fees set by Governing Body
Incur Debt through General Obligation Bonds	Yes – Finance
Incur Debt through Special Tax Bonds	Yes – Finance
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes – Engineer/Finance
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Rockaway.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes. Link to OEM website. https://www.rockawayborough.org/departments/oem/
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes. Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes. Environmental Commission.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Borough website, tax mailing, water bill, sewer bill
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes. AlertMorris

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Rockaway.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes	4	1995
Storm Ready Certification	No		
Firewise Community Classification	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Engineer
What is the date that your flood damage prevention ordinance was last amended?	02/26/2015
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	11/05/1992

Criterion	Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	County
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input type="checkbox"/> If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	47 \$13,218,800 \$113,453
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	84 11 \$1,463,817
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Rockaway that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Rockaway has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Rockaway.

- Number of repetitive loss (RL) properties: 9
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
McWilliams Forge Co. Inc	Hazardous Material	X	X
Weldon Asphalt	Potable Water Facility	X	X
Well #1	Well		X
Well #6	Well		X

* Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Rockaway. The Borough of Rockaway has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Borough of Rockaway increased the ranking for Dam Failure from Medium to High.

Table 9: Borough of Rockaway Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

Borough of Rockaway reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were cancelled:

- **Action:** Perform engineering study to determine source of flooding and recommend mitigation actions. **Reason:** No reason provided.
- **Action:** Determine mitigation strategies, if any, to secure the Wells #1 and #6 during events. **Reason:** No reason provided.
- **Action:** Notify the owner of Weldon Asphalt that the area of Franklin Ave is in the floodplain. **Reason:** No reason provided.
- **Action:** Notify the owner of McWilliams Forge that the area of Franklin Ave is in the floodplain. **Reason:** No reason provided.
- **Action:** Educate the owners of the RL property that the property is identified as RL and the status of the property location within or outside the floodplain. Provide them with mitigation options and apply for grant funding if needed to implement actions. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

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2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Rockaway Borough	GIS Mapping of Catch Basin & General Stormwater Facilities	The location of all catch basins and stormwater facilities, both private and public, need to be identified, mapped, and located for planning, maintenance, and proposed upgrades to the system. This is done by creating a GIS Mapping system. This must be complete by the end of 2025 per NJDEP MS4 Permit. \$25,000 grant from NJDEP for mapping, obtained.	Infrastructure mapping is critical to emergency response, review of issues, and creating recommendations for improvements	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Rockaway Borough	Develop All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Need for a All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Create and continuously update All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	No	New
3	Rockaway Borough	Review & update the Rockaway Borough Flood Hazard Area Ordinance	The Rockaway Borough Flood Hazard Area Ordinance should be consistent with FEMA requirements. Updating is required periodically and will be required when FEMA issues the new digital mapping to replace the prior paper maps	The Borough anticipates reviewing and updating the Flood Hazard Area Ordinance upon the adoption of the new FEMA maps to replace the prior maps. Status is on-going and the adoption has not been scheduled. This will improve regulatory and enforcement capabilities to manage flood risk.	No	New
4	Rockaway Borough	Water Filter Plant generator	The existing generator is 43 years old and at the end of its useful life. This generator is at risk of failing at any time and back-up power to the filter plant is critical to serve the public.	A new generator would be reliable. Recommend increasing from existing 230 kw generator to 300 kw generator due to proposed future expansions of filter plant. Proposed 300 kw, mounted diesel generator	No	New
5	Rockaway Borough	Well #1, Back-Up Generator	There is currently no back-up power at the well except for a portable generator hook-up. The well is at risk due to this if portable power cannot be provided in short time	A generator would serve as back-up power for power failures at this site. Proposed 60 kw, diesel generator with automatic transfer switch and sound proofing.	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
6	Rockaway Borough	Well #6, Back-Up Generator	There is currently no back-up power at the well except for a portable generator hook-up. The well is at risk due to this if portable power cannot be provided in short time	A generator would serve as back-up power for power failures at this site. Proposed 60 kw, diesel generator with automatic transfer switch and sound proofing.	No	New
7	Rockaway Borough	Hillside Water Tank Stand by Generator	There is currently no back-up power at the water tank. The water tank is at risk of communication to the water system going down and being unable to detect tank levels during event of a power failure.	A generator would serve as back-up power for power failures at this site. Proposed 6 kw, natural gas generators with automatic transfer switch.	No	New
8	Rockaway Borough	Robert St Water Tank Stand by Generator	There is currently no back-up power at the water tank. The water tank is at risk of communication to the water system going down and being unable to detect tank levels during event of a power failure.	A generator would serve as back-up power for power failures at this site. Proposed 6 kw, natural gas generators with automatic transfer switch.	No	New
9	Rockaway Borough	Main St Pump Station	There is currently no back-up power at pump station. The pump station is at risk due to this if portable power cannot be provided in short time.	A generator would serve as back-up power for power failures at this site. Proposed 130 kw, diesel generator with automatic transfer switch and sound proofing.	No	New
10	Rockaway Borough	Analysis of nine repetitive loss properties in the Borough.	9 properties within Rockaway Borough as subject to repetitive losses from flood and severe storm events. An analysis should be conducted to see if these homes would be candidates for elevations, buy-outs, or other mitigation actions. Based on the results of	This analysis will determine the appropriate mitigation strategy (elevate, buy-out, flood vents, etc.) to protect the property owners from repetitive losses	Yes; but with revisions as requested	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			the analysis, a mitigation action can be put into planning for the properties.			
11	Rockaway Borough	Rockaway River Streambank Stabilization	A section of the Rockaway River in Rockaway Borough has eroded over time. The eroded area is adjacent to Jackson Avenue across from Mott Place and extends about 200-300 linear feet along the streambank. The Borough has the engineering design and NJDEP permitting in its 2024 capital budget request.	This action is for an engineered solution to install stabilization along an eroded streambank	No	New
12	Rockaway Borough	Union Street Canal Cleaning Project	This is for the removal of sediment from an existing drainage basin and drainage channel that has become impaired over time from severe storms and floods. This project has been designed and permitted. The project will go to bid in 2024.	Re-establishes existing drainage patterns and capacity.	No	New
13	Rockaway Borough	Burton Lane Drainage Improvements	During large storm events, existing drainage structures and facilities in the vicinity of Burton Lane become inundated and impact residential homes. The Borough regularly receives complaints on the drainage problems in this area.	Infrastructure improvements will better manage severe storms and flooding events	No	New
14	Rockaway Borough	Smith Field Drainage Basin Analysis and Upgrades	An analysis should be conducted to determine what upgrades are necessary to the Smith Field Drainage Basin. The results of	Infrastructure improvements will better manage severe storms and flooding events	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			the study (to enlarge basin) should be implemented.			
15	Rockaway Borough	Ogden & Drake Avenue Drainage Improvements	An open drainage channel is piped into a 54" elliptical pipe which causes backflow due to lack of capacity. The elliptical pipe needs to be analyzed and upgraded, as needed.	Infrastructure improvements will better manage severe storms and flooding events	No	New
16	Rockaway Borough	Fairview Development Drainage Analysis	There is no existing stormwater infrastructure in this neighborhood. During large storm events, there are significant amounts of run-off that impact residential properties.	Infrastructure improvements will better manage severe storms and flooding events	No	New
17	Rockaway Borough	Hill Street Development Drainage Analysis	There is no existing stormwater infrastructure in this neighborhood. During large storm events, there are significant amounts of run-off that impact residential properties.	Infrastructure improvements will better manage severe storms and flooding events	No	New

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	Severe Winter Weather, Flood, Drought	Goal 3	Goal 1; Goal 5	<u>Engineering</u>	Administration	NJDEP Grant funding, Capital Budget	Improved data collection, reduction in hazard impacts; identify hazards
2	Severe Weather	ALL Hazards	Goal 2	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve education and outreach
3	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve capabilities, coordination at Municipal level
4	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunities to mitigate losses
5	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
6	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
7	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
8	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
9	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

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	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
10	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
11	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
12	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
13	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

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	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
14	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
15	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
16	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
17	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

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2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	1-3 years	1	2	3	3	3	12	Medium
2	Under \$50k	1-3 years	3	3	2	1	2	11	Medium
3	Under \$50k	Under 1 year	1	3	3	3	3	13	High
4	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
5	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
6	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
7	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
8	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
9	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
10	Under \$50k	3-5 years	2	3	1	1	1	8	Low
11	\$250k-\$500k	1-3 years	1	3	2	2	3	11	Medium
12	\$50k-250k	Under 1 year	1	2	3	3	3	12	Medium
13	\$50k-250k	1-3 years	1	3	2	1	2	9	Medium
14	\$250k-\$500k	1-3 years	1	3	2	1	2	9	Medium
15	\$250k-\$500k	1-3 years	1	3	2	1	2	9	Medium
16	\$250k-\$500k	3-5 years	1	3	2	1	2	9	Medium
17	\$250k-\$500k	3-5 years	1	3	2	1	2	9	Medium

Figure 1: Borough of Rockaway Hazard Area Extent and Location Map 1

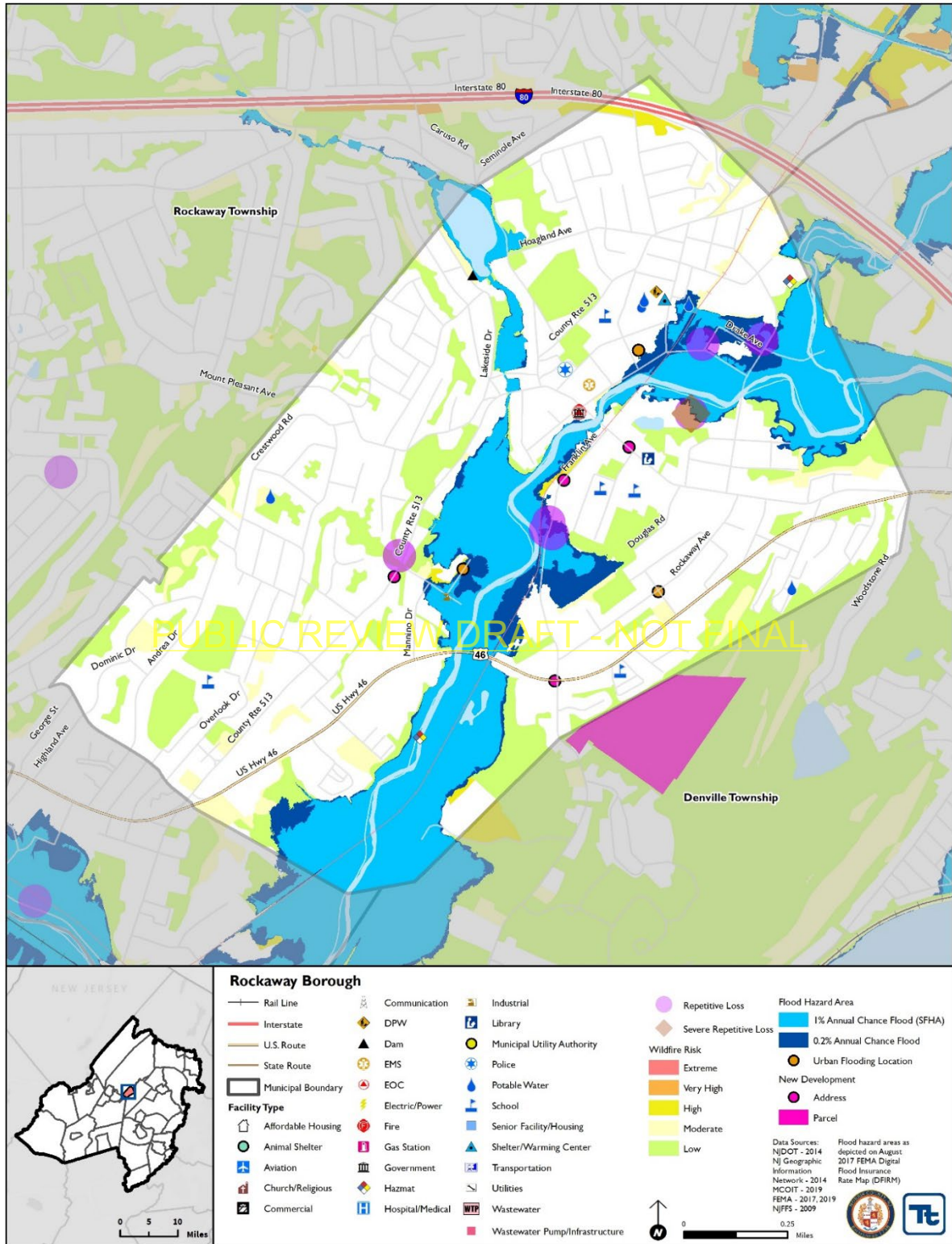
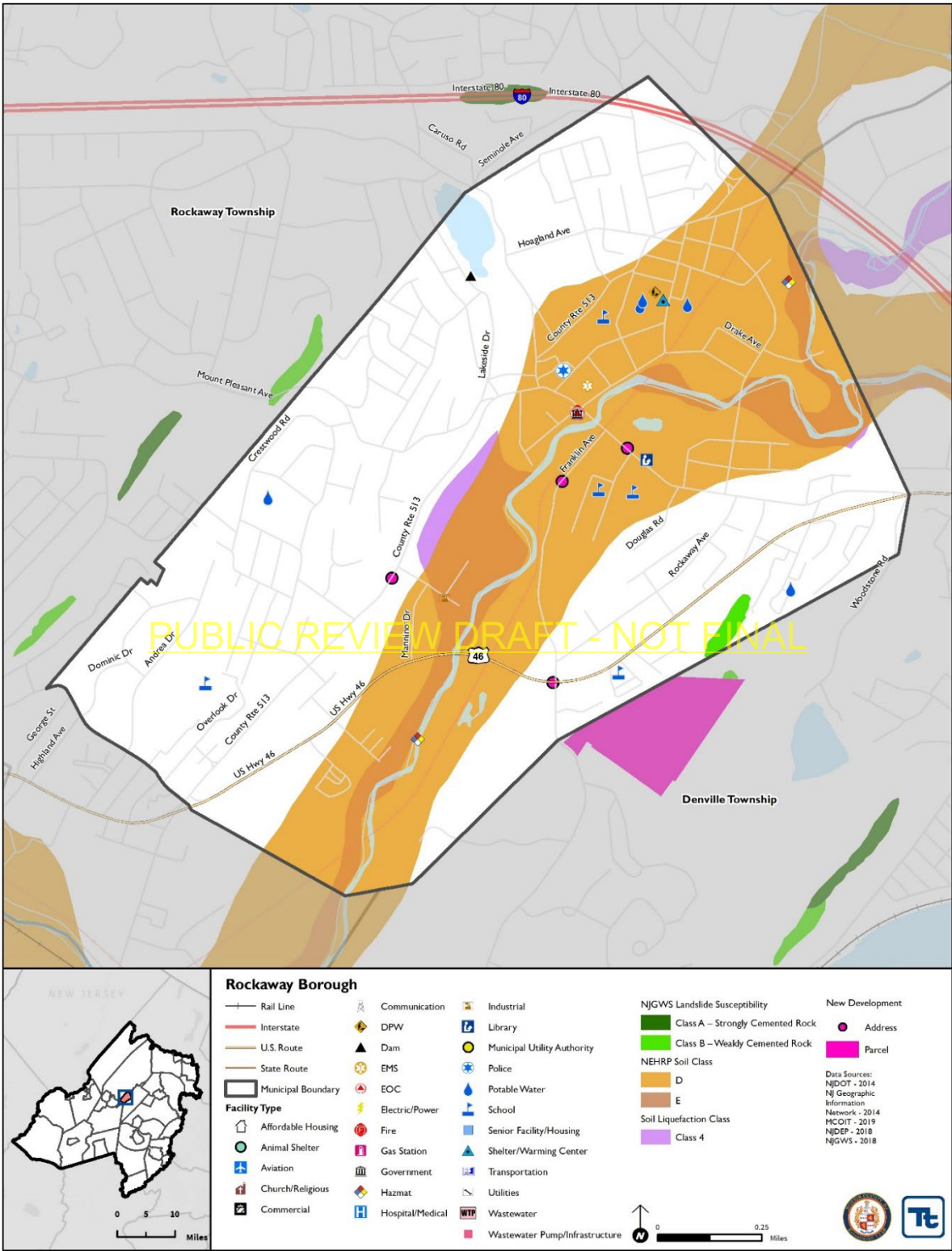


Figure 2: Borough of Rockaway Hazard Area Extent and Location Map 2



ANNEX 14: BOROUGH OF VICTORY GARDENS COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Victory Gardens and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes		
Comment: Chapter XI Building and Housing adopted by the Borough of Victory Gardens. The Borough established a State Uniform Construction Code 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. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Planning Board	Yes	
Comment: In accordance with Code Chapter XX (Land Use Procedures), the Planning Board acts as Zoning Board of Adjustment. Chapter XXIII (Zoning) – one of the intents of this chapter is to secure safety from fire, flood, panic and other natural disasters.					
Subdivisions	Yes	Local	Planning Board	Yes	
Comment: Code Chapter XXI (Land Subdivision and Site Plan Review). The purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision in the Borough of Victory Gardens in order to promote the public health, safety, convenience and general welfare of the Borough and to carry out the objective of the Municipal Land Use Law. It shall be administered to ensure the orderly growth and development, the conservation, protection and proper use of land and adequate provisions for circulation, utilities and services and the conservation and environmental protection of all land, water and air resources within the jurisdiction of the Borough. (1982 Code § 15-1.3). The Chapter discusses the suitability of a lot may require additional information from the Planning Board based on the presence of rock formations, soil conditions, steep slopes, streams, watercourses, flood conditions, high water table and/or other environmentally sensitive factors.					
Stormwater Management	Yes	Local			
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 18C (Municipal Stormwater Management and Storm Sewer Systems). Ordinance 6-26-12 provides for the management of stormwater and storm sewer systems including a portion of which addresses private storm drain inlets. Ordinance for Stormwater Control (21-20): The purpose is to establish minimum stormwater management requirements and controls for major development.					
Post-Disaster Recovery	No				
Comment:					
Real Estate Disclosure	Yes	State			

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Division of Consumer Affairs N.J.A.C. 13:45A-29.1 Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No				
Comment:					
Site Plan Review	Yes	Local	Planning Board	Yes	
Comment: Chapter 21, the Planning Board reviews site plans and has authority to approve. The Planning Board may request additional information from the applicant based on the presence of rock formations, soil conditions, steep slopes, streams, watercourses, flood conditions, high water table and/or other environmentally sensitive factors.					
Environmental Protection					
Comment:					
Flood Damage Prevention	No	Federal, State, Local			
Comment: The Borough does not participate in the National Flood Insurance Program. According to the Stormwater Management Plan There are no streams or lakes in the Borough.					
Wellhead Protection	No				
Comment: The Stormwater Management Plan includes groundwater recharge areas (Figure C-4) and wellhead protection areas (Figure C-5).					
Emergency Management	Yes	Borough			
Comment: Chapter XIV, Fire Prevention and Fire Protection					
Climate Change	No				
Comment:					
Disaster Recovery Ordinance	No				
Comment:					
Disaster Reconstruction Ordinance	No				
Comment:					
Other					
Comment: Chapter XX (Land Use Procedures): Establishes a Planning Board to administer the provisions of the land subdivision ordinance and site plan review ordinance of the Borough in accordance with the provisions of said ordinances and the Municipal Land Use Law, N.J.S.A. 40:55D-67. The Planning Board acts as Zoning Board of Adjustment.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local			
Comment: Planning Board, April 2017					
Capital Improvement Plan	Yes	Local			
Comment:					
Disaster Debris Management Plan					
Comment:					
Floodplain or Watershed Plan	No				
Comment:					

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Management Plan	Yes	Local - Borough Engineer			
Comment: May 2005; 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 development, defined as projects that disturb one or more acre of land. The 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. One goal is to reduce flood damage, including damage to life and property. The plan includes groundwater recharge areas (Figure C-4) and wellhead protection areas (Figure C-5).					
Stormwater Pollution Prevention Plan	Yes	Local - Borough Engineer is the Stormwater Coordinator	Yes	Yes	
Comment: May 2005; The Borough ensures all residential development and redevelopment projects that are subject to Residential Site Improvement Standards for stormwater management, including NJDEP Stormwater Management Rules NJAC 7:8, are in compliance with those standards.					
Urban Water Management Plan	No				
Comment:					
Habitat Conservation Plan	No				
Comment:					
Economic Development Plan	No				
Comment:					
Shoreline Management Plan	Not Applicable				
Comment:					
Community Wildfire Protection Plan	No				
Comment:					
Community Forest Management Plan	No				
Comment:					
Transportation Plan	No				
Comment:					
Agriculture Plan	No				
Comment:					
Climate Action Plan	No				
Comment:					
Tourism Plan	No				
Comment:					
Business Development Plan	No				
Comment:					
Other					
Comment:					

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	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Emergency Manager			
Comment: Emergency Response Plan – Yes, Local OEM Emergency Operations Plan 2014					
Threat & Hazard Identification & Risk Assessment (THIRA)	No				
Comment:					
Post-Disaster Recovery Plan	No				
Comment:					
Continuity of Operations Plan	No				
Comment:					
Public Health Plan	No				
Comment:					
Other					
Comment:					

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Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes
- If no, who does? If yes, which department?	Building Department/Land Use Board
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No
-If yes, please describe briefly.	
-If no, please quantitatively describe the level of buildout in the jurisdiction.	99% Built Out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Victory Gardens.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Combined with Land Use Board
Mitigation Planning Committee	No	
Environmental Board / Commission	No	

Staff/Personnel Resource	Available?	Department/Agency/Position
Open Space Board / Committee	No	
Economic Development Commission / Committee	No	
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Reverse 911
Maintenance program to reduce risk	Yes	Catch basin clearing
Mutual aid agreements	Yes	Surrounding Community, County State,
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer and professional planner contractors
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer and professional planner contractors
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer and professional planner contractors
Staff with training in benefit/cost analysis	No	
Staff with training in green infrastructure	Yes	
Staff with education/knowledge/training in low impact development	No	Contractor
Surveyor	Yes	Contractors as needed
Stormwater engineer		
Personnel skilled or trained in GIS applications	Yes	Contractors as needed
Local or state water quality professional		
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Mayor D. Holeman
Watershed planner	No	Insert appropriate information
Environmental specialist	No	Insert appropriate information
Grant writers	Yes	Leon Hall, Borough Engineer
Resilience Officer	No	
Other		

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Victory Gardens.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	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
State-Sponsored Grant Programs	Yes NJ DOT, Morris County Community Development

Financial Resource	Accessible or Eligible to Use?
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Victory Gardens.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Borough Clerk
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, Consultant
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Victory Gardens Email Newsletter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Victory Gardens Email Newsletter, Municipal Website, Flyers
Do you have any established warning systems for hazard events? • If yes, briefly describe.	No

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Victory Gardens.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	NP		
Building Code Effectiveness Grading Schedule (BCEGS)	NP		
Public Protection (Fire ISO Protection Class)			
Storm Ready Certification	No		
Firewise Community Classification	No		
Sustainable Jersey	No		

NP = Not Participating

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Borough Engineer
Who is your floodplain administrator? (name, department/position)	Leon Hall, Borough Engineer is the Floodplain Administrator
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	Not applicable
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Not applicable
When was the most recent Community Assistance Visit or Community Assistance Contact?	Not applicable
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	Not applicable
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Not applicable
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Not application – do not participate in the NFIP
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	0 listed on FEMA HUDEX - do not participate in the NFIP
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	0 listed on FEMA HUDEX - do not participate in the NFIP
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Victory Gardens that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Victory Gardens has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The Borough does not participate in the NFIP.

2.3 CRITICAL FACILITIES

There are no critical facilities located within the 1-percent or 0.2-percent annual chance flood areas for the Borough of Victory Gardens.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Victory Gardens. The Borough of Victory Gardens has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 8: Borough of Victory Gardens Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	Medium
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Low	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

2.6 CANCELLED ACTIONS

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan?	2024 Project Status Provided by Respondent (not applicable to any new actions)
					Yes/No	Not Started In Progress
1	Victory Gardens	Continuity of Operations at Municipal Building/DPW- Backup Power	There is no backup power at the Municipal Building/DPW which also stores data and serves as the Emergency Operations Center to ensure continuity of operations of the Borough during a disaster or power outage.	Evaluate the size generator needed, purchase and install a backup power generator for Municipal Building/DPW (Data Storage/EOC) located on Salem Street.	Yes	Not Started
2	Victory Gardens	Continuity of Operations at the Fire Station	The Fire Station is a critical asset in the Borough and does not have backup power. During a power outage there is no way to operate the power overhead doors and the vehicle exhaust disconnect system.	Purchase a 30KW generator to power overhead doors and the vehicle exhaust disconnect system at Washington Ave. Fire Station	Yes	Not Started
3	Victory Gardens	Integration of HMP in Master Plan	The Master Plan does not integrate the Hazard Mitigation Plan (e.g., hazard areas).	Incorporate natural hazard risk/mitigation into the next master plan update.	Yes	Not Started

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	All hazards	Goal 1		OEM		FEMA HMA	Continuity for a critical asset during disasters.
2	Severe Winter Weather	All hazards	Goal 1		OEM		FEMA HMA	Continuity for a critical asset during disasters.
3	Severe Weather	All hazards	Goal 1		Mayor's Office		Borough Budget	Incorporating information from the HMP will allow the community to utilize the capability and hazard information in the HMP to inform decisions, as well as potentially reinforce community mitigation strategies.

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2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$250k-\$500k	3-5 years	2	2	2	3	3	12	Medium
2	\$250k-\$500k	3-5 years	2	2	2	3	2	11	Medium
3	Under \$50k	3-5 years	1	1	1	3	2	8	Low

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Figure 1: Borough of Victory Gardens Hazard Area Extent and Location Map 1

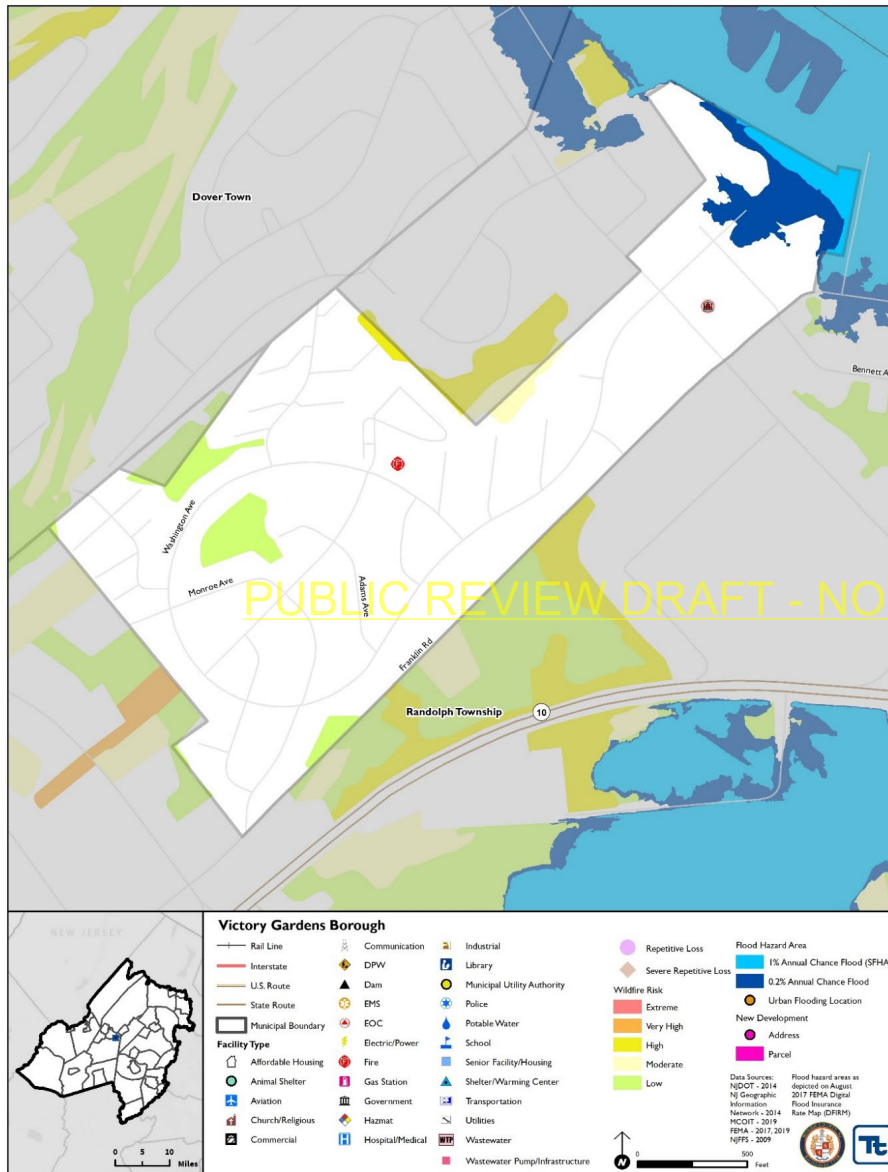
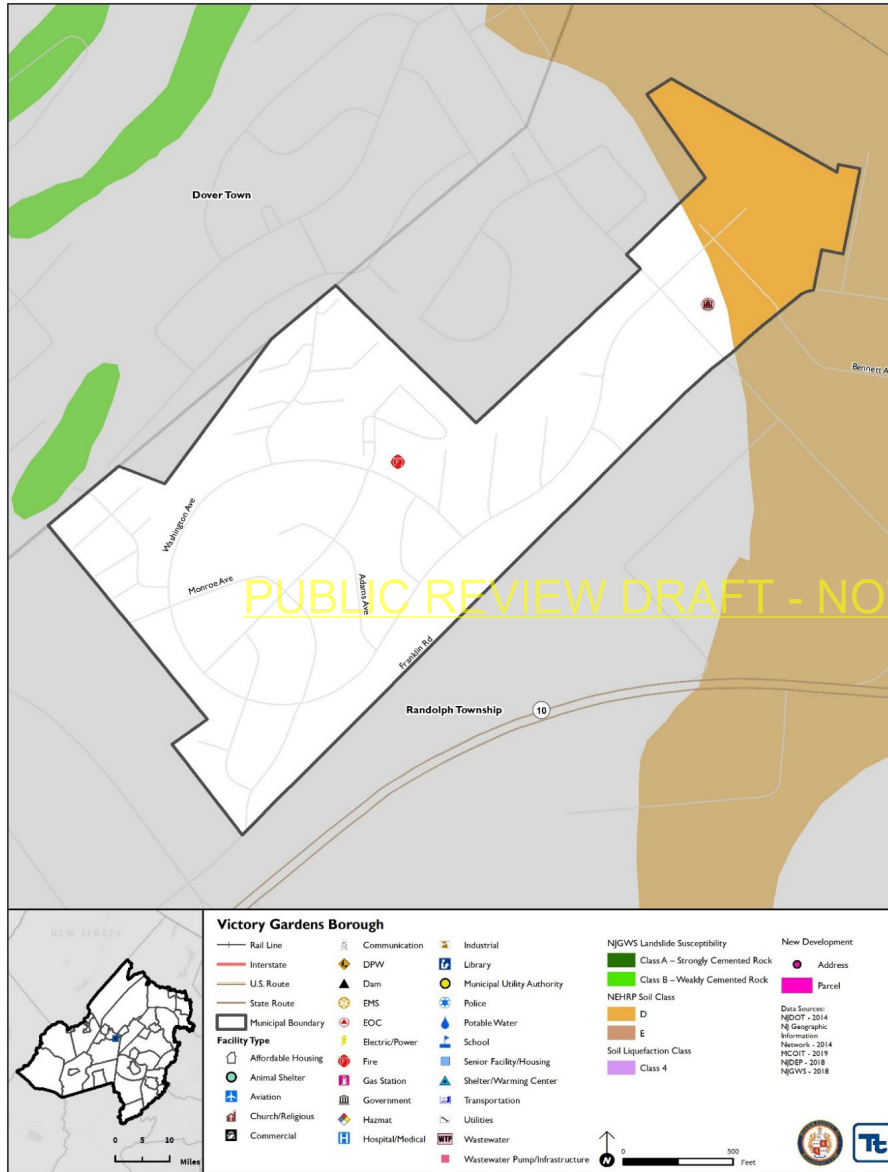


Figure 2: Borough of Victory Gardens Hazard Area Extent and Location Map 2



ANNEX 15: BOROUGHS OF WHARTON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Wharton and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Enforced by the Building Department, State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Yes, if have planning board	No	No
Comment: State permissive on local level. [note local ordinance # and date of adoption]. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by the Housing Zoning Officer, Chapter 165.					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Enforced by the Housing Zoning Officer, Chapter 165-45.					
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Housing and Zoning, Chapter 267.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	No	State	Yes	-	-
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	Local and State	Yes, if have planning board	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	-	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	-	-
Comment: 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 freeholders 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. Enforced by Planning Board, Chapter 165.					
Environmental Protection	Yes	Local	Yes	No	No
Comment: Chapter 12 Article 1 establishes an Environmental Commission of the Borough of Wharton. There is no evidence that the commission is currently active.					
Flood Damage Prevention	Yes	Local	No	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Enforced by Housing and Zoning, Chapter 142.					
Wellhead Protection	No	-	No	-	-
Comment: 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)).					
Emergency Management	No	-	Yes	-	-
Comment: 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	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other: Tree Preservation	Yes	Local	Yes	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: §165-98, Tree Preservation. §165-57 Easements; natural features; utilities. B. Natural features such as trees, forested areas, brooks, hilltops and views shall be preserved whenever possible in designing any subdivision containing such features. Trees six (6) inches or greater in diameter should be preserved to enhance soil stability. §165-62 Shade trees, planting strips and landscaping. A. Shade trees shall be provided in all major residential subdivisions and in minor subdivisions where deemed appropriate by the Planning Board. Trees shall be planted within the subdivision along each side of the street at proper intervals and in types, sizes and locations conducive to healthy growth, with graded and seeded or sodded planting strips within street rights-of-way, and according to any standards adopted by the Governing Body or Borough Shade Tree Commission, so as not to interfere with street paving, sidewalks or utilities.					
Other: Steep Slopes	Yes	Local	Yes	No	No
Comment: §165-99, Steep Slopes. §165-57 Trees six (6) inches or greater in diameter should be preserved to enhance soil stability. Additionally, landscaping should incorporate the use of native species.					
Planning Documents					
Master Plan	Yes	Local	Yes	No	No
Comment: Per NJSA 40:55D-28. Enforced by the Planning Board, March 2015.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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. Enforced by the Borough Council, Annual Capital Plans Recent Ordinance # - 7-2015.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	No	No
Comment: Highlands Regional Master Plan has been integrated with Stormwater Management Plan.					
Stormwater Management Plan	Yes	Local	Yes	No	No
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). Borough of Wharton Stormwater Management Plan December 2018. Enforced by the OEM, Chapter 267.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	No
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). Stormwater Pollution Prevention Plan Borough of Wharton 7/29/2019 http://www.whartonnj.com/images/Wharton_SPMP_7-29-19.pdf					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	-	-
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4).					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Open Space and Recreation Element	Yes	Local	Allowed	-	-
Comment: 2001 Open Space Plan					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. OEM retains copy of the EOP.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local	No	No	No
Comment: Enforced by OEM, EOP 2014.					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Zoning
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No 90% Buildout

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Wharton.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	Environmental Commission established by ordinance, Green Team for Sustainable Jersey established 2014.
Open Space Board / Committee	Yes	Mayor and Council
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Everbridge, AlertMorris
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Mayor, OEM
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Contractor
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer, Contractor
Planners or engineers with an understanding of natural hazards	Yes	Contractor
Staff with training in benefit/cost analysis	Yes	Grant Coordinator
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	Yes	Contractor
Stormwater engineer	Yes	Contractor
Personnel skilled or trained in GIS applications	Yes	Contractor
Local or state water quality professional	Yes	Highlands Commission
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM Coordinator
Watershed planner	Yes	Highlands Commission
Environmental specialist	No	-
Grant writers	Yes	Grant Coordinator
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Wharton.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes, Water and Sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Wharton.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes. Borough Administration, OEM,
Do you have personnel skilled or trained in website development?	Yes. Contractor
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes. OEM website provides link to County OEM
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes. Facebook, Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Planning Board, Zoning Board Environmental Commission is established by ordinance.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes. Municipal Alliance
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes. Everbridge, AlertMorris

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Wharton.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	5	2014
Storm Ready Certification	No	-	-

Program	Participating?	Classification	Date Classified
Firewise Community Classification	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Housing and Zoning Officer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	July 9, 2001
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	11/05/1992
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes Morris County maps are in appeal
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	6 \$1,994,100 \$20,085
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	9 4 \$77,648
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Wharton that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Wharton has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Wharton.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
No critical facilities are located in the FEMA 1% and 0.2% Flood Hazard Area.			

2.4 ADDITIONAL IDENTIFIED VULNERABILITIES

2.5 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Wharton. The Borough of Wharton received the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. The Borough of Wharton agreed with the risk assessment results presented below.

Table 9: Borough of Wharton Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Low

Hazard	Ranking	Hazard	Ranking
Geological Hazards	Low		

2.6 COMPLETED ACTIONS

Borough of Wharton reported no completed actions.

2.7 CANCELLED ACTIONS

Borough of Wharton reported no cancelled actions.

PUBLIC REVIEW DRAFT - NOT FINAL

2.8 HAZARD MITIGATION STRATEGY

2.8.1 BACKGROUND INFORMATION

Action	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Borough of Wharton Fire Department	The Borough of Wharton Fire Department is a critical lifeline that does not have backup power	Design, purchase, and install backup generator for Fire Department	Yes	Not started
2	Washington Forge Pond Dam	Washington Forge Pond Dam on the Rockway Rivery lacks overflow weir. In addition, the dam was inspected on 11/28/18 and found to be class II of Significant Hazard. This impacts the main road in Dover.	Determine and remedy deficiencies of Washington Forge Pond Dam, including an overflow weir. Update EOP to include dam, and update Washington Forge Pond Management plan to include the dam	Yes	Not started
3	North Main Street Flooding	North Main Street and Chegwiddden Way is subject to flooding. This impacts the main road to the hospital in Dover.	Determine source of flooding and appropriate mitigation actions.	Yes	Not started

2.8.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather		Goal 4		<u>Fire, OEM</u>		HMGP, PDM	

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
2	Flood		Goal 1		<u>Engineering, OEM</u>		HMGP, PDM, Municipal budget, Open Space Levy Tax, 0.70%	
3	Flood		Goal 1		<u>Engineering, Housing and Zoning Officer</u>		FEMA, PDM	

2.8.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved	Potential for Reduced Property Damages	Potential for Reduced Response Actions	Benefits Exceed Costs	Community Action Priority Ranking	Total	Action Priority
			1 - Little Potential 2 - Some Potential 3 - Major Potential	1 - Little Potential 2 - Some Potential 3 - Major Potential	1 - Little Potential 2 - Some Potential 3 - Major Potential	1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	1 - Low Priority 2 - Medium Priority 3 - High Priority		
1	\$50k-250k	3-5 years	2	2	3	2	1	10	Medium
2	\$50k-250k	3-5 years	2	2	2	1	2	9	Medium
3	\$250k-\$500k	3-5 years	2	2	2	1	2	9	Medium

Figure 1: Borough of Wharton Hazard Area Extent and Location Map 1

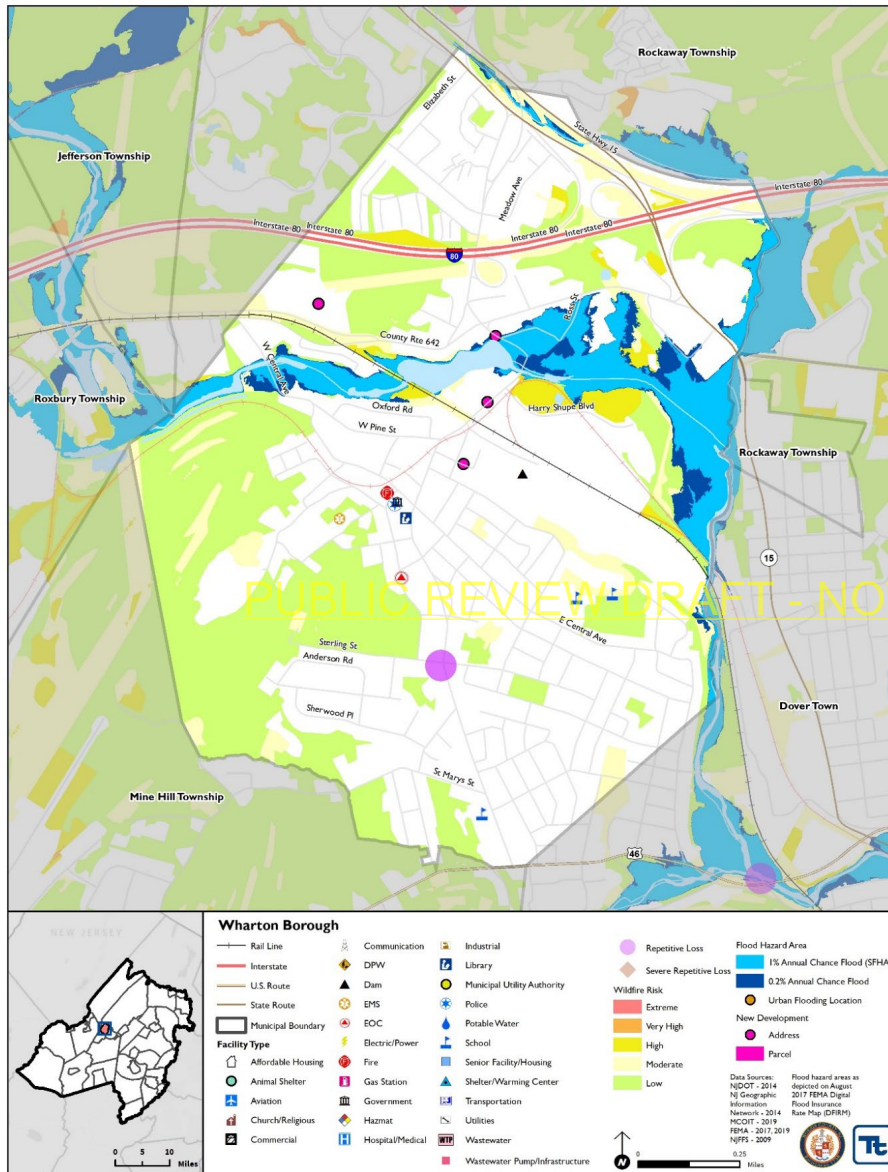
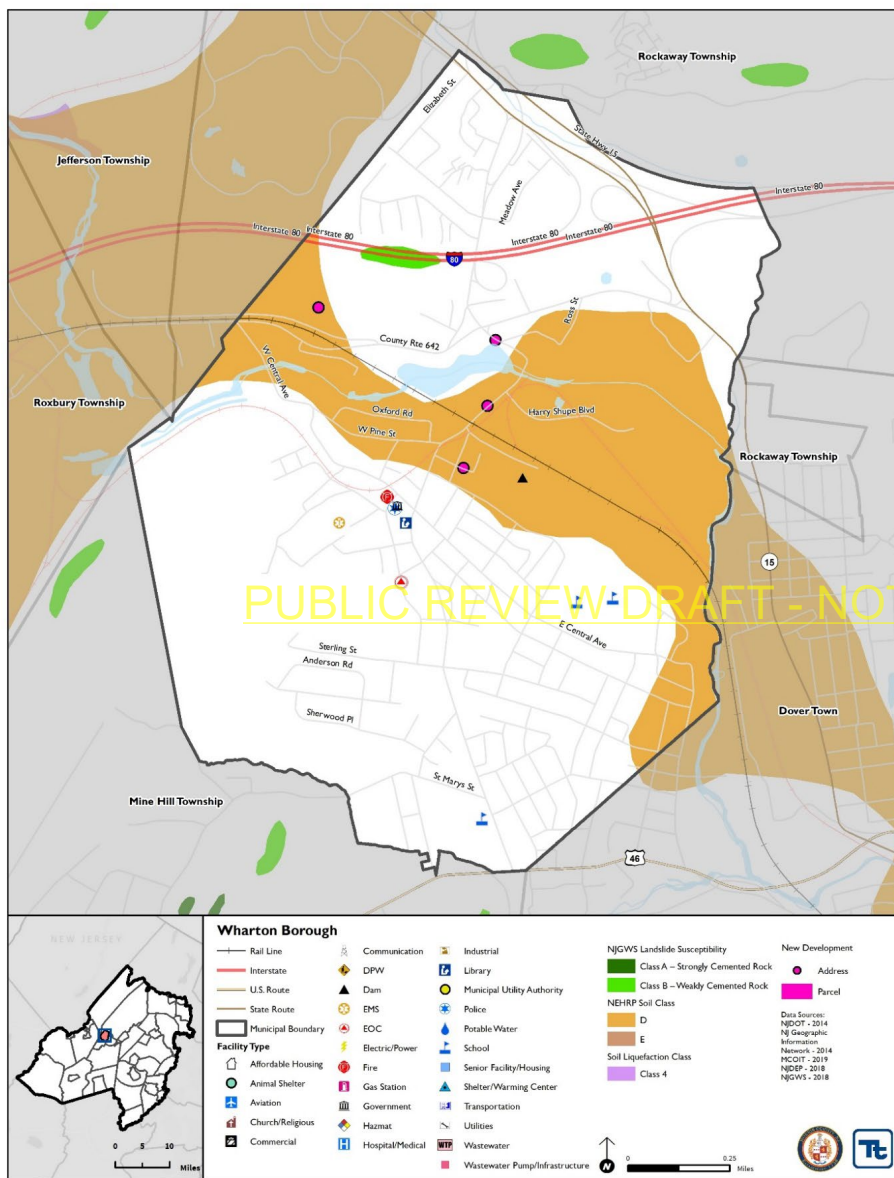


Figure 2: Borough of Wharton Hazard Area Extent and Location Map 2



ANNEX 16: MORRIS COUNTY COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to Morris County and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	No	State, Local	Yes	No	-
Comment: NJAC 5:23-3, 14; enforced at the local level. The local municipality enforces the building code.					
Zoning Code	No	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Enforced at the local level.					
Subdivisions	No	Local	Yes	No	-
Comment: Site Plan and Subdivision Regulations pursuant to NJSA 40:27-6 et. seq. This is enforced at the local level. The County Planning Board must review any subdivisions of land within the County and approve subdivisions affecting county roads or drainage facilities.					
Stormwater Management	No	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); enforced at the local level. While the County does not have a stormwater					
Post-Disaster Recovery	Yes	County	-	Yes	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-		-	-
Comment:					
Shoreline Development	No	-	Yes; however, for coastal communities	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Site Plan Review	Yes	County and Local	Yes	Yes	-
Comment: The Morris 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.					
Environmental Protection	No	-	-	-	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	No	Local	Yes	-	-
Comment: Floodplain management enforced at the local level					
Wellhead Protection	Yes	County but enforced at the local level	No	No	No
Comment: The County has these mapped out through County GIS; but is up to the municipalities if they have an overlay zone and the State enforces.					
Emergency Management	No	-	-	-	-
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	Yes	County	No	-	-
Comment: <ul style="list-style-type: none">Land Development Standards – May 12, 2004 – presents the procedures, standards and requirements that the Planning Board will follow in its review and approval of land development applications. They supersede and replace the Standards adopted May 26, 1971, as amended and adopted through February 24, 1988.					
Planning Documents					
Master Plan	Yes	County	Yes	Yes	-
Comment: Elements of the County's master plan include: <ul style="list-style-type: none">Bicycle and PedestrianCirculationFarmland PreservationFuture Land UseHistoric PreservationOpen SpaceWastewater ManagementWater Supply					
Capital Improvement Plan	Yes	County	Yes	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: This is included in the county's budget each year and performed by the County Administration and Freeholders					
Disaster Debris Management Plan	Yes	County	No	Yes	-
Comment: Completed in April 2012 and incorporated the County's HMP vulnerability assessment to obtain estimated debris produced during each storm.					
Floodplain or Watershed Plan	Yes	County	No	-	-
Comment: No specific plan but have the Natural Resource Management Guide – Planning Department					
Stormwater Management Plan	No	-	Yes – local level	-	-
Comment: At the time of the 2020 update, the County does not have a countywide stormwater management. The County indicated they would like to develop one and have it include the location of all county, local and state stormwater management systems and their outflows. Refer to 2020-MORRIS COUNTY-001 for details on this mitigation action. At the municipal level, the County Planning Board reviews and approves stormwater management plans and ordinances.					
Stormwater Pollution Prevention Plan	Yes	County - Engineering	-	-	-
Comment: Individual plans for county-owned facilities					
Urban Water Management Plan	No	-	-	-	-
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					
Habitat Conservation Plan	Yes	County	No	-	-
Comment: Highlands Commission; Natural Resource Management Guide					
Economic Development Plan	No	County	No	-	-
Comment: The County currently does not have a plan but one is being developed and should be completed by the end of 2021					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	-	-
Comment: Done at the municipal level but the County Parks is developing one for ash trees (EABs)					
Transportation Plan	Yes	County	No	-	-
Comment: This is an element in the County's Master Plan					
Agriculture Plan	Yes	County	No	-	-
Comment: Comprehensive Farmland Preservation Plan – being updated in 2020					
Climate Action Plan	No	-	-	-	-
Comment:					
Tourism Plan	No	County	No	-	-
Comment: Part of the Economic Development Plan that is being developed					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Business Development Plan	No	County	No	-	-
Comment: Part of the Economic Development Plan that is being developed					
Other	Yes	County	No	-	-
Comment:					
<ul style="list-style-type: none"> The County developed plans for certain watersheds in the county. This includes Jackson Brook, Troy Brook, and McCule Brook 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	County	Yes	-	-
Comment: County EOP updated in April 2018; OEM is responsible for maintaining and updating					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	County	No	-	-
Comment: September 2014; OEM is responsible for maintaining and updating					
Post-Disaster Recovery Plan	Yes	County	No	-	-
Comment: Part of the County's EOP (April 2018)					
Continuity of Operations Plan	Yes	County	No	-	-
Comment: October 2012; OEM is responsible for maintaining and updating					
Public Health Plan	Yes	County	No	-	-
Comment: Public Health - public health nursing portion and REHS portion and health officers portion (Practice Standards); ESF in the County EOP; Pandemic Flu Plan; Regional POD Plans. HAZMAT plan is part of the state plan					
Other	Yes	County	No	-	-
Comment:					
<ul style="list-style-type: none"> Mass Evacuation School Emergency Response Reunification Plan Code Blue Plan Passaic River Climate Resilience Plan Sheltering Plan (Medical Needs and County) Long Term Care Mass Causality Medical Needs Sheltering 					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	No – done at the municipal level but County Engineering requires right-of-way occupancy permits

Criterion	Response
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes – part of the wastewater management plan (vacant lands inventory – and identified which were developable). Majority of the development going on in the County is redevelopment .

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to Morris County.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Morris County Planning Board - assists municipalities by providing a regional framework for municipal planning so that each municipal master plan can be developed as a logical part of its surrounding area; advises Board of Freeholders on planning matters.
Mitigation Planning Committee	Yes	Morris County Flood Mitigation Committee
Environmental Board / Commission	Yes	Morris County Park Commission – oversees the County park system (over 13,000 acres); Morris County Flood Mitigation Committee; Soil Conservation District (non-county)
Open Space Board / Committee	Yes	Morris County Open Space Committee - reviews, prioritizes and makes recommendations to the Morris County Board of Chosen Freeholders on the funding of projects which fall into the municipal/qualified charitable conservancy category; Morris County Park Commission
Economic Development Commission / Committee	Yes	Morris County Economic Development Corporation is a division of the Morris County Chamber of Commerce, serves as an ally for businesses seeking a new location as well as for those currently operating in the county. It is a partnership of government, businesses and allies dedicated to growing the economy of Morris County, New Jersey through aggressive and effective programs and services that result in business attraction, creation, retention, expansion and transition.
Warning Systems / Services (reverse 911, outdoor warning signals)		AlertMorris allows residents to get emergency notifications through phone, email, text, or social media. Residents can sign-up online. Through this system, Morris County can relay information related to major storms or other emergencies taking place in the County. The County also uses the Rave Notification System where the County sends notification to municipality, and they will issue; but if its countywide then the county will send out. The County also uses social media (Facebook and Twitter) to provide information to residents.
Maintenance program to reduce risk	Yes	Through Buildings and Grounds, Engineering and Transportation, and Roads/Bridges/Shade Tree

Staff/Personnel Resource	Available?	Department/Agency/Position
Mutual aid agreements	Yes	There are no inter-county mutual aid agreements; there are intra-county agreements among the County and municipalities (Health Departments, Road Departments, etc.). The County is also part of Jersey City/Newark UASI which enhances regional preparedness in the counties of Bergen, Essex, Hudson, Middlesex, Morris, Passaic, and Union.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Morris County Planning & Preservation
Engineers or professionals trained in building or infrastructure construction practices	Yes	Morris County Public Works, Division of Engineering & Transportation, Building Construction and Reconstruction, Road and Bridge Division
Planners or engineers with an understanding of natural hazards	Yes	Morris County Planning & Preservation
Staff with training in benefit/cost analysis	Yes	Morris County Planning & Preservation
Staff with training in green infrastructure	Yes	Parks – Natural Resources Team, Horticultural
Staff with education/knowledge/training in low impact development	Yes	Morris County Planning & Preservation
Surveyor	No	Private consultant as needed
Stormwater engineer	Yes	Public Works & County Engineering Department – The Engineer’s scope is very limited to storm water facilities and impacts along County roads and properties
Personnel skilled or trained in GIS applications	Yes	Department of Information Technology – Morris County GIS
Local or state water quality professional	Yes	Public Works & County Engineering Department – The storm water engineer also reviews water quality as they are both a NJDEP requirement of any storm water mitigation.
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Director of Law and Public Safety / County OEM Coordinator
Watershed planner	No	-
Environmental specialist	Yes	Park Commission, Mosquito Control, OEM, Health Mgt, HazMat
Grant writers	No	-
Resilience Officer	Yes	Morris County Planning & Preservation
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to Morris County.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No

Financial Resource	Accessible or Eligible to Use?
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Yes

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to Morris County.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Office of Communication and Digital Media
Do you have personnel skilled or trained in website development?	Yes – Communication and Digital Media performs all website development and maintenance for all county departments
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – <ul style="list-style-type: none"> OEM - Provides links to the County's HMP, lists NWS warnings Park Commission - Use the website to list when parks are closed and will post signs at the entrances of the parks; some parks are closed during hunting season
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Facebook and Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes – CRS Users Group
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes – weekly county newsletter emails
Do you have any established warning systems for hazard events? • If yes, briefly describe.	AlertMorris allows residents to get emergency notifications through phone, email, text, or social media. Residents can sign-up online. Through this system, Morris County can relay information related to major storms or other emergencies taking place in the County. The County also uses the Rave Notification System where the County sends notification to municipality, and they will issue; but if its countywide then the county will send out. The County also uses social media (Facebook and Twitter) to provide information to residents.

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to Morris County.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	N/A	N/A	N/A

Program	Participating?	Classification	Date Classified
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	N/A	N/A
Public Protection (Fire ISO Protection Class)	N/A	N/A	N/A
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No	-	-

N/A = Not applicable

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps have been generated for the County that illustrate the probable areas impacted. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes (Section 4.3).

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the County. These properties are not owned by the County; therefore, the County has no jurisdiction to mitigate however supports local mitigation projects to address repetitive flooding. Refer to Section 4.3.6 (Flood) for more detailed information on NFIP statistics by municipality, and the municipal annexes in Sections 9.2 through 9.40 for details on the number of mitigated properties in each municipality.

- Number of repetitive loss (RL) properties: 901
- Number of severe repetitive loss (SRL) properties: 196

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 7: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Long Valley Garage	County-owned		X

2.4 HAZARD RANKING

The hazard ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.4 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Hudson County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential hazards across Hudson County. The Steering Committee and Planning Committee reviewed the Hudson County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the County. During the review of the hazard ranking, the calculated rankings were adjusted to incorporate the perceived adaptive capacity with respect to the relevant hazard.

During the review of the hazard ranking, the Steering Committee agreed that flood should be a high-ranked hazard. It was noted as a medium-ranked hazard in 2015; however, flood impacts continue to be high and with the addition of climate change the Steering Committee agreed high is the best ranking to reflect risk across the County.

Table 8: Morris County Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	High	Wildfire	Medium
Geological Hazards	Medium		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Morris County reported no completed actions.

2.6 CANCELLED ACTIONS

Morris County reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Morris County	Countywide Stormwater Management Plan	Morris County does not have a countywide stormwater management plan. The County also does not have a system in place that identifies the location of stormwater systems and their outflows in the county. The systems can lead to flooding	Develop a countywide stormwater management plan. The plan will include a study to identify all county, local and state stormwater management systems and their outflows because it impacts flooding in the county and downstream. This will also help with local and county emergency services to identify flood prone areas and aid in identifying where water goes in the event of a HAZMAT incident.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Morris County	Backup Power at Various Sites	Currently no backup power supply at major water supply sites in the system in the event of a natural hazard like flood or storm.	Backup power generators required at the following sites in Hanover Township: Wing Well, Todd Well, Black Brook Wells. Size of the generators selected by electrical engineer. The generator for Wing and Todd will be permanent and we plan to purchase two different size mobile generators that will be able to provide power to multiple facilities if needed.	Yes	In Progress
3	Morris County	Clyde Potts Dam Spillway Improvement	The Clyde Potts Dam in Mendham Township has visible cracks observed in the dam spillway. Structural damage may result in flooding. Residential areas downstream of dam may get flooded. This is a high hazard dam with structural damage to the spillway which is causing capacity concerns.	NJDEP Dam Safety Division has been currently engaged in a regional study for design flood analysis. Based on the results of the study, site specific study will be performed for the Clyde Potts Dam. The site-specific study may require the size of the spillway to be evaluated and upgraded. The spillway design work is anticipated to be performed within 4 to 5 years.	Yes	Not Started
4	Morris County	Black Brook Wells and Treatment Plant Upgrade	Two groundwater wells and a treatment plant building are below flood elevation in Hanover Township. Loss of water service may happen in the event of a major flood.	Upgrade of the wells and treatment plant buildings to raise them above the flood elevation.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
5	Morris County	Structural Improvements at Highland Woods and Picatinny Tanks	After the tank inspection, 2 out of 15 tanks in the system located in Morris Township had broken rafters. In the event of a major snow storm, the roofs may collapse.	Roof rafters at both the tanks need to be repaired or upgraded.	Yes	In Progress
6	Morris County	Support communities in identifying and mitigating administrative impediments toward clearing debris in waterways across the county.	Administrative requirements can stifle the implementation of projects, slowing and impeding progress.	The county will support jurisdictions in exploring ways to streamline projects so they can be implemented in a smooth and timely manner.	No	N/A
7	Morris County	Advocate with county, local and state partners to navigate rules and regulations regarding implementation of projects.	Administrative requirements can stifle the implementation of projects, slowing and impeding progress.	The county will throw its weight behind local jurisdictions, exploring ways to work with all parties to streamline or remove administrative impediments and ensure that projects are implemented in a smooth and timely manner.	No	N/A

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood	Severe Weather	Goal 1	Goal 4	Planning	Public Safety, Public Works, Health Management	FEMA PDM, County Budget	Identifies stormwater systems throughout County, identifies ways to reduce flooding, increase water quality
2	Severe Weather	Severe Winter Weather	Goal 1	Goal 4	Southeast Morris County Municipal Utilities Authority		FEMA HMGP	Continuity of operations
3	Flood	Severe Weather; Severe Winter Weather	Goal 1	Goal 4	Southeast Morris County Municipal Utilities Authority		NJDEP Dam Restoration & Inland Water Projects Loan Program, FEMA High Hazard Potential Dam Grant Program	Spillway repair will reduce risk of dam failure and potential loss of life/ property for areas downstream
4	Flood		Goal 1	Goal 4	Southeast Morris County Municipal Utilities Authority		EPA Clean Water State Revolving Fund, CDBG, NJDEP Environmental Infrastructure Financing Program	Raising the structure levels will eliminate risk of water service loss during a major flood.
5	Severe Winter Weather		Goal 1	Goal 4	Southeast Morris County Municipal Utilities Authority		FEMA HMGP	Reduce risk of water loss;

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
								protect infrastructure
6	Flood		Goal 4	Goal 1; Goal 2	Planning Office of Emergency Management	Morris County Administrators Office Public Works	County/Municipal Funding	Streamlined process to accomplish mitigation actions
7	Flood	All Hazards	Goal 4	Goal 1; Goal 2	-			

2.7.3 STRATEGY RAKING AND PRIORITIZATION

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-250k	1-3 years	1	3	2	3	2	11	Medium
2	Over \$1M	3-5 years	1	1	3	3	2	10	Medium
3	Over \$1M	3-5 years	3	3	3	3	3	15	High
4	Over \$1M	3-5 years	1	2	2	2	2	9	Medium
5	Over \$1M	1-3 years	1	3	3	3	2	12	Medium
6	Under \$50k	1-3 years	1	2	2	3	3	11	Medium
7	Under \$50k	1-3 years	1	2	2	3	3	11	Medium

ANNEX 17: TOWN OF BOONTON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Town of Boonton and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	Yes	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Administered by the Construction Department.					
Zoning Code	Yes	Local	Yes	Yes	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Yes, Chapter 300 Zoning and Land Use with new ordinances adopted in 2016, 2017, and 2019 as amendments. Administered by the Planning Board.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 300, Part 3 Subdivision and Site Plan Review. Administered by the Planning Board.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 249 of the municipal code. Administered by the Planning Board. Chapter 93 Municipal Separate Storm Sewer System Chapter 229 Sewers and Water. Administered by the Township Committee.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level; Identified in Master Plan.					
Site Plan Review	Yes	Local	No	No	-
Comment: Chapter 300 Part 3 of the municipal code. Administered by the Planning Board.					
Environmental Protection	Yes	Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Steep Slope Ordinance. Chapter 125 of the municipal code.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Flood Damage Prevention	Yes	Local	Yes	No	-
Comment: Chapter 140 of the municipal code. Adopted in 1990 with amendments. Administered by the Construction Department with contract engineering support. The ordinance lacks freeboard.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	No	No	-
Comment: Chapter 27 Article III Police Department, Article IV Fire Department.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
PUBLIC REVIEW DRAFT - NOT FINAL					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment: adopted 12/14/1995; updated 1/8/2009; updated and adopted by the Planning Board on January 10, 2019. During the next update of the master plan, the Township will review the current HMP to see where it can be integrated as appropriate. Master Plan. 1998; 2008 Re-examination. New Master Plan adopted July 31, 2018. Administered by the Planning Board. The plan has elements for land use, circulations, economics, open space/recreation, historic preservation, and community facilities. The open space element includes a goal to "Preserve open space to protect critical environmental resources, such as wetlands, floodplains, ridge lines, steep slopes, and stream and river corridors that promote the conservation of ecological habitat." The community facilities element includes a goal to "Ensure high quality and responsive public works, safety, security and emergency response services." The plan includes a section on storm resiliency, smart growth, and environmental sustainability. The section discusses past impacts from storms and flood events and discusses the 2015 Hazard Mitigation Plan. The open space element notes the importance of natural floodplains and the role open space has on reducing flooding losses. The element also identifies potential properties for acquisition and notes which properties are located in the floodplain. Throughout the plan, potential mitigation projects (mainly stormwater) are noted (including an action plans for the community facilities element) and completed mitigation projects are noted.					
Capital Improvement Plan	Yes	Local	Allowed	Yes	-
Comment: 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. The Town has a three year plan administered by the Planning Board.					
Disaster Debris Management Plan	Yes	Local	No		
Comment:					
Floodplain or Watershed Plan	Yes	County	No		-
Comment: Morris County Flood Acquisition Plan, administered locally by OEM working with all departments.					
Stormwater Management Plan	Yes	Local and State	Yes	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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). Town's MS4 Plan is from 2005 and is administered by contract engineering.					
Stormwater Pollution Prevention Plan	Yes	Local DPW	Yes	Yes/No	Yes/No
Comment: reviewed by contracted engineers; Updated June 2023 per new MS4 requirements.					
Urban Water Management Plan	No		No		
Comment:					
Habitat Conservation Plan	No		No		
Comment:					
Economic Development Plan	No	Local	No		
Comment: Town is currently in process of formalizing Economic Development plan with a local committee.					
Shoreline Management Plan	No		No		
Comment:					
Community Wildfire Protection Plan	No		No		
Comment:					
Community Forest Management Plan	No		No		
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No		No		
Comment:					
Climate Action Plan	No		No		
Comment:					
Tourism Plan	No		No		
Comment:					
Business Development Plan	No		No		
Comment:					
Other					
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. 2012 Emergency Operations Plan, administered by the Town of Boonton OEM.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Threat & Hazard Identification & Risk Assessment (THIRA)	No		No		
Comment:					
Post-Disaster Recovery Plan	No	-	No	No	No
Comment:					
Continuity of Operations Plan	No				
Comment:					
Public Health Plan	No		No		
Comment:					
Other					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Construction Department along with Local hired engineer
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Jurisdiction nearing complete buildout.

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Town of Boonton.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning/Zoning Board
Mitigation Planning Committee	Yes (ad hoc)	Mayor and various department representatives provide input to HMP updates.
Environmental Board / Commission	Yes	Planning Board
Open Space Board / Committee	Yes	Planning Board
Economic Development Commission / Committee	No	
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Local Police
Maintenance program to reduce risk	Yes	Capital Plan; DPW; OEM

Staff/Personnel Resource	Available?	Department/Agency/Position
Mutual aid agreements	Yes	OEM; Administration
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Contracted (Suburban Consulting Engineering, Mott MacDonald Engineering)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Department; contract engineering
Planners or engineers with an understanding of natural hazards	Yes	Contracted (Suburban Consulting Engineering, Mott MacDonald Engineering)
Staff with training in benefit/cost analysis	Yes	Consultant
Staff with training in green infrastructure	No	Mott MacDonald Engineering
Staff with education/knowledge/training in low impact development	Yes	Mott MacDonald Engineering
Surveyor	Yes	Mott MacDonald Engineering (Surveyors on staff)
Stormwater engineer	Yes	Mott MacDonald Engineering
Personnel skilled or trained in GIS applications	Yes	Mott MacDonald Engineering; Town OEM
Local or state water quality professional	Yes	Town Water Department License holder; contract engineering
Scientist familiar with natural hazards in local area	Yes	Mott MacDonald Engineering
Emergency manager	Yes	Peter Herbert, Town OEM
Watershed planner	No	
Environmental specialist	Yes	Mott MacDonald Engineering
Grant writers	Yes	Consultant
Resilience Officer	No	
Other	YES	Mott MacDonald Engineering - Certified Floodplain Manager

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Town of Boonton.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes, Three Year Plan
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	FEMA grant programs, Public Assistance
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Town of Boonton.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, POI as needed. No office
Do you have personnel skilled or trained in website development?	Various employees in town have skills, the town has a webmaster and social media specialist
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes. Facebook, Twitter and Nixle accounts are used to communicate hazard communications.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes. Local Emergency Planning Committee reviews hazard mitigation issues.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes. Facebook, Twitter and Nixle accounts are used to communicate hazard communications.
Do you have any established warning systems for hazard events? If yes, briefly describe.	Yes, reverse 911, social media, and "Nixle alerts".

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Town of Boonton.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	TBD	TBD	TBD
Public Protection (Fire ISO Protection Class)	Yes	Class 4	June 2020
Storm Ready Certification	No	N/A	N/A
Firewise Community Classification	No	N/A	N/A
Sustainable Jersey	No	N/A	N/A

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Planning/Zoning Boards/Contracted Engineer
Who is your floodplain administrator? (name, department/position)	Suburban Consulting Engineers
Are any certified floodplain managers on staff in your jurisdiction?	No.

Criterion	Response
What is the date that your flood damage prevention ordinance was last amended?	Adopted 1990, amended 1997
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Yes.
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Policies in force: 5 Insurance in force: \$1,092,000 Premium in force: \$1,588
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 13 Claims still open or closed without payment: 4 Total payments for losses: \$25,876
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Town of Boonton that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Mendham has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Town of Boonton.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Old Morris Canal Dam	Dam	X	X
Boonton Dam	Dam	X	X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Town of Boonton has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Town of Boonton Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Town of Boonton reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were cancelled:

- Action:** Create a specific debris removal plan that includes NJDEP pre-permitting of sites chosen proactive (not reactive) to keep river flow open. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Boonton, Town of	Backup Power for Critical and Essential Facilities	Critical facilities require backup power. Some facilities have undersized or only portable generators for use.	Install or upgrade backup power equipment at the following critical and essential facilities in the Town as necessary funding is appropriated. Facilities are deemed critical if they provide a critical need for the town, including town government, areas of education, population care and key transportation nodes. These facilities include the Town of Boonton Town Hall, Sewer Lift Stations, Department of Public Works facility, Boonton Housing Authority, Federal Housing Senior Building, traffic lights and the Town of Boonton High School. Progress has been made on several of these facilities Town Hall - Upgrades in planning stages; Sewer Lift Station - final planned station to be installed in 2024; DPW Facility - Current generator at Town wall to be relocated to DPW after Town Hall upgrade is complete; Boonton Housing - no progress; Federal Housing - no progress; Senior Building - completed; High School - no progress; traffic lights - Complete	Yes	In Progress
2	Boonton, Town of	Wootton Street Stormwater Management Upgrades	Wootton Street is prone to stormwater flooding.	Upgrade storm drains on Wootton Street to mitigate flooding. The Final Wootton St projects have been awarded and will be in construction in 2024.	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
3	Boonton, Town of	Boonton Wellfield Water Filtration Plant	The Boonton Wellfield Water Filtration Plant at 130 Old Denville Road in Boonton Township is located in the 100-year floodplain. The Plant has flooded previously during Irene and Floyd.	The Town will work to raise appropriate buildings and install floodwalls. The plant upgrade and generator project is in the final design stages, currently under review by the NJDEP. The project is seeking funding through the NJ Infrastructure Trust.	Yes	In Progress
4	Boonton, Town of	Vreeland Avenue Stormwater Management Upgrades	This area floods during heavy rain events, resulting in road closures and traffic diversion. Private property flooding is limited to open land areas. A 1999 plan to perform stormwater management upgrades here could not be funded.	Renovate and enlarge culvert at Vreeland Avenue and Greenbank Road. The culvert has been enlarged and was also reinforced, this alleviated some minor flooding but has not mitigated roadway flooding during major rain events	Yes	In progress
5	Boonton, Town of	Rockaway River Streambank Stabilization at Rockaway Street and Harrison Street	Severe streambank erosion/slope failure issues in these two locations.	Stabilization of failed slope and restoration of natural streambank. NJDOT Funding for \$600,000 has been secured. Applying for additional funding. Permits need to be removed.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
6	Boonton, Town of	GIS Mapping of Catch Basin & General Stormwater Facilities	The location of all catch basins and stormwater facilities, both private and public, need to be identified, mapped, and located for planning, maintenance, and proposed upgrades to the system. This is done by creating a GIS Mapping system.	Infrastructure mapping is critical to emergency response, review of issues, and creating recommendations for improvements. This must be complete by the end of 2025 per NJDEP MS4 Permit. A \$25,000 grant from NJDEP for mapping has been obtained.	No	New
7	Boonton, Town of	Develop All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Need for a All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Create and continuously update All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	No	New
8	Boonton, Town of	Review & update the Rockaway Borough Flood Hazard Area Ordinance	The Boonton Flood Hazard Area Ordinance should be consistent with FEMA requirements. Updating is required periodically and will be required when FEMA issues the new digital mapping to replace the prior paper maps	The Town anticipates reviewing and updating the Flood Hazard Area Ordinance upon the adoption of the new FEMA maps to replace the prior maps. Status is on-going and the adoption has not been scheduled. This will improve regulatory and enforcement capabilities to manage flood risk.	No	New

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>DPW</u>	Engineering, Administration	Capital Budget, HMGP	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
2	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Department of Public Works</u>	Engineering, Administration	HMGP, PDM, FMA	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
3	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering, Township of Boonton</u>	Administration	HMGP, FMA, Municipal budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
4	Severe Weather	Flood	Goal 4	Goal 1; Goal 5	<u>Department of Public Works; size of project may require County implementation</u>	Administration	HMGP, PDM, FMA	Reduced vulnerability of critical infrastructure to closure; reduced need for emergency protective services.
5	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget	Reduce hazard impacts, improve capabilities and coordination at Municipal Level; pursue opportunity to mitigate losses
6	Severe Weather	Severe Winter Weather, Flood, Drought	Goal 3	Goal 1; Goal 5	<u>Engineering</u>	Administration	NJDEP Grant funding, Capital Budget	Improved data collection, reduction in hazard impacts; identify hazards
7	Severe Weather	ALL Hazards	Goal 2	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve education and outreach
8	Severe Weather	Severe Winter Weather, Flood	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve capabilities, coordination at Municipal level

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-250k	3-5 years	2	1	3	3	3	12	Medium
2	\$50k-250k	Under 1 year	1	2	3	3	3	12	Medium
3	\$250k-\$500k	1-3 years	1	3	2	2	3	11	Medium
4	\$500k-\$750k	1-3 years	1	3	3	3	3	13	High
5	Over \$1M	1-3 years	2	3	2	2	3	12	Medium
6	Under \$50k	1-3 years	1	2	3	3	3	12	Medium
7	Under \$50k	1-3 years	3	3	2	1	2	11	Medium
8	Under \$50k	Under 1 year	1	3	3	3	3	13	High

Figure 1: Town of Boonton Hazard Area Extent and Location Map 1

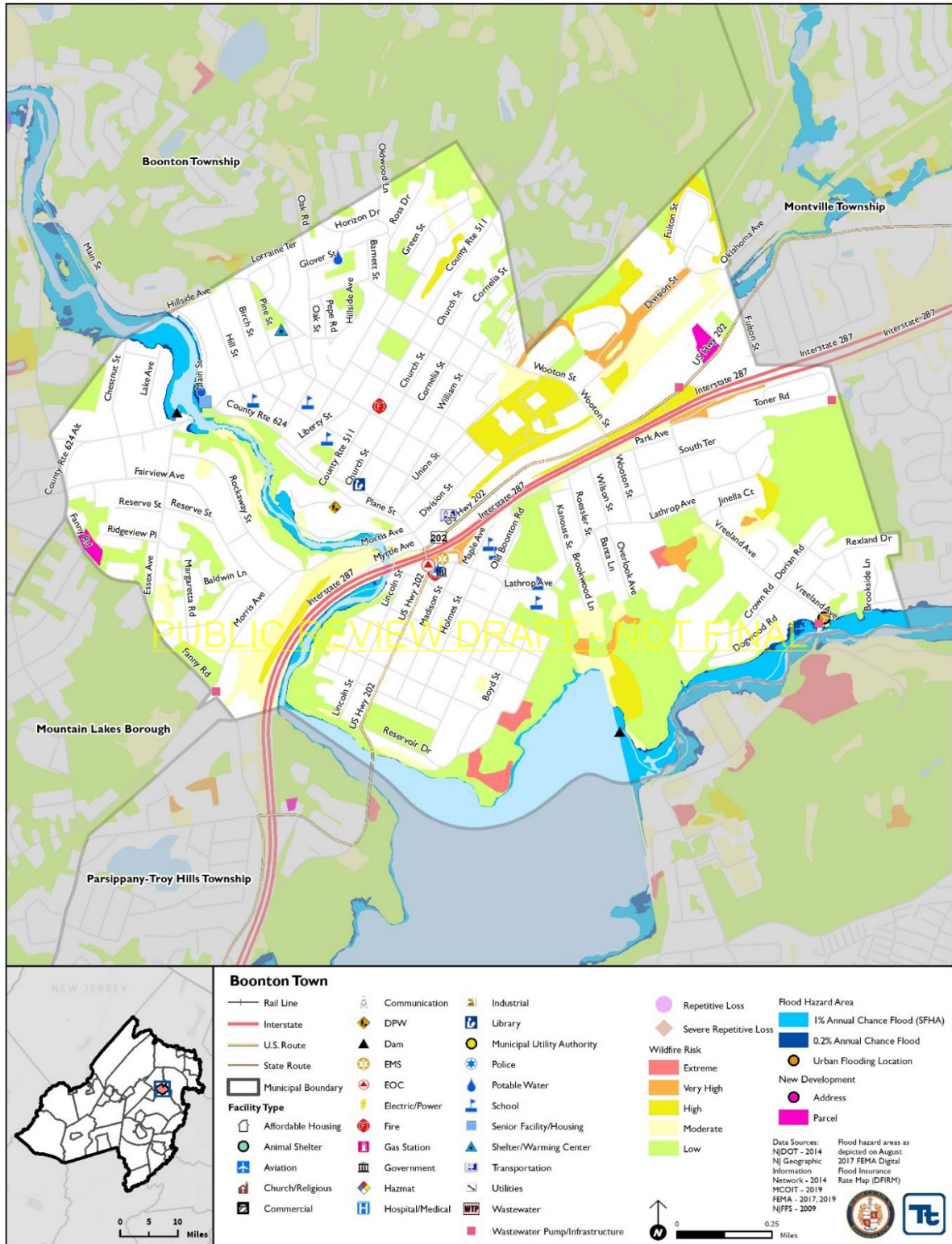
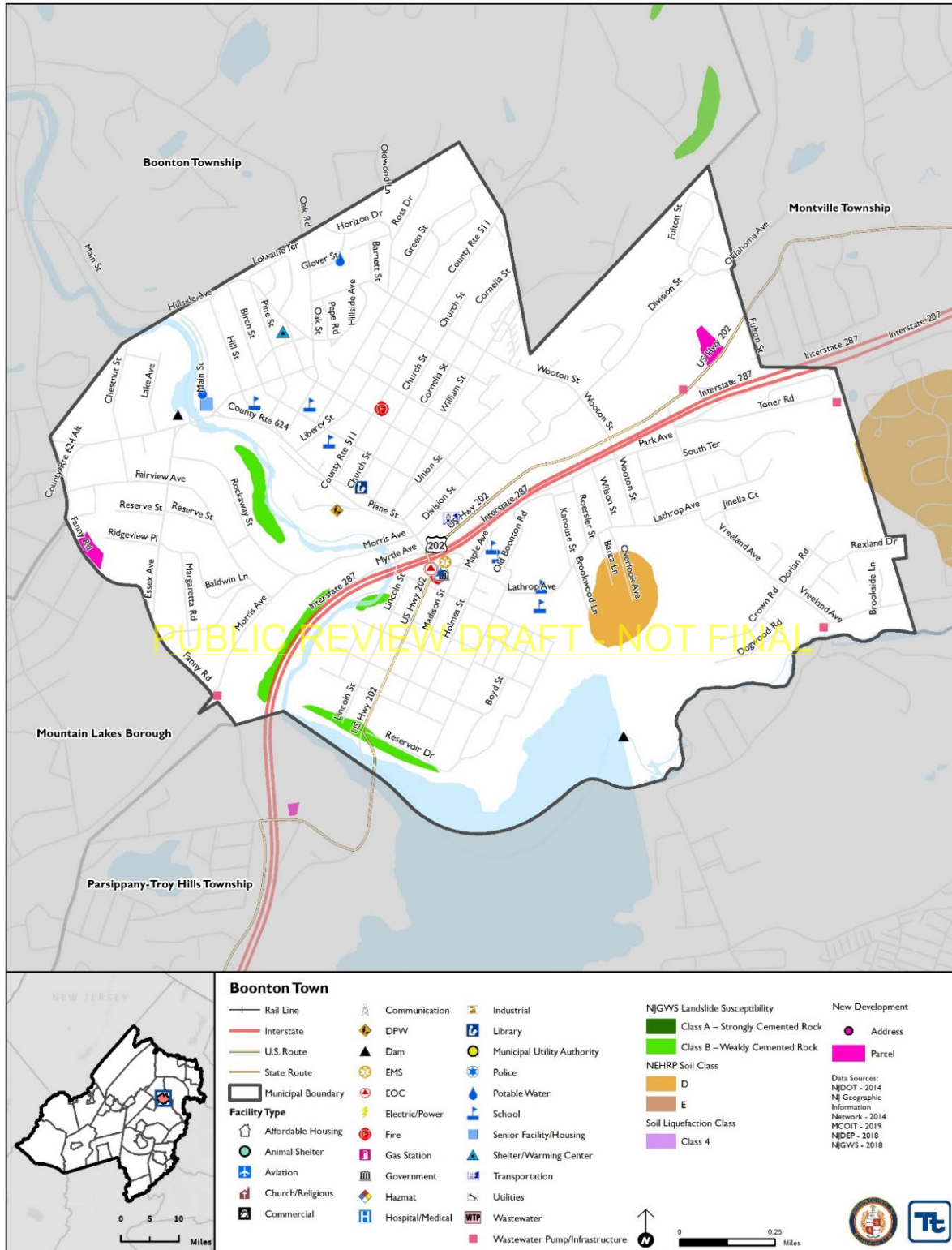


Figure 2: Town of Boonton Hazard Area Extent and Location Map 2



APPENDIX 18: TOWN OF DOVER COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Town of Dover and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State, Local	Yes		-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter 150, Construction Codes, Uniform. Adopted by the Mayor and Board of Aldermen of the Town of Dover 12-27-1976 with amendments.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Dover Code Chapter 236 Land Use and Development, Article IV Zoning, administered by the Planning Department.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Dover Code Chapter 236 Land Use and Development, Article V Land Subdivision and Site Plan. Administered by the Planning Department.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Dover Code Chapter 236, Article VB. Administered by the Planning Department.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	State	Yes	No	-
Comment: State mandated at local level;					
Shoreline Development	No	-	Yes	-	-

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	No	No	-
Comment: Dover Code Chapter 236 Land Use and Development, Article VI Land Subdivision and Site Plan. Administered by the Planning Department.					
Environmental Protection	Yes	State, Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 84 establishes the Shade Tree Commission; Chapter 366 Trees provides for the protection of shade trees. Chapter 383 Water allows for the declaration of a water emergency.					
Flood Damage Prevention	Yes	Local	Yes	-	-
Comment: Chapter 236 Land Use and Development, Art VI Flood Damage Prevention. Administered by the Construction Official. The ordinance currently lacks the state required 1 foot freeboard requirement. 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 designated to: <ul style="list-style-type: none">• Protect human life and health.• Minimize expenditure of public money for costly flood control projects.• Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.• Minimize prolonged business interruptions.• 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.• 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.• Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	No	No	-
Comment: Chapter 20 Fire Department, Volunteer; Chapter 57 Police Department; Chapter 189 Fire Prevention.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Master Plan, 2007. Administered by the Planning Department and adopted by the Planning Board.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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. Administered by the Administration.					
Disaster Debris Management Plan	No	-	-	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	No	-
Comment: Dover Code Chapter 236, Article VI. Administered by the Construction Department.					
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: 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). Stormwater Management Plan, April 2005.					
Stormwater Pollution Prevention Plan	No	-	-	-	-
PUBLIC REVIEW DRAFT - NOT FOR COMMENT					
Urban Water Management Plan	Yes		No	Yes/No	Yes/No
Comment: Part of the Town's master plan					
Habitat Conservation Plan	No	-	-	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	No	-	-	-	-
Comment:					
Transportation Plan	Yes	Local	No	No	-
Comment: Transportation Plan administered by the Planning Department and adopted by the Planning Board.					
Agriculture Plan	No	-	-	-	-
Comment:					
Climate Action Plan	No	-	-	-	-

PUBLIC REVIEW DRAFT - NOT FINAL

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Tourism Plan	No	-	-	-	-
Comment:					
Business Development Plan	No	-	-	-	-
Comment:					
Other	Yes	Local	No	No	-
Comment: April 2005-North Sussex Street Landfill Redevelopment; June 2006-Bassett Highway Redevelopment Plan.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. The Town's EOP was updated on August 2022 and expires August 2025.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	-	-	-
Comment:					
Public Health Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	If the area is not deemed 'area need of redevelopment' then development approval is not needed. If it is located in an 'area need of redevelopment' it needs approval the Planning Board and Governing Body
Does your jurisdiction have the ability to track permits by hazard area?	Approvals by the Planning Board are tracked by hazard area
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes; however, the Town is fully developed but areas available for development are known

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Town of Dover.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	No	-
Economic Development Commission / Committee	Yes	Committee of the Mayor & Board of Aldermen
Warning Systems / Services (reverse 911, outdoor warning signals)	No	-
Maintenance program to reduce risk	Yes	Fire
Mutual aid agreements	Yes	Planning Board
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering & Planning
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering & Construction
Planners or engineers with an understanding of natural hazards	Yes	Engineering
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	No	-
Stormwater engineer	No	-
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	Yes	Water Superintendent
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Office of OEM
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	No	-
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Town of Dover.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes – the Town has to comply with the Clean Water Act because they provide public water
Other	Yes, Morris County Flood Mitigation Grant Program

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Town of Dover.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes – done in-house
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Town of Dover Facebook page
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Local Emergency Planning Committee
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Mass notification system (RAVE), Town newsletter
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Mass notification system (RAVE) and public notification system (air horn)

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Town of Dover.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-

Program	Participating?	Classification	Date Classified
Public Protection (Fire ISO Protection Class)	Yes	4	2017
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Department
Who is your floodplain administrator? (name, department/position)	Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	1994
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meet minimum federal requirements but not state requirements.
When was the most recent Community Assistance Visit or Community Assistance Contact?	1991
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	No – the current maps are showing areas in the 100-year area that are at a higher elevation (above the base flood elevation)
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
☐ If so, what type of assistance/training is needed?	Training and assistance in floodplain management and administration are needed
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Policies in force: 222 Insurance in force: \$59,676,800 Premium in force: \$745,933
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 571 Claims still open or closed without payment: 73 Total payments for losses: \$7,116,449
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Town of Dover that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Town of Dover has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Town of Dover.

- Number of repetitive loss (RL) properties: 48
- Number of severe repetitive loss (SRL) properties: 3
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Dover Municipal Complex (Fire Department, Police Department, Municipal Building) at 37 N Sussex Street*	Fire, Police, EOC, Municipal Hall	X	X
Town of Dover Public Library	Library	X	X
Regency Grande Nursing & Rehab Center	Senior	X	X
Dover Housing Authority – 215 East Blackwell St	Housing	X	X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Town of Dover has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Town agreed with the calculated ranking for the hazards of concern.

Table 9: Town of Dover Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

2.6 CANCELLED ACTIONS

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Dover	Generator for Emergency shelter at Dover High School	Dover High School is used as a community shelter. It currently lacks a generator to provide power in the event of power loss.	The Town will acquire and install a backup generator to provide resilience in the event of power interruption.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Dover	Feasibility Study of the Rockaway River	The Rockaway River is the primary source of flooding which impacts the repetitive loss and severe repetitive loss properties. Impacts of fixing the problem are unknown, including impacts to downstream municipalities, wetlands, and tributaries to the River.	Conduct a feasibility study of the Rockaway River in the Town to determine the best solution(s) to reduce or alleviate the flooding within the Town, including the repetitive loss properties, of which many are old multi-family homes (i.e., elevation may not be feasible; acquisition is a loss of tax rateables). The study will identify potential mitigation projects. The Town will identify the best solution and implement the project. Once the study and project are complete, it will increase flood protection to homes, businesses, and critical facilities.	Yes	Not Started
3	Dover	Update Flood Damage Prevention Ordinance	The current ordinance does not include the state requirements of one foot above the base flood elevation.	Update the flood damage prevention ordinance to set the one foot above the base flood elevation for new or substantial construction.	Yes	Not Started
4	Dover	Town-wide Flood Warning System	The Town does not have a way of determining flood levels to prepare the population for proper warnings and/or evacuations.	Install an automated flood warning system. This will include sensors (rain, water level, weather) installed along the Rockaway River in the Town.	Yes	Not Started
5	Dover	Purchase Portable Flood Walls	East Blackwell Street is a primary road (county-owned) in the Town that is floodprone.	Purchase portable flood walls to be deployed prior to a heavy rain event.	Yes	Not Started

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	Severe Winter Weather	Goal 1		<u>Dover High School Superintendent</u> , OEM		HMGP, PDM, Municipal budget, BRIC	Ensures continuity of operations of shelter
2	Flood		Goal 3	Goal 4	<u>Town OEM</u> , Town Engineer		HMGP, BRIC, municipal budget	Increase in flood protection
3	Flood		Goal 4	Goal 5	<u>Town Administrator</u> , Town Board		Local Budget	Meet state standards, less flood exposure for future development
4	Flood	Severe Weather	Goal 3	Goal 4	<u>Town OEM</u> , Town Engineer		HMGP, NWS, USGS, Municipal budget	Increased flood warning.
5	Flood		Goal 1		<u>Town OEM</u> , Town DPW		HMGP, Municipal budget	Flood protection for East Blackwell Street. Emergency response times kept low.

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$250k-\$500k	3-5 years	2	1	1	2	2	8	Low
2		3-5 years	1	3	1	2	2	9	Medium
3	Under \$50k	1-3 years	1	2	2	2	1	8	Low
4	\$50k-250k	3-5 years	3	1	1	2	2	9	Medium
5	\$250k-\$500k	3-5 years	1	3	2	2	2	10	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Town of Dover Hazard Area Extent and Location Map 1

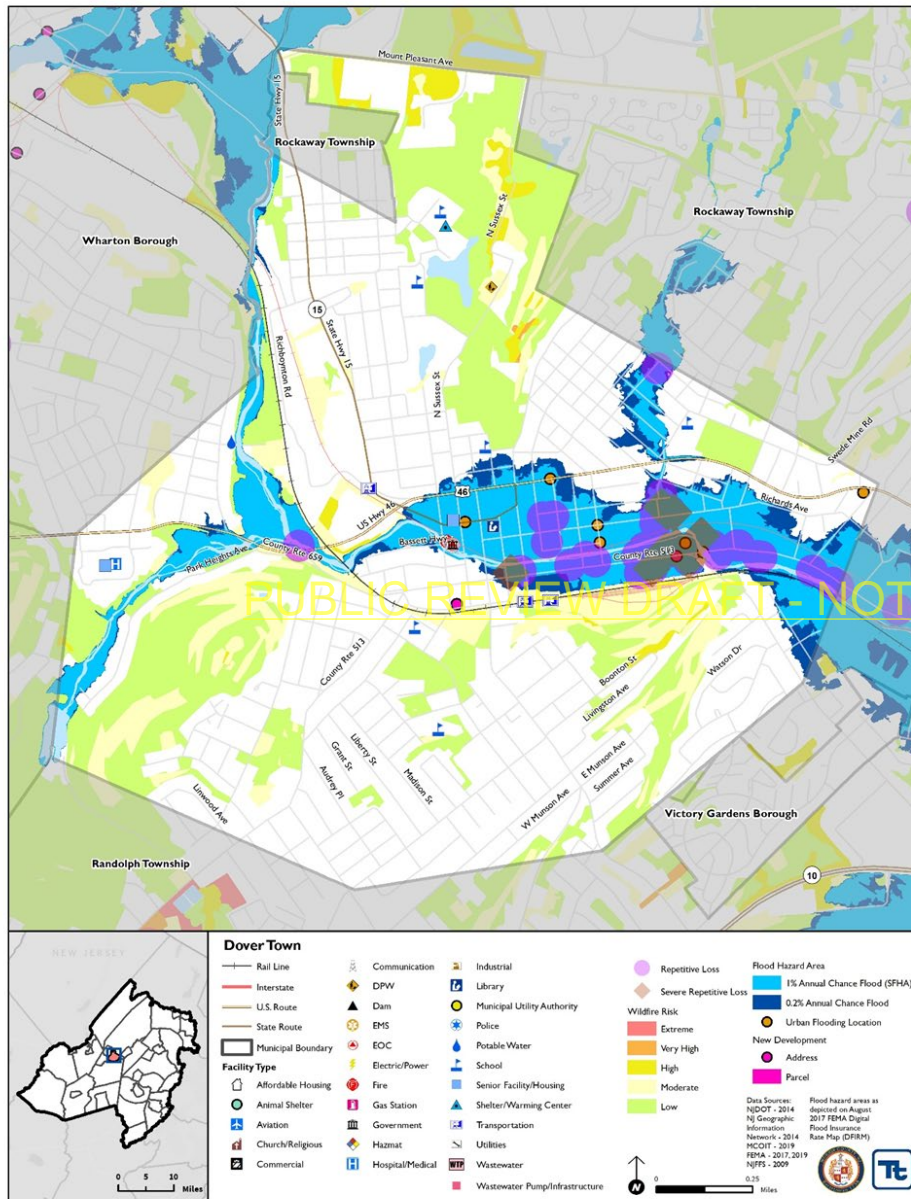
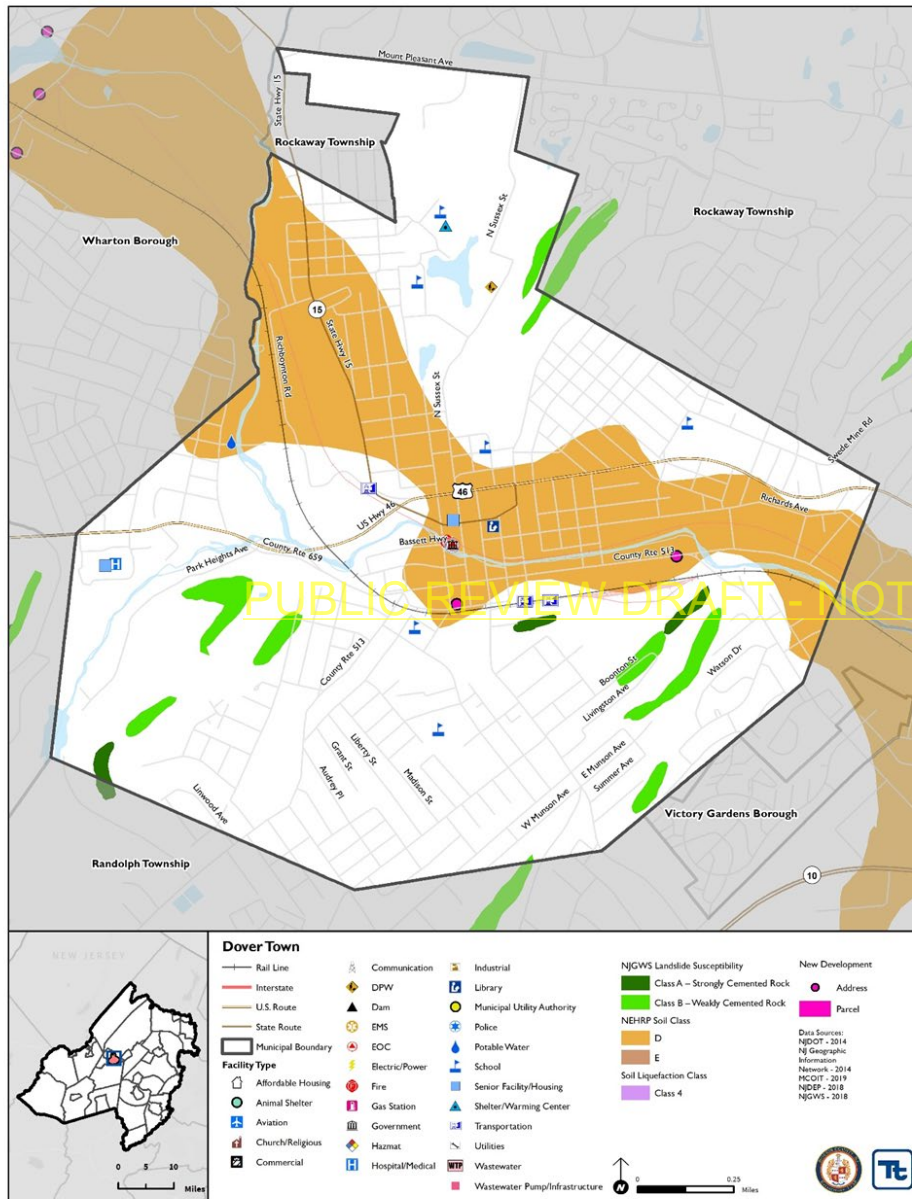


Figure 2: Town of Dover Hazard Area Extent and Location Map 2



APPENDIX 19: TOWNSHIP OF BOONTON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Boonton and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Adopted 9/3/2019. Chapter 62 Construction Codes, Uniform. Administered by the Construction Official.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter 102 Land Use, Part 9 Zoning. Administered by Planning Board, Zoning Board of Adjustment, and the Administration.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 102 Land Use. Administered by Planning Board, Zoning Board of Adjustment, and the Administration.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 125 of the municipal code. Adopted June 2005.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	No	-
Comment: State mandated at local level; discussed in master plan.					
Shoreline Development	No	-	Yes	No	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes/No		-
Comment: Chapter 102 Land Use. Administered by Planning Board, Zoning Board of Adjustment, and the Administration.					
Environmental Protection	No	-	Yes		
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	Yes	No	
Comment: Chapter 102 Land Use, Part 7 Flood Damage Prevention.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	-	-	-	-
Comment: Chapter 15 Fire Department, Chapter 28 Police Department					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-
Comment: Master Plan from 2001. Reexamination from June 2007 and March 2018. Administered by Zoning and the Planning Board. .The 2001 plan includes information on the natural environment and elements for housing, circulation/transportation, schools, parks/open space, community facilities, land use, and recycling. The plan includes the goal of avoiding adverse impacts on the local environment and adopting planning and zoning measures that will protect sensitive wetlands, steep slopes, potable ground water supply, and flood prone areas.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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.					
Disaster Debris Management Plan	No	-	No	Yes	2020-Township of Boonton-002
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	No	-
Comment: Flood Acquisition Plan (with Morris County). Administered by OEM working with all departments.					
Stormwater Management Plan	Yes	Local and State	Yes	Yes	2020-Township of Boonton-003

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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). Boonton Township plan from April 2005.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	-
Comment: Adopted April 2005.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Open Space Plan	Yes	Local	No	Yes	-
Comment: The Township's Open Space Plan has continued to guide the Township's successful protection of environmentally sensitive land, including those with wetlands, steep slopes and floodplains.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) /	Yes	Local	Yes	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Emergency Operations Plan (EOP)					
Comment: 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. The Township maintains their CEMP, which includes a COOP/COG program to protect against disasters. Administered by OEM.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	Yes	Yes	-
Comment: Part of the CEMP.					
Public Health Plan	Yes	County	Yes	No	No
Comment:					
Other	No		No	-	-
Comment:					

PUBLIC REVIEW DRAFT - NOT FINAL

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Planning Board
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No, minimum

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Boonton.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Zoning
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	Yes	Admin
Economic Development Commission / Committee	No	-

Staff/Personnel Resource	Available?	Department/Agency/Position
Warning Systems / Services(mass notification, outdoor warning signals)	Yes	OEM/Police
Maintenance program to reduce risk	Yes	DPW (contracted)
Mutual aid agreements	Yes	Various Administration laid out in Chapter 19 of the municipal code. All building inspection services and permits are provided by the Township of Montville through a shared services agreement.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Outsourced
Engineers or professionals trained in building or infrastructure construction practices	Yes	Outsourced
Planners or engineers with an understanding of natural hazards	Yes	Outsourced
Staff with training in benefit/cost analysis	Yes	Finance
Staff with training in green infrastructure	No	None
Staff with education/knowledge/training in low impact development	No	
Surveyor	Yes	Outsourced
Stormwater engineer		
Personnel skilled or trained in GIS applications	Yes	Outsourced
Local or state water quality professional	Yes	Outsourced
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Various
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Boonton.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, through Morris County
Capital Improvements Project Funding	Yes, Admin.
Authority to Levy Taxes for Specific Purposes	Yes, Governing Body
User Fees for Water, Sewer, Gas or Electric Service	Yes, Finance
Incur Debt through General Obligation Bonds	Yes, Governing Body
Incur Debt through Special Tax Bonds	Yes, Governing Body
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Boonton.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your web-site? • If yes, briefly describe.	Yes, General mitigation handouts; power outage information; storm preparedness handouts
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, Township of Boonton Facebook; Township of Boonton OEM Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes, County Rave – Mass Notification Tool
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, County Rave – Mass Notification Tool

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Boonton.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes	5/9*	
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	10/9/2018

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Hank Huelsebusch, Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	September 2010 (closed date)

Criterion	Response
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	TBD
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state what they are. 	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what they are. 	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If no, state why. 	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	N/A
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	N/A
Does your jurisdiction participate in the Community Rating System (CRS)? <ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	No
How many flood insurance policies are in force in your jurisdiction? <ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	Flood insurance policies: 10 Insurance in force: \$9,020,000 Premium in force: \$23,868
How many total loss claims have been filed in your jurisdiction? <ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	Total loss claims: 58 Claims still open or closed without payment: 11 Total payments for losses: \$1,060,251
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Boonton that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Boonton has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Boonton.

- Number of repetitive loss (RL) properties: 10
- Number of severe repetitive loss (SRL) properties: 2
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Town of Boonton- Well Field	Potable	X	X
Deer Lake Dam	Dam	X	X
Town of Boonton Water Storage Tanks*	Potable		X

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Boonton has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Township of Boonton Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Township of Boonton reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Boonton reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Boonton Township	Powerville Dam rehabilitation project	Powerville Dam is in need of structural rehabilitation. Wing walls are deteriorating. Conduct an engineering review of the stability of the spill way and the wing walls that are partially eroded. Determine if the wing walls can be repaired without disturbing the spillway.	Wing walls are eroded due to severe previous flood events causing water to go around them and undermine them. A preliminary study is complete to support this work. The project will maintain the waterpool above the dam and reduce sudden release of flooding downstream	Y	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1		<u>Township Administrator</u>	NJ DEP Dam Safety Section	Municipal budget and/ or NJ Dam Safety Grant	Maintain waterpool above dam and reduce sudden release of flooding downstream

2.7.3 STRATEGY RAKING AND PRIORITIZATION

PUBLIC REVIEW DRAFT - NOT FINAL									
	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Over \$1M	3-5 years	1	1	1	3	1	7	Low

Figure 1: Township of Boonton Hazard Area Extent and Location Map 1

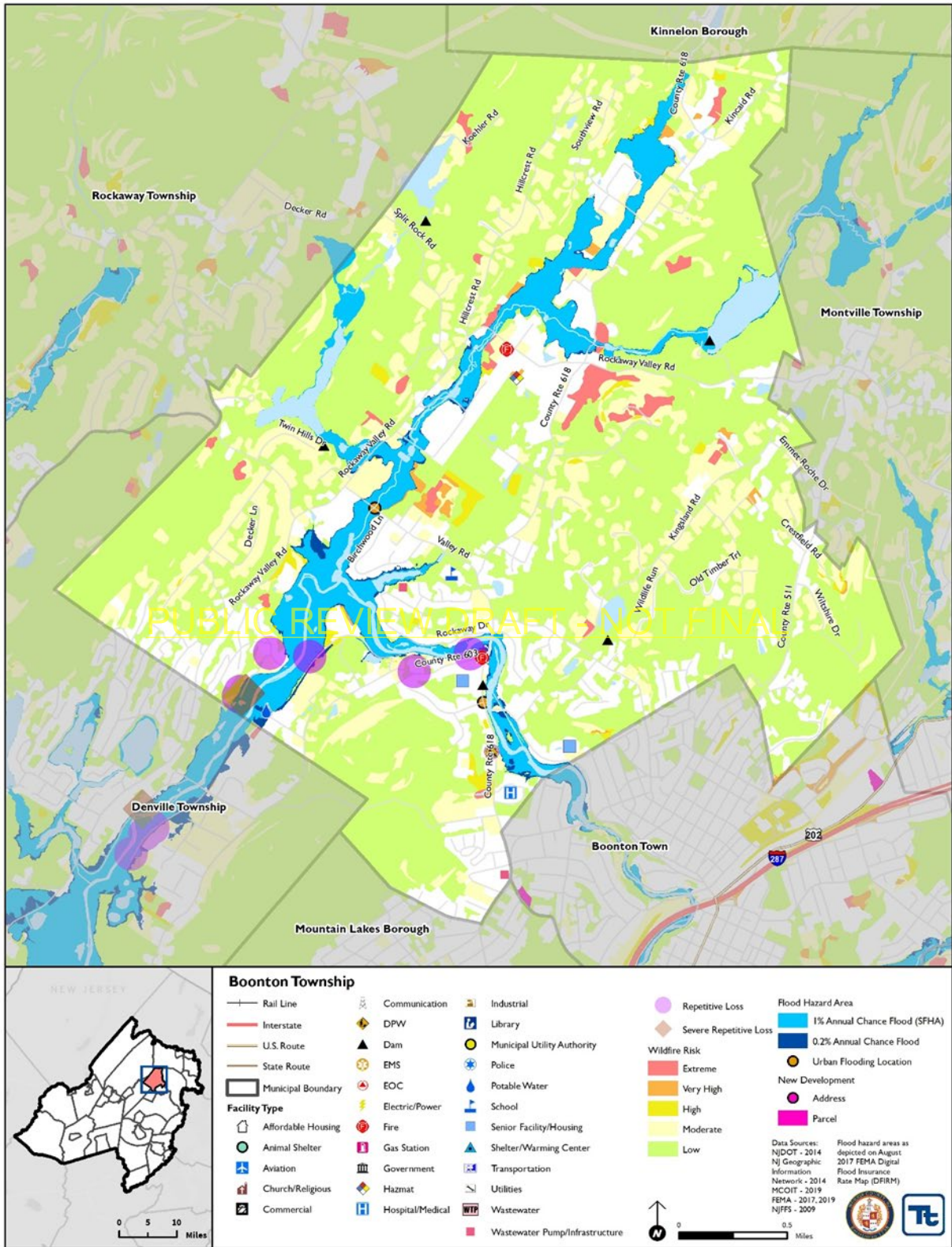
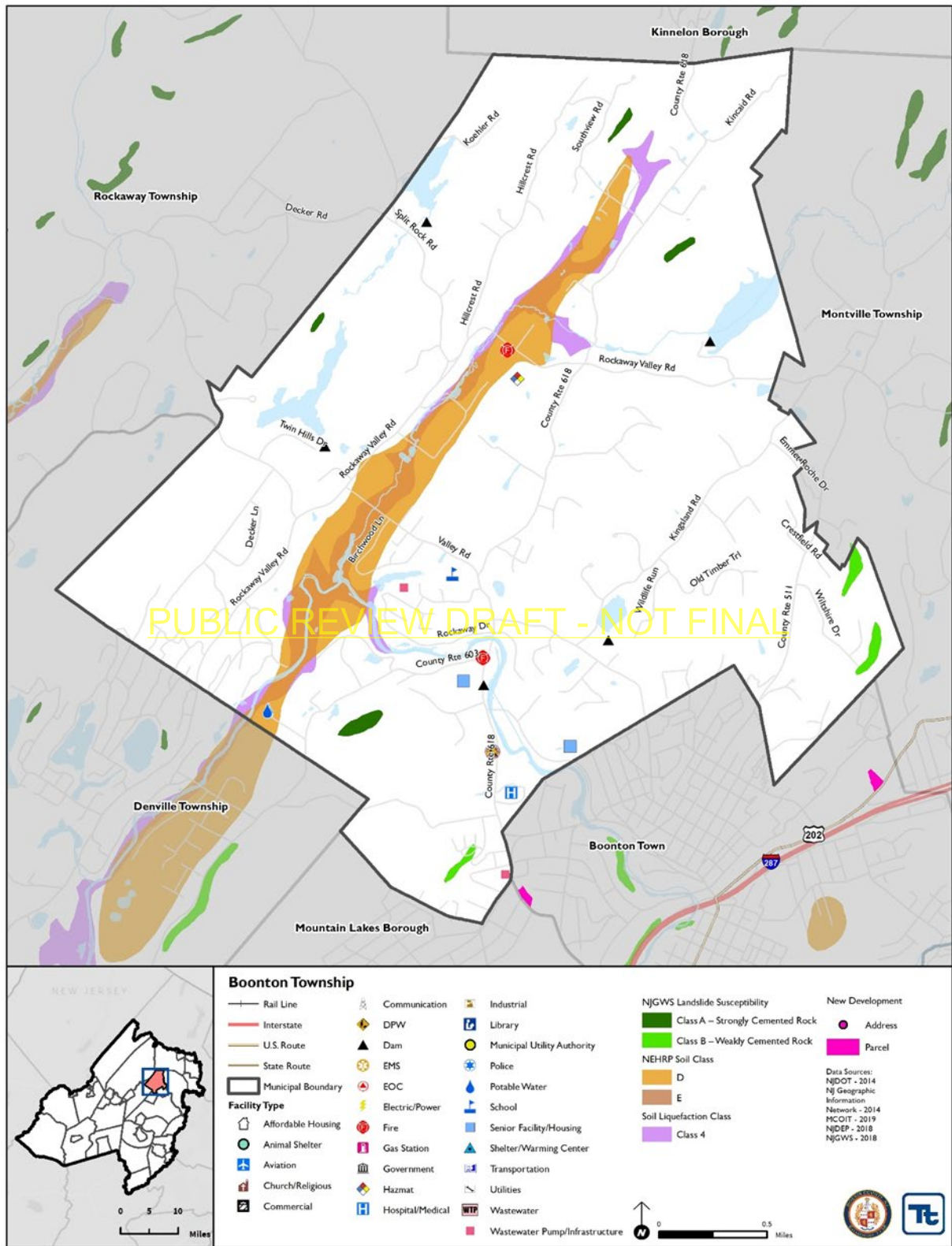


Figure 2: Township of Boonton Hazard Area Extent and Location Map 2



APPENDIX 20: TOWNSHIP OF CHATHAM COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Chatham and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	-	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Chatham Township General Ordinance, Chapter XI, Building and Housing.					
Zoning Code	Yes	Local	Yes, if have planning board	-	-
Comment: State permissive on local level. [note local ordinance # and date of adoption]. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chatham Township Land Development Chapter XXX, Article 5, 30 -40					
Subdivisions	Yes	Local	Yes, if have planning board	-	-
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Chatham Township Land Development Chapter XXX, Article 6, 30 – 60 Filing Procedures					
Stormwater Management	Yes	State and Local	Yes	-	-
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Chatham Township Land Development Chapter XXX, Article 7, 30-83					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Growth Management	No	Local and State	Yes, if have planning board	-	-
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	No	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	No	Local	Yes, if have planning board	-	-
Comment: 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 freeholders 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.					
Environmental Protection	No	-	No	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Federal, State, Local	No	-	-
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Township of Chatham Article X Flood Damage Prevention and Flood Hazard Area Regulations.					
Wellhead Protection	No	-	No	-	-
Comment: 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)).					
Emergency Management	Yes/No	Local	Yes	-	-
Comment: 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	Yes/No		No	-	-
Comment:					
Disaster Recovery Ordinance	Yes/No		No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	Yes/No		No	-	-
Comment:					
Steep Slope Ordinance	Yes	Local	No	No	No
Comment: Chapter 30 Div VII Section 30-96.24 Steep Slopes Protection.					
Planning Documents					
Master Plan	Yes	Local	Yes	Yes	Yes
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); Authority of the Planning Board. Can integrate with reference to County HMP in next update. The last Master Plan Reexamination Report is from 2006. Land Use Plan is from 2011. Mitigation Action 2020-Chatham T-001.					
Capital Improvement Plan	Yes	Who is responsible organization?	Allowed	No	No
Comment: 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.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332)					
Stormwater Management Plan	Yes	Local, State	Yes	No	No
Comment: 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). Authority is the Planning Board. Published 2005 as Section 10 of the Master Plan.					
Stormwater Pollution Prevention Plan	No	Local, State	Yes	No	No
Comment: 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). The Township's Stormwater Pollution Prevention Plan is required to be posted to the Township's website.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	Yes	Local	No	-	-
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4). Element of the Master Plan Section 5 Circulation 1999 and Walkway/Bikeway Plan 2009.					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Shade Tree commission	No	-	No	-	-
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection, c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958.					
Other - Historic Preservation	No	-	No	-	-
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest. Master Plan Section 11 Historic Preservation 1999.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning board
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Township is fully built out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Chatham.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Construction Department
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Chatham Township Environmental Commission
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Police, Fire, EMS
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer and Town Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer and Town Planner
Planners or engineers with an understanding of natural hazards	Yes	Engineer and Town Planner
Staff with training in benefit/cost analysis	Yes	Engineer and Town Planner
Staff with training in green infrastructure	Yes	Engineer and Town Planner
Staff with education/knowledge/training in low impact development	Yes	Engineer and Town Planner
Surveyor	Yes	Engineer and Town Planner
Stormwater engineer	Yes	Engineer and Town Planner
Personnel skilled or trained in GIS applications	Yes	Engineer and Town Planner
Local or state water quality professional	Yes	Engineer and Town Planner
Scientist familiar with natural hazards in local area	Yes	Engineer and Town Planner
Emergency manager	Yes	OEM
Grant writers	No	-
Resilience Officer	No	-
Watershed planner	Yes	Engineer and Town Planner

Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental specialist	Yes	Engineer and Town Planner
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Chatham.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes (SEWER ONLY)
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	No

PUBLIC REVIEW DRAFT - NOT FINAL

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Chatham.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes, consultant
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, OEM website
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, Facebook, Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes, Environmental Commission, Open Space Committee, Board of Health, Planning Board, Zoning Board
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes, quarterly tax bills, ACTNOW alerts through RAVE
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, RAVE, Special Needs Registry

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Chatham.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	No	-	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Bronze		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Engineering Contractor/Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2004
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	10/18/18
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
☐ If so, what type of assistance/training is needed?	N/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No No

Criterion	Response
How many flood insurance policies are in force in your jurisdiction?	45
<ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	\$12,471,200 \$35,400
How many total loss claims have been filed in your jurisdiction?	22
<ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	0 open, 11 w/o pymt \$104,523
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Chatham that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Chatham has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Chatham.

- Number of repetitive loss (RL) properties: 1
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

There are no critical facilities in the community located within the 1-percent and 0.2-percent floodplain in the Township of Chatham.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts, and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Chatham was provided with the Morris County Hazard Ranking Table, as well as its individual results, to reflect the relative risk of hazard concerns to the community.

Table 8: Township of Chatham Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High

Hazard	Ranking	Hazard	Ranking
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Township of Chatham reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Chatham reported no cancelled actions.

PUBLIC REVIEW DRAFT - NOT FINAL

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Chatham Township	Master Plan Update	A master plan update provides opportunity to incorporate hazard mitigation.	Incorporate hazard mitigation information into next update of the master plan, with a focus on ensuring that the community takes capabilities and risks into account to grow with a focus on resilience.	Yes	Not Started
2	Chatham Township	Tree Removal & Maintenance	Jersey Central Power and Light (JCP&L) has provided tree trimming. DPW trims too. Trees need to be replanted without compromising power line safety.	Educate staff and residents on planting the right tree in the right place. The environmental commission should evaluate for potential tree ordinance change.	Yes	Not Started
3	Chatham Township	River Road Repetitive Loss Mitigation	Township has 1 RL property on River Road in the floodplain.	Discuss options with the owner of the RL property and encourage mitigation action, and if interested in applying for a grant, submit a grant application to implement mitigation measures.	Yes	Not Started
4	Chatham Township	Candace Lane drainage	Backyard drainage swale on Candace Lane not at sufficient capacity.	Perform drainage study of Candace Lane to better understand drainage issues. Once the study has been completed, identify and implement actions and projects that mitigate drainage issues.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
5	Chatham Township	Runnymede Road drainage	The backyard drainage swale Runnymede Road not at sufficient capacity.	Perform drainage study of Runnymede Road to better understand drainage issues. Once the study has been completed, identify and implement actions and projects that mitigate drainage issues.	Yes	Not Started
6	Chatham Township	Susan Drive drainage	Backyard drainage swale Susan Drive not at sufficient capacity.	Perform drainage study of Susan Drive to better understand drainage issues. Once the study has been completed, identify and implement actions and projects that mitigate drainage issues.	Yes	Not Started
7	Chatham Township	Sunset Drive drainage	Backyard drainage swale Sunset Drive not at sufficient capacity.	Perform drainage study of Sunset Drive to better understand drainage issues. Once the study has been completed, identify and implement actions and projects that mitigate drainage issues.	Yes	Not Started
8	Chatham Township	GIS Mapping of Catch Basin & General Stormwater Facilities	The location of all catch basins and stormwater facilities, both private and public, need to be identified, mapped, and located for planning and maintenance	Create a GIS mapping system of catch basins, stormwater facilities, basins, culverts, and other drainage features and structures to use as a planning and maintenance tool.	No	New
9	Chatham Township	Develop All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Need for a All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Create and continuously update All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness.	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
10	Chatham Township	Review & update the Chatham Township Flood Hazard Area Ordinance	The Chatham Township Flood Hazard Area Ordinance should be consistent with FEMA requirements. Updating is required periodically and will be required when FEMA issues the new digital mapping to replace the prior paper maps	The Township anticipates reviewing and updating the Flood Hazard Area Ordinance upon the adoption of the new FEMA maps to replace the prior maps. Status is on-going and the adoption has not been scheduled. This will improve regulatory and enforcement capabilities to manage flood risk.	No	New

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2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Drought	All Hazards	Goal 4		<u>Planning board,</u> <u>Engineering</u>		Municipal budget	Medium
2	Wildfire	Severe Winter Weather	Goal 4	Goal 4	<u>Engineering,</u> <u>DPW,</u> <u>Environmental</u> <u>Commission</u>		Municipal budget	High

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
3	Flood		Goal 5		<u>Engineering, Administration</u>		Municipal budget, HMGP, PDM	High
4	Flood	Severe Weather	Goal 4		<u>Engineering, Administration</u>		Municipal budget, HMGP, PDM	High
5	Flood	Severe Weather	Goal 4		<u>Engineering, Administration</u>		Municipal budget, HMGP, PDM, BRIC	High
6	Flood	Severe Weather	Goal 4		<u>Engineering, Administration</u>		Municipal budget, HMGP, PDM; BRIC	High
7	Flood	Severe Weather	Goal 4		<u>Engineering, Administration</u>		Municipal budget, HMGP, PDM; BRIC	High
8	Flood	Severe Weather	Goal 3	Goal 1; Goal 4	<u>Engineering, Administration</u>		Local funding	
9	Severe Winter Weather	All hazards	Goal 2	Goal 1	<u>Engineering, Administration</u>		Local funding	
10	Flood		Goal 1	Goal 3; Goal 5	<u>Engineering, Administration</u>		Local Funds; Federal Funds; BRIC	Reviewing and updating the ordinance will allow the community to get a better handle on ordinances.

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	1-3 years	2	3	2	3	2	12	Medium
2	\$250k-\$500k	Under 1 year	1	2	3	3	2	11	Medium
3	\$250k-\$500k	1-3 years	1	3	3	3	3	13	High
4	\$250k-\$500k	3-5 years	1	3	2	2	2	10	Medium
5	\$50k-\$250k	3-5 years	1	3	2	2	2	10	Medium
6	\$50k-\$250k	3-5 years	1	3	2	2	2	10	Medium
7	\$50k-\$250k	3-5 years	1	3	2	2	2	10	Medium
8	Under \$50k	3-5 years	1	3	2	2	2	10	Medium
9	Under \$50k	Under 1 year	2	2	2	3	2	11	Medium
10	Under \$50k	1-3 years	1	3	3	2	2	11	Medium

Figure 1: Township of Chatham Hazard Area Extent and Location Map 1

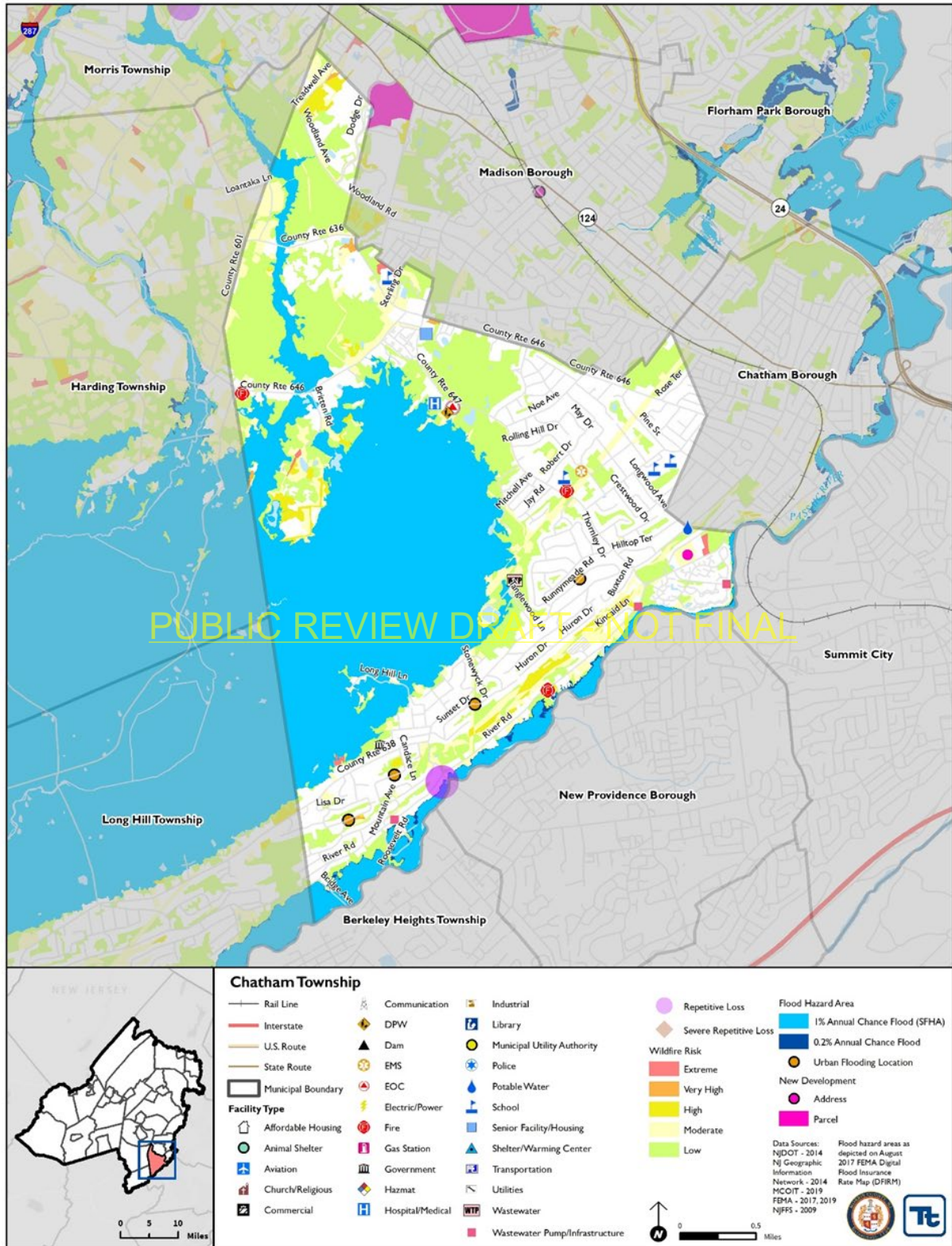
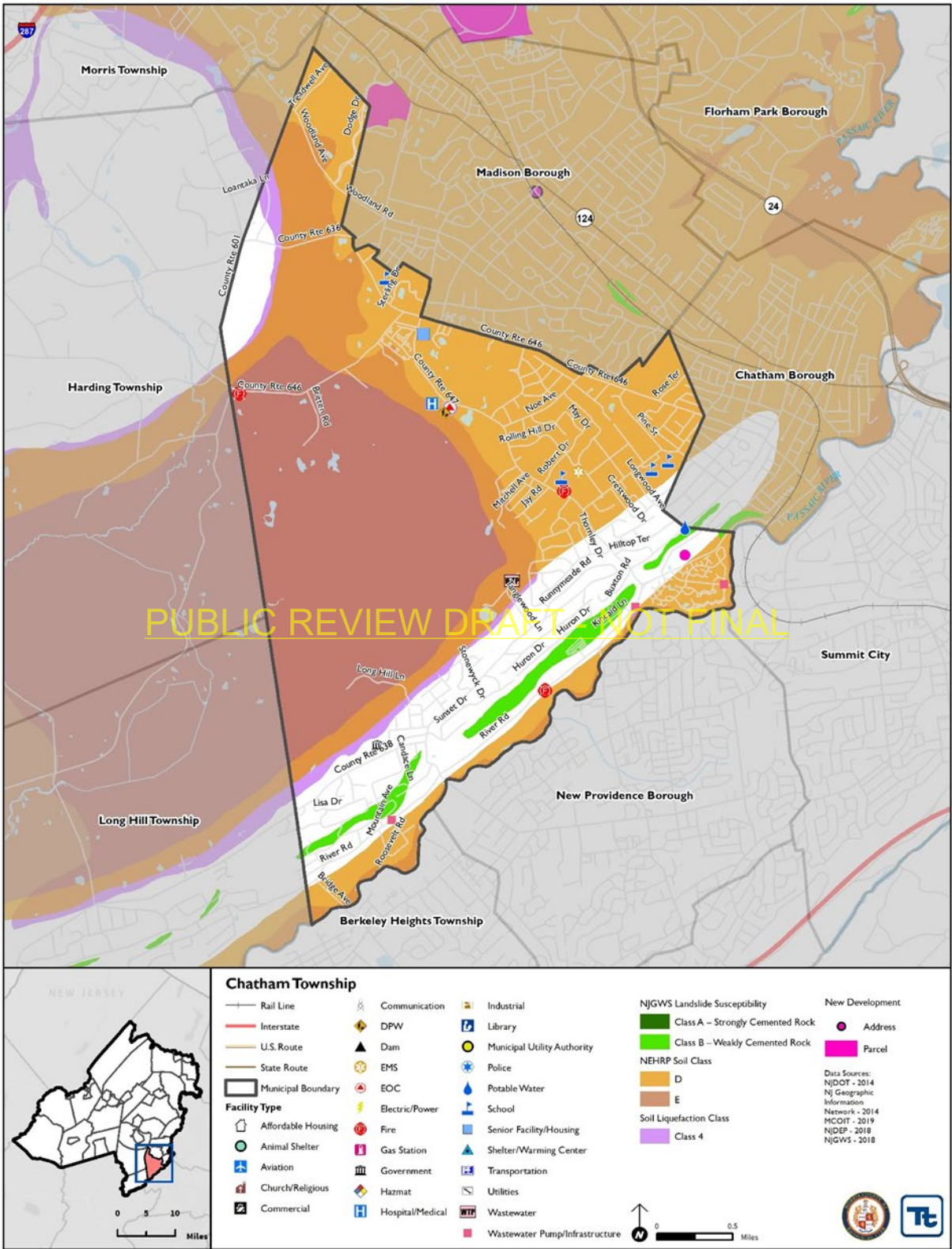


Figure 2: Township of Chatham Hazard Area Extent and Location Map 2



APPENDIX 21: TOWNSHIP OF DENVILLE COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Denville and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	Yes	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.); Chapter XI of Municipal Code, 2015. Administered by the Building Code Official.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter XX of the Township Code. Administered by the Planning & Zoning Boards. "": The Township of Denville Land Use Ordinance (Chapter 19 of the municipal code) was adopted in order to:					
<ul style="list-style-type: none">To guide the appropriate use or development of all lands in the Township, in a manner which will promote the public health, safety, morals and general welfare.To secure safety from fire, flood, panic and other natural and man-made disasters.To provide adequate light, air and open space.To ensure that the development of the Township does not conflict with the development and general welfare of neighboring municipalities, the County and the State as a whole.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.To encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies.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 citizens.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.To promote a desirable visual environment through creative development techniques and good civic design and arrangement.To promote the conservation of historic sites and districts, open space, energy resources and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land.To encourage planned unit 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.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">To encourage senior citizen community housing construction.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.To promote utilization of renewable energy resources; andTo promote the maximum practicable recovery and recycling of recyclable materials from municipal solid waste through the use of planning practices designed to incorporate the State Recycling Plan goals and to complement municipal recycling programs."					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter XIX (Land Use) Article 4 of Township Code. Administered by the Planning & Zoning Boards.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter XIX (Land Use) Article 4 of Township Code (19-4.16 STORMWATER CONTROL). Administered by the Planning and Zoning Boards.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	No	-
Comment: State mandated at local level;					
Site Plan Review	Yes	Local	Yes	No	-
Comment: Chapter XIX (Land Use) Article 4. Administered by the Planning & Zoning Boards.					
Environmental Protection	Yes	Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 29 Environmental Regulations, to control application of fertilizers. Administered by the Code Department.					
Flood Damage Prevention	Yes	Local	Yes	No	-
Comment: Chapter XIX (Land Use) Article 5. Administered by John Ruschke, PE, CFM.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	-	No	-
Comment: Chapter 2 Administration Article X Policies and Procedures. Mutual aid agreement for police protection (Morris County Regional Emergency Deployment System).					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Soil and Soil Removal Ordinance	Yes	Local	No	No	-
Comment: The Township of Denville Soil and Soil Removal Ordinance (Chapter 17 of the municipal code) was adopted to control soil erosion and the resulting sedimentation from occurring on and in areas within the Township, by requiring proper provisions for water disposal and the protection of soil surfaces, and to control, regulate and prevent conditions which cause improper water run-off, soil disturbances, distribution or removal of ground cover or plant damage.					
Removal of Trees Ordinance	Yes	Local	No	No	-
Comment: The Removal of Trees Ordinance (Chapter 535-545 of the municipal code) was adopted to control and regulate indiscriminate and excessive removal, cutting and destruction of trees upon tracts of land, and to control, regulate and prevent conditions which cause increased surface drainage, siltation, sedimentation and soil erosion, and decreased soil fertility; create dust and mosquito breeding places; impair the stability and value of real estate; all of which conditions are, and will, in the future, be a deterrent to the public safety, health and general welfare.					
Planning Documents					
Comprehensive / Master Plan	Yes/No	Local	Yes	No	-
Comment: Master Plan 2023. Planning & Zoning Boards.					
Capital Improvement Plan	Yes/No	Local	Allowed	Yes	-
Comment: 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. Annual, Bond Ordinance for capital improvements #19-15. Administered by the Planning Board.					
Disaster Debris Management Plan	No		No		
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local and State	Yes	Yes	Yes/No
Comment: 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). Last updated March 2005. Administered by Engineering/Administration.					
Stormwater Pollution Prevention Plan	Yes		Yes		
Comment:					
Urban Water Management Plan	No		No		
Comment:					
Habitat Conservation Plan	No		No		
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No		No		
Comment: Not Applicable, No Shoreline					
Community Wildfire Protection Plan	No		No		
Comment:					
Community Forest Management Plan	No		No		
Comment:					
Transportation Plan	Yes	Local	No	No	-
Comment: As part of EOP 2011.					
Agriculture Plan	No		No		
Comment:					
Climate Action Plan	No		No		
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					
Tourism Plan	No		No		
Comment:					
Business Development Plan	No		No		
Comment:					
Open Space Plan	Yes	Local	Yes	No	-
Comment: Part of Master Plan Re-Examination 2006; included in 2023 Master Plan Update.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	-
Comment: 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. Emergency Operations Plan of 2011. Administered by OEM.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No				
Comment:					
Post-Disaster Recovery Plan	Yes	Local	No	No	-
Comment: As part of Emergency Operations Plan of 2011.					
Continuity of Operations Plan	No				
Comment:					
Public Health Plan	No				

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Other					
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Construction Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes, the Township has access to the County GIS system
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, buildable lands were identified in the most recent COAH report and Master Plan.

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1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Denville.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Township Planning Board
Mitigation Planning Committee	Yes	HMP Update Planning Committee
Environmental Board / Commission	Yes	Township Environmental Commission; Green Team/Sustainable NJ
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Nixle, Everbridge (reverse 911), and flood prone area of Denville Park has a listing of contacts for properties vulnerable to flooding.
Maintenance program to reduce risk	Yes	Department of Public Works
Mutual aid agreements	Yes	Neighboring Communities
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Township Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer
Staff with training in benefit/cost analysis	Yes	Township Engineer
Staff with training in green infrastructure	Yes	Township Engineer
Staff with education/knowledge/training in low impact development	Yes	Township Engineer
Surveyor	Yes	Township Engineer (Surveyor on Staff)
Stormwater engineer	Yes	Township Engineer
Personnel skilled or trained in GIS applications	Yes	Township Engineer
Local or state water quality professional	Yes	Township Engineer
Scientist familiar with natural hazards in local area	No	-
Emergency manager	No	-
Grant writers	Yes	Varies
Resilience Officer	No	-
Watershed planner	Yes	Township Engineer
Environmental specialist	Yes	Township Engineer
Other	Yes	Professionals trained in conducting damage assessments

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Denville.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	Morris County Flood Mitigation Program (acquisitions)

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Denville.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, public information officer
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, updated after 2020 HMP, HMP link available
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, Facebook, Twitter, Nixle, Instagram
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes: Rivers and Streams volunteer group, Environmental Commission, Green Team, Beautification, etc.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes: Emergency management holds talks with civic organizations
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes: Nixle, Everbridge (reverse 911), flood prone area of Denville Park has a listing of contacts for properties vulnerable to flooding.

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Denville.

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Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	Class 7	Recertified in 2020
Building Code Effectiveness Grading Schedule (BCEGS)	Yes		
Public Protection (Fire ISO Protection Class)	Yes		
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	12/12/2017

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Township Engineer
Who is your floodplain administrator? (name, department/position)	John Ruschke, PE, CFM – Township Engineer; Samantha Anello, PE, CFM - Engineering

Criterion	Response
Are any certified floodplain managers on staff in your jurisdiction?	Yes - John Ruschke, PE, CFM – Township Engineer; Samantha Anello, PE, CFM - Engineering
What is the date that your flood damage prevention ordinance was last amended?	
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Yes – Denville Meets and exceeds the minimum requirements. Denville requires 1-foot of freeboard and no net fill in floodplains
When was the most recent Community Assistance Visit or Community Assistance Contact?	March 31, 2011
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Preliminary DFIRM
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	The currently adopted Flood Maps are from 1985 and are outdated, however remain mostly adequate. The preliminary FEMA maps pending adoption will adequately address the flood risks and supersede the 2985 maps.
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	N/A
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	Yes, yes
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Flood insurance policies: 347 Insurance in force: \$95,075,200 Premium in force: \$754,653
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 818 Claims open or closed without payment: 96 Total payments for losses: \$17,932,583.06
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Denville that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of

Denville has significant exposure. The maps in Figure 1 and Figure 2 indicate the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Denville.

- Number of repetitive loss (RL) properties: 57
- Number of severe repetitive loss (SRL) properties: 19
- Number of RL/SRL properties that have been mitigated: 13

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Denville Fire & Rescue Dept (Valley View Co. 3)*	Fire	X	X
St. Mary's Catholic Church*	School		X
Indian Lake Dam*	Dam	X	X
Well #3 on Towpath Road, Mountain Lakes Borough*	Well	X	X
Well #4 on Towpath Road, Mountain Lakes Borough*	Well	X	X

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Denville has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Township of Denville Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Township of Denville did not report any completed actions.

2.6 CANCELLED ACTIONS

Township of Denville did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Denville Township	Bloomfield Avenue Area Pump Station	Flooding of parking lots between Bloomfield Avenue and Route 46 and adjacent areas	<ul style="list-style-type: none"> Provide a pump station near the storm sewer system discharge at Route 46. Provide a tide gate at the storm sewer outlet at Route 46. Separate the First Avenue storm sewer system from that serving Second Avenue (to prevent having Second Avenue stormwater back up in the First Avenue system). Evaluate the need for tide gates at the storm sewer outlets for Second and Third Avenues at the Rockaway River. 	Y	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Denville Township	Evaluation of Bridges and Other River Structures	Based upon the review of conditions along the Rockaway River from the Boonton Reservoir to and through the Township of Denville, only minimal benefits may be achieved in Denville through modification of the Powerville Dam and the bridge structures along the river.	<ul style="list-style-type: none"> A comprehensive master plan should be developed for appropriate sizing of the bridge openings and setting road elevations to provide maximum benefits as the bridges are eventually replaced over time. This master plan for this reach of the Rockaway River should be developed in coordination with Morris County and assistance from the USACE as may be available (see below). The following concepts and actions are recommended for further consideration and evaluation as part of the development of a long-range program: <ul style="list-style-type: none"> Modification of the Powerville Dam to reduce upstream backwater effects Modification or replacement of the following structures. <ul style="list-style-type: none"> Bush Road Bridge – for emergency access purposes Pocono Road Bridge Diamond Spring Road Bridge Savage Road Bridge (not recommended for replacement) The evaluation of the bridge modifications and replacements should include consideration of: hydraulic losses and potential benefits, individually and in combination; potential upstream effects during greater than the design storm that may be associated with raising the elevation of the bridges and approach roads; emergency access restrictions and needs under existing and proposed conditions. 	Y	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
3	Denville Township	25 & 50-Year Level Protection Implementations	Flood protections could be improved – Various Locations	Provide a tide gate at the storm sewer outlet at Route 46.	Y	Not Started
4	Denville Township	Acquisition of Properties	Flooding of residential properties	Separate the First Avenue storm sewer system from that serving Second Avenue (to prevent having Second Avenue stormwater back up in the First Avenue system).	Y	Not Started
5	Denville Township	Elevation of Properties	Problem: Flooding of repetitive loss properties	Evaluate the need for tide gates at the storm sewer outlets for Second and Third Avenues at the Rockaway River. Based on the results of the evaluation, action will be taken to elevate properties targeted.	Y	Not Started
6	Denville Township	Flood Warning System	A Township wide Flood warning systems need to be developed.	The flood warning system resources available to the Township should be reviewed and utilized. FEMA, USGS and other agencies are continuing to provide additional resources, such as online digital flood maps, weather alerts and flood depth mapping. While these specific resources are not currently available to the Township, it is anticipated that they will become available within a few years. Periodic communications with FEMA, the NJDEP and other agencies may provide information regarding the expected implementation of these resources for the Township. Recommend implementation of additional and expanded warning systems.	Y	Not Started
7	Denville Township	Annual Stream Cleaning & Maintenance	The removal of built-up debris and sediment/silt buildup within streams and rovers. Bridge openings must be maintained.	Removal of debris, sediment, and silt from the channel as well as bridge openings by volunteer groups and outside contractors when needed on an annual basis.	Y	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
8	Denville Township	Cooks Pond Dam	Dam does not have overtopping protection As a class II dam, there is the potential for significant hazard if failure or breach were to occur.	Design and construct overtopping protection	Y	Not Started
9	Denville Township	DPW Generator	The DPW does not have a back-up power source	The installation of backup power by a generator at the Denville Department of Public Works (DPW) complex	Y	Not Started
10	Denville Township	Sanitary Sewer Reinforcement	Severe storms risk damage to the sanitary sewer system	Perform a study to determine where sanitary sewer reinforcement is needed due to most imminent threats of failure or cracking. Upgrades to the system will be undertaken based on findings of the study.	Y	Not Started
11	Denville Township	Tree Removal & Maintenance Program (Policies and Procedures)	Dead, Dying and unkept trees create hazards during large storms. Dangers include fallen trees/tree limbs, property damage, damage to power lines	A policy and procedures manual for tree removal would aid in being pro-active rather than reactive to the hazards of downed trees and limbs	Y	Not Started
12	Denville Township	Catch Basin & General Stormwater Facility Maintenance	Catch basins and stormwater facilities can become clogged and not function as designed	Maintain, clean, and inspect Catch Basin & Stormwater Facilities	Y	Not Started
13	Denville Township	Critical Facilities Outreach	The Township has several critical facilities that are located in the 100-year floodplain. Well #3 and Well #4 on Towpath Road	The FPA will conduct outreach to the critical facility managers to discuss hazard risk and potential mitigation actions.	Y	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			are owned by Mountain Lakes Borough.			
14	Denville Township	Denville Township Building Code Update	Building Codes need to be periodically reviewed for updates to keep up with changing regulations and reduce flood risks	Perform periodical building code reviews and make updates as required	Y	In Progress
15	Denville Township	Review & update the Denville Township Flood Hazard Area Ordinance	The Denville Township Flood Hazard Area Ordinance should be consistent with FEMA requirements. Updating is required periodically and will be required when FEMA issues the new digital mapping to replace the prior paper maps	The Township anticipates reviewing and updating the Flood Hazard Area Ordinance upon the adoption of the new FEMA maps to replace the prior maps. Status is ongoing and the adoption has not been scheduled. This will improve regulatory and enforcement capabilities to manage flood risk.	Y	In Progress
16	Denville Township	Develop All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Need for a All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Create and continuously update All Hazards Public Education & Outreach program for Hazard Mitigation & Preparedness	Y	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
17	Denville Township	GIS Mapping of Catch Basin & General Stormwater Facilities	The location of all catch basins and stormwater facilities, both private and public, need to be identified, mapped, and located for planning and maintenance	Create a GIS mapping system of catch basins, stormwater facilities, basins, culverts, and other drainage features and structures. This must be complete by the end of 2025 per NJDEP MS4 Permit. \$25,000 grant from NJDEP for mapping, obtained.	Y	In Progress
18	Denville Township	Dredging of Indian Lake	This is to address severe storm and flooding issues by creating a regional detention basin within the lake	This creates additional storage volume for stormwater and flood waters	N	
19	Denville Township	Dredging of Estling Lake	This is to address severe storm and flooding issues by creating a regional detention basin within the lake	This creates additional storage volume for stormwater and flood waters	N	

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather		Goal 1		<u>Township Administrator,</u> <u>Township Engineer</u>		Township funding, US EPA	High
2	Flood	Severe Weather, Severe Winter Weather	Goal 1		<u>Township Administrator,</u> <u>Township Engineer</u>		Township	High
3	Severe Weather		Goal 4		<u>Township Administrator,</u> <u>Township Engineer</u>		FEMA HMGP	High
4	Severe Weather		Goal 5		<u>Township Administrator,</u> <u>Township Engineer</u>		Township	High
5	Severe Weather		Goal 5		<u>Township Administrator,</u> <u>Township Engineer</u>		FEMA and local match	High
6	Severe Weather		Goal 1		<u>Township Administrator,</u> <u>Township Engineer</u>		Township	High
7	Severe Weather		Goal 1		<u>Township Administrator,</u> <u>Township Engineer</u>		Township & Capital Improvements	High

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
8	Severe Weather		Goal 1		<u>Township Administrator,</u> <u>Township Engineer</u>		Township & Capital Improvements	High
9	Severe Weather		Goal 1		<u>Township Administrator,</u> <u>Township Engineer, DPW Supervisor</u>		Township Administrator, Township Engineer, DPW Supervisor	High
10	Severe Weather		Goal 4		<u>Township Administrator,</u> <u>Township Engineer</u>		Township	High
11	Severe Weather		Goal 4		<u>Township Administrator,</u>		Township	High
12	Severe Weather		Goal 1		<u>Township Administrator,</u> <u>DPW Supervisor</u>		Township	High
13	Severe Weather		Goal 2		<u>Township Administrator,</u> <u>Township Engineer, DPW Supervisor</u>		Township, PDM	High
14	Flood	Severe Weather	Goal 4		<u>Construction Code Official</u>		N/A – Staff Time	Low
15	Flood	Severe Winter Weather, Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve capabilities, coordination at Municipal level

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
16	Severe Weather	ALL Hazards	Goal 2	Goal 1; Goal 5	<u>Engineering</u>	Administration	Operating budget	Improve education and outreach
17	Severe Weather	Severe Winter Weather, Flood, Drought	Goal 3	Goal 1; Goal 5	<u>Engineering</u>	Administration	NJDEP Grant funding, Capital Budget	Improved data collection, reduction in hazard impacts; identify hazards
18	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget, grant funding	Reduction in hazard impacts
19	Flood	Severe Weather	Goal 4	Goal 1; Goal 5	<u>Engineering</u>	Administration	Capital Budget, grant funding	Reduction in hazard impacts

2.7.3 STRATEGY RAKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$250k-\$500k	3-5 years	1	2	2	2	2	9	Medium
2	\$250k-\$500k	3-5 years	2	2	2	2	2	10	Medium
3	\$250k-\$500k	3-5 years	2	2	2	2	2	10	Medium
4	\$250k-\$500k	3-5 years	1	3	3	3	3	13	High

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
5	\$250k-\$500k	3-5 years	1	2	2	2	2	9	Medium
6	Under \$50k	1-3 years	2	1	1	2	2	8	Low
7	\$50k-250k	1-3 years	1	3	2	2	2	10	Medium
8	\$500k-\$750k	3-5 years	3	3	2	3	2	13	High
9	\$250k-\$500k	1-3 years	2	1	1	2	2	8	Low
10	Under \$50k	1-3 years	1	1	1	1	1	5	Low
11	Under \$50k	1-3 years	1	1	1	1	2	6	Low
12	\$250k-\$500k	Under 1 year	1	2	2	2	2	9	Medium
13	\$250k-\$500k	Under 1 year	1	2	2	3	3	11	Medium
14	\$250k-\$500k	Under 1 year	1	2	1	1	1	6	Medium
15	Under \$50k	Under 1 year	1	3	3	3	3	13	High
16	Under \$50k	1-3 years	3	3	2	1	2	11	Medium
17	Under \$50k	1-3 years	1	2	3	3	3	12	Medium
18	Over \$1M	3-5 years	3	3	3	3	2	14	High
19	Over \$1M	3-5 years	3	3	3	3	2	14	High

Figure 1: Township of Denville Hazard Area Extent and Location Map 1

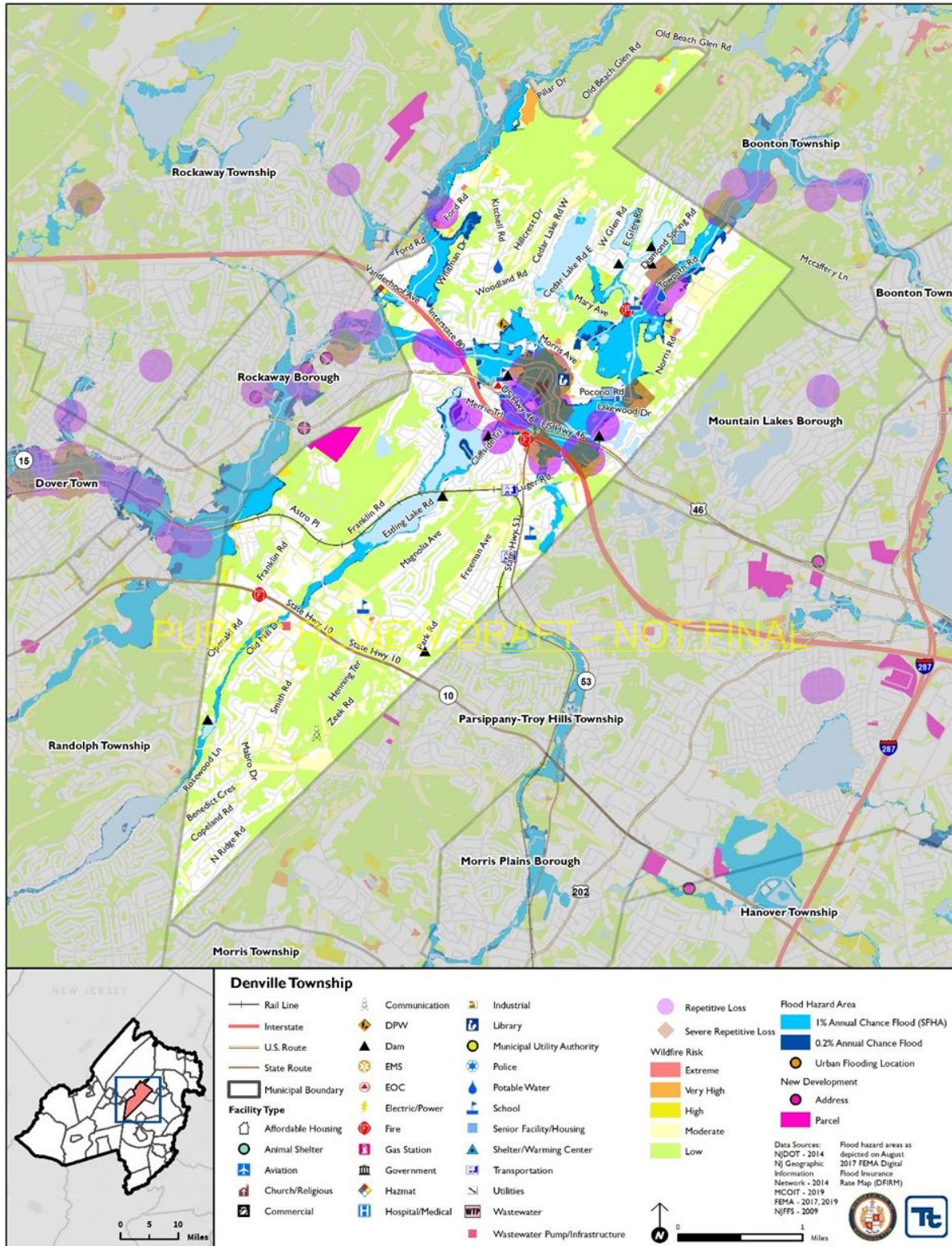
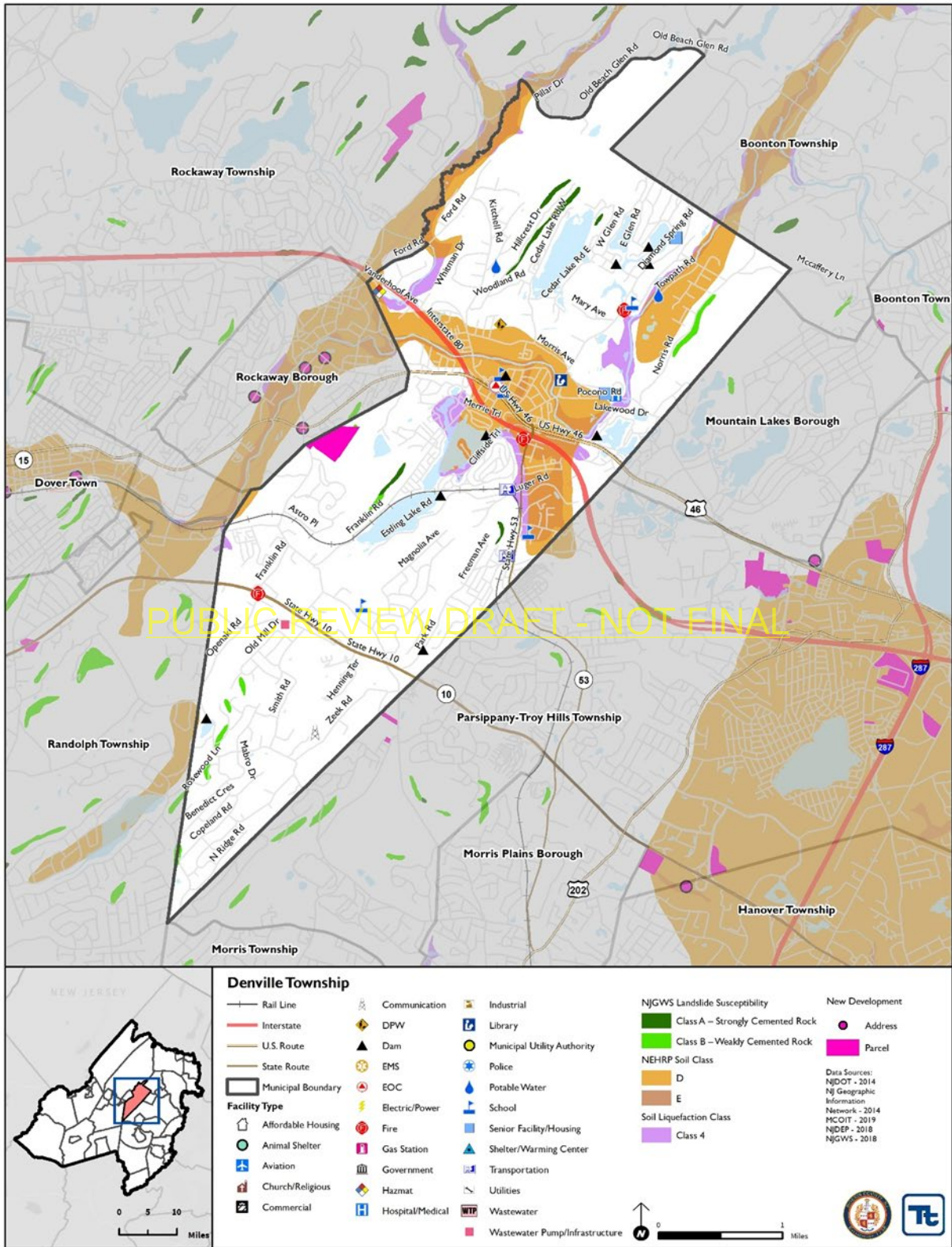


Figure 2: Township of Denville Hazard Area Extent and Location Map 2



APPENDIX 22: TOWNSHIP OF EAST HANOVER COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of East Hanover and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Updated by Construction Code Official. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Yes, if have planning board	No	No
Comment: State permissive on local level. [note local ordinance # and date of adoption]. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Updated by Zoning Official, Chapter 95, Land Use and Zoning.					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Updated by Zoning Official, Chapter 95, Land Use and Zoning.					
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Updated 5/16/2012.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Updated by the Division of Consumer Affairs, N.J.A.C. 13:43A-29.1.					
Growth Management	Yes	Local and State	Yes, if have planning board	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Discussed in the Master Plan.					
Shoreline Development	No	-	-	-	-
Comment:					
Site Plan Review	Yes	Local	Yes, if have planning board	No	No
Comment: 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 freeholders 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. Updated by Zoning Official. Chapter 95, Land Use and Zoning.					
Environmental Protection	Yes	Local	Yes	No	No
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	No	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Part II, Flood Damage Prevention Chapter 87.					
Wellhead Protection	Yes	Local	No	No	No
Comment: 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)). Part II Land Use and Zoning Chapter 95. 2004					
Emergency Management	Yes	Local	Yes		
Comment: 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	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other: NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, and Local	Yes/No		
Comment: Updated by Construction Code Official. Chapter 87, Flood Damage Protection Plan.					
Other: NFIP Freeboard	Yes	State and Local	Yes/No		
Comment: Updated by Construction Code Official. Chapter 87, Flood Damage and Prevention Plan.					
Other: Municipal Separate Storm Sewer System (MS4)	Yes	State	Yes/No		
Comment: Updated by Engineering, DPW.					
Planning Documents					
Master Plan	Yes	Local	Municipal: Yes County: Yes		
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Updated by Land Use Planning Board (LUPB). 2005 Master Plan, in process of updating.					
Capital Improvement Plan	Yes	Local	Allowed		
Comment: 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 by Administration, 2014.					
Disaster Debris Management Plan	No	-	-	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No		
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Updated 7/10/2012 by Floodplain Administrator; OEM working with all departments. Chapter 87, Flood Damage Protection Plan. Flood Acquisition Plan (with Morris County).					
Stormwater Management Plan	Yes	Local	Yes		
Comment: 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). Stormwater Management Plan, May 2018.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes		
Comment: 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). Stormwater Pollution Prevention Plan, May 2019.					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	No	-	-	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	Yes	Local	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.). Updated 2005 by LUPB. Economic Element within 2005 Master Plan.					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	No	-	-	-	-
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	Yes	Local	No		
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4). Updated 2005 by LUPB. Circulation Element within 2005 Master Plan.					
Agriculture Plan	No	-	-	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	-	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	-	-	-
Comment:					
Business Development Plan	No	-	-	-	-
Comment:					
Other: Shade Tree commission	Yes	Shade tree commission	Allowed	No	No
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958.					
Other - Historic Preservation	Yes	Shade tree commission	Allowed	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data. Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.					
Other: Open Space Plan	Yes	Local	Allowed	No	No
Comment: Updated by LUPB. Open Space and Recreation Plan.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other: Watershed Management or Protection Plan	Yes	Local, County	Yes	No	No
Comment: Updated by LUPB. Chapter 162, Wetland Protection Plan ERI-Focusing on Protection of Water Resources of East Hanover.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local and County	Yes	No	No
Comment: 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. Updated by LUPB.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	-	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	No	No
Comment: Separate annex with EOP. Reviewed annually, updated every 5 years.					
Public Health Plan	Yes	Local Public Health	No	No	No
Comment: Separate annex within EOP. Reviewed annually and updated every 5 years.					
Other: School Crisis Management Plan including Active Shooter Plan	Yes	Local	Allowed	No	No
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning Board and Engineer
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No 90% built out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of East Hanover.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use Planning Board
Mitigation Planning Committee	Yes	Municipal Officials
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	Yes	SID-Special Improvement District/EH Community Partnership
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	SwiftReach
Maintenance program to reduce risk	Yes	Dept. of Public Works
Mutual aid agreements	Yes	Fire/Police/Health
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering Consultant- Colliers Engineering & Design
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering Consultant- Colliers Engineering & Design
Planners or engineers with an understanding of natural hazards	Yes	Engineering Consultant- Colliers Engineering & Design
Staff with training in benefit/cost analysis	Yes	OEM
Staff with training in green infrastructure	Yes	Engineering Consultant- Colliers Engineering & Design
Staff with education/knowledge/training in low impact development	Yes	Engineering Consultant- Colliers Engineering & Design
Surveyor	Yes	Engineering Consultant- Colliers Engineering & Design
Stormwater engineer	Yes	Engineering Consultant- Colliers Engineering & Design
Personnel skilled or trained in GIS applications	Yes	Engineering Consultant- Colliers Engineering & Design
Local or state water quality professional	Yes	Engineering Consultant- Colliers Engineering & Design
Scientist familiar with natural hazards in local area	Yes	Engineering Consultant- Colliers Engineering & Design
Emergency manager	Yes	OEM
Grant writers	Yes	Engineering Consultant- Colliers Engineering & Design
Resilience Officer	Yes	Engineering Consultant- Colliers Engineering & Design
Watershed planner	Yes	Engineering Consultant- Colliers Engineering & Design
Environmental specialist	Yes	Police and Fire
Drone Deployment	Yes	Engineering Consultant- Colliers Engineering & Design
Water Rescue Operation	Yes	OEM

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of East Hanover.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes

Financial Resource	Accessible or Eligible to Use?
Authority to Levy Taxes for Specific Purposes	Yes- open space
User Fees for Water, Sewer, Gas or Electric Service	Yes water, sewer
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
State-Sponsored Grant Programs	HMGP
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of East Hanover.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes OEM website provides info and link to County HMP
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Environmental Commission, Planning Board
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes SwiftReach, utility and tax bill mailings
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes SwiftReach, audible sirens, marquis on Ridgedale Avenue at the Municipal Building and Middle School

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of East Hanover.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	4	6/24/2019
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-

Program	Participating?	Classification	Date Classified
Sustainable Jersey	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (department/position)	Consulting Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	Consulting Engineer
Does your floodplain management program meet or exceed minimum requirements?	Meets
• If exceeds, in what ways?	n/a
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
• If so, state what they are.	n/a
Are any RiskMAP projects currently underway in your jurisdiction?	Yes
• If so, state what they are.	Reviewing FEMA maps from 2018
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
• If no, state why.	Updated maps do address
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
• If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)?	No
• If yes, is your jurisdiction interested in improving its CRS Classification?	n/a
• If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?	154
• What is the insurance in force?	\$44,803,100.00
• What is the premium in force?	\$206,089.00
How many total loss claims have been filed in your jurisdiction?	102
• How many claims are still open or were closed without payment?	0 Open, 20 Closed without payment
• What were the total payments for losses?	\$1,716,703.82
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of East Hanover that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of East Hanover has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of East Hanover.

- Number of repetitive loss (RL) properties: 7
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Givaudan Roure Flavors 1 Merry Lane	HAZMAT	x	x
East Hanover Township DPW* 1 Melanie Lane	DPW	x	x

Source: Morris County, 2019

* Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of East Hanover has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township increased the ranking of dam failure from Low to Medium hazard of concern.

Table 9: Township of East Hanover Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Township of East Hanover reported no completed actions.

2.6 CANCELLED ACTIONS

Township of East Hanover reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	East Hanover Township	Provide generated backup power at Ridgedale Middle School	Ridgedale Middle School is a critical facility and lifeline that serves as a primary shelter.	Upgrade portable generator and temporary hookup with permanent generator. In 2024 East Hanover Board of Education will be hoing out to bid for an emergency generator.	Yes	Not Started
2	East Hanover Township	Provide generated backup power at Frank J Smith School	Frank J Smith School is a critical facility and lifeline that serves as a primary shelter.	Upgrade portable generator and temporary hookup with permanent generator. In 2024 East Hanover Board of Education will be going out to bid for an emergency generator.	No	New
3	East Hanover Township	Provide generated backup power at East Hanover Twp Volunteer Fire Department	East Hanover Twp Volunteer Fire Department Station 2 is a critical facility and lifeline without backup power.	Design, purchase, and install generator to enable operations to continue without disruption during significant events. East Hanover	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				Township is currently in a holding pattern for Firehouse 2 for future plans of renovation, at that time we will install emergency backup power.		
4	East Hanover Township	Provide generated backup power at Central Elementary School	Central Elementary School is a shelter facility and lifeline without backup power.	Work with school district to design, purchase and install permanent, stationary generator. In 2024 East Hanover Board of Education will be hoing out to bid for an emergency generator.	Yes	Not Started
5	East Hanover Township	Provide generated backup power at East Hanover Senior Citizens Center	East Hanover Senior Citizens Center is a critical facility without backup power.	Design, purchase, and install generator. The Township of East Hanover is working on the budget to include a transfer switch at our senior citizens building hopefully we'll be installed in 2024	Yes	Not Started
6	East Hanover Township	Provide generated backup power at Camp Hope	Camp Hope is a critical facility and lifeline that serves as a secondary shelter to hold 150 with a kitchen but without backup power.	Design, purchase, and install generator. The Township of East Hanover has installed a transfer switch at camp hope so we could provide power with our portable emergency generators	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
7	East Hanover Township	DPW Flood Protection	East Hanover Township DPW is a critical facility identified as a lifeline in the floodplain.	Evaluate facility for flood risk and provide recommended mitigation actions. The DPW yard is a critical facility that supports the community and during heavy rain events (twice per year) Melanie Lane floods and the Whippany River banks overflow making access to DPW yard limited. This property also houses a Township well for drinking water. Township is working with a Federal Grant and USDA to desnag the Whippany River in order to help mitigate flooding effects.	Yes	In Progress
8	East Hanover Township	Support elevation/acquisition/mitigation of RL/SRL properties	Properties on Dixon Lane (4), Brentwood (2), Mt. Pleasant (1) and other areas are prone to flooding	Evaluate stormwater drainage on River Road and determine upgrade options. Flooding is periodic about 3-4 times per year during heavy rainfall which then cause the Rivers to rise. Township is working with a Federal Grant and USDA to desnag the Whippany River in order to help mitigate flooding effects. River Road storm sewer is being assessed and in need of potential upgrade to alleviate roadway flooding that occurred 4 times last year.	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Winter Weather	Severe Weather	Goal 1		<u>Engineering, Schools</u>		HMGP, PDM	High
2	Severe Winter Weather	Severe Weather	Goal 1		-			
3	Severe Winter Weather	Severe Weather	Goal 1		<u>Engineering</u>		Capital budget, HMGP	High
4	Severe Winter Weather	Severe Weather	Goal 1		<u>Engineering</u>		Capital budget, HMGP	High
5	Severe Winter Weather	Severe Weather	Goal 1		<u>Engineering, School Administration</u>		Capital budget, HMGP	High
6	Severe Winter Weather	Severe Weather	Goal 1		<u>Engineering</u>		Capital budget, HMGP	High
7	Flood	Severe Winter Weather	Goal 3	Goal 1	<u>Engineering</u>		HMGP, FMA, PDM	High
8	Flood		Goal 3	Goal 1	<u>Engineering</u>		HMGP, PDM	High

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k - \$250k	1-3 years	2	2	2	2	3	11	Medium
2	\$50k - \$250k	1-3 years	2	2	2	2	2	10	Medium
3	\$50k - \$250k	1-3 years	2	2	2	2	3	11	Medium
4	\$50k - \$250k	1-3 years	2	2	2	2	3	11	Medium
5	\$50k - \$250k	1-3 years	2	2	2	2	2	10	Medium
6	\$50k - \$250k	1-3 years	2	2	2	2	2	10	Medium
7	Under \$50k	3-5 years	2	3	2	2	2	11	Medium
8	Under \$50k	3-5 years	1	3	2	2	2	10	Medium

Figure 1: Township of East Hanover Hazard Area Extent and Location Map 1

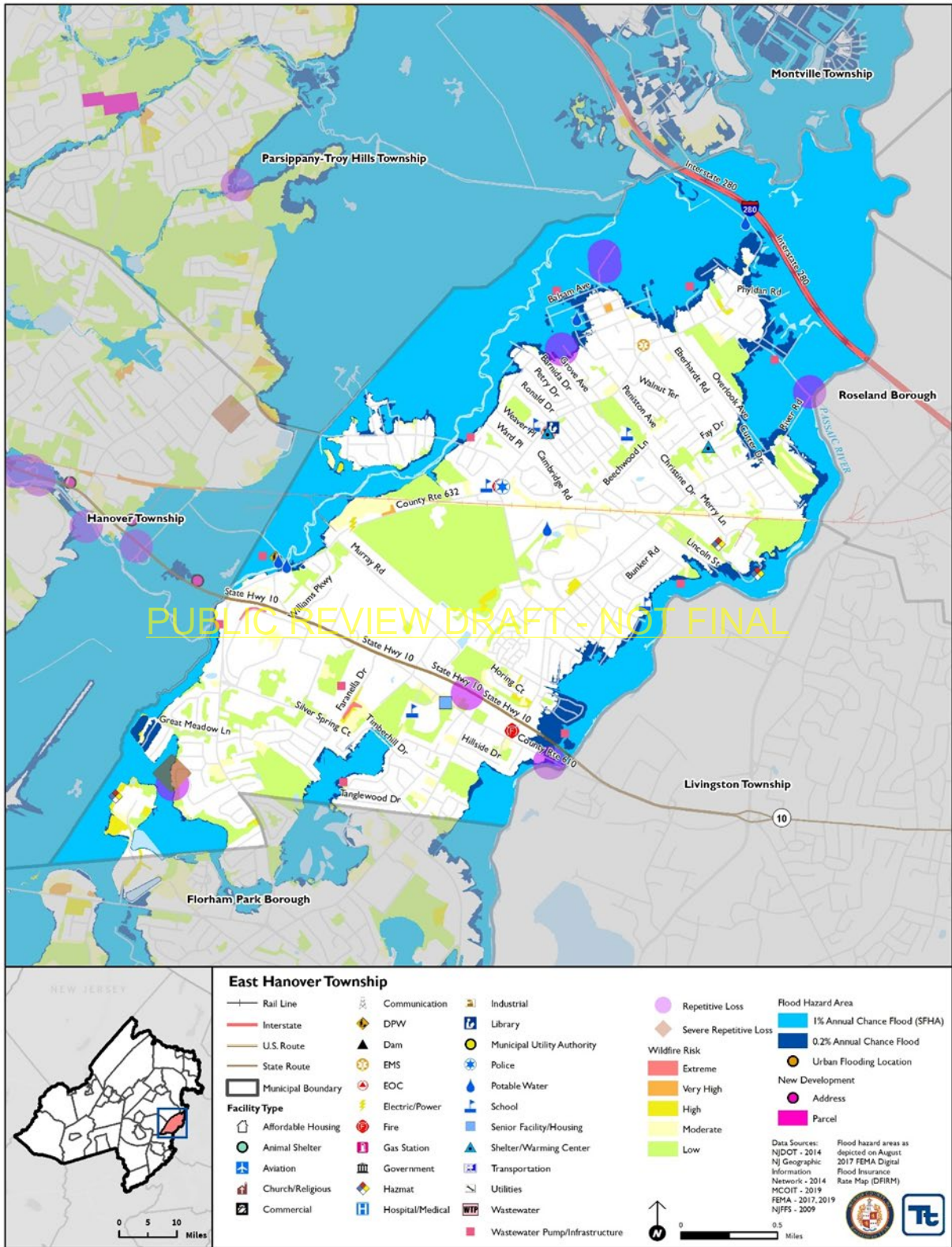
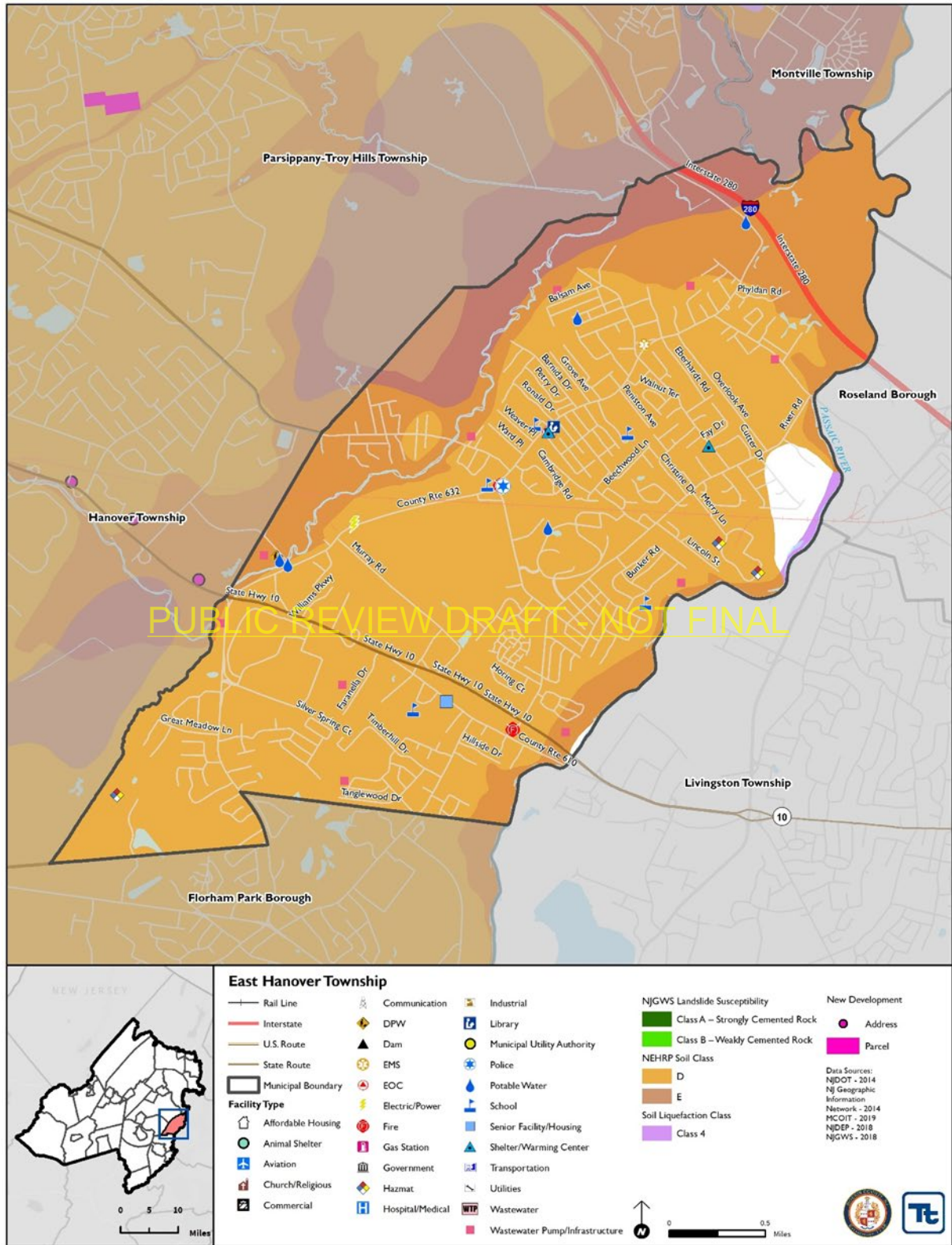


Figure 2: Township of East Hanover Hazard Area Extent and Location Map 2



APPENDIX 23: TOWNSHIP OF HARDING COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Harding and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local and State	Yes	No	No
Comment: State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by Planning Board, Article XXII-225-112.					
Subdivisions	Yes	Local	Yes	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Enforced by Planning Board, Article VXIII-225-60.					
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Planning Board, 225-181 .					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Enforced by the Division of Consumer Affairs, N.J.A.C. 13:45A-29.1.					
Growth Management	No	Local and State	Yes, if have planning board	-	-
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	No	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	No	No
Comment: 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 freeholders 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. Enforced by Planning Board, Article XVI-225-77 & 90.					
Environmental Protection	Yes	State, County, Local	No	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Local code Section 225-110 Great Swamp Watershed Environmental Protection.					
Flood Damage Prevention	Yes	Federal, State, and Local	No	No	Yes
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Enforced by Planning Board, 225-100. Recommend updating administrative agency and map designation. 2020-Harding-004.					
Wellhead Protection	No	-	No	-	-
Comment: 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)).					
Emergency Management	No	-	No	-	-
Comment: 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	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other: Steep Slopes	Yes	Local	No	No	No
Comment: Chapter 225, Part 2, Article XVIII Steep Slopes.					
Planning Documents					
Master Plan	Yes	Local	Yes	No	No
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); Enforced by Planning Board. Adopted December 17, 1984 with amendments through November 27, 2017.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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. Enforced by Town Committee, July 2014.					
Disaster Debris Management Plan	Yes	Local	Yes	No	No
Comment: Annex to Emergency Management Plan					
Floodplain or Watershed Plan	Yes	Local	No	No	No
Comment: Great Swamp Regional Watershed Plan, Silver Brook Watershed Plan, Passaic River Watershed Plan					
Stormwater Management Plan	Yes	Local	Yes	No	No
Comment: 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). Enforced by Planning Board, Master Plan Stormwater Management Plan Element July 25, 2005.					
Stormwater Pollution Prevention Plan	No	Local	No	-	-
Comment: NJDEP Storm Water Management Rules do not require Tier B municipalities to develop a Stormwater Pollution Prevention Plan.					
Urban Water Management Plan	No	-	No	-	-
Comment: Not Applicable – State Planning Area 5					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Shade Tree Advisory Committee	Yes	Local	Allowed	No	No
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958.					
Other - Historic Preservation Commission	Yes	Local	Allowed	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	-
Comment: 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. Harding Township Emergency Guide. October 2018. http://www.hardingnj.org/filestorage/75/Harding_Twp_NJ_OEM_Booklet_2018_WEB.pdf					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local	No	No	-
Comment: Enforced by OEMC, EOP. Yes, 12/3/2013					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Zoning Officer/Planning Board
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes Included in the County's wastewater management plan.

PUBLIC REVIEW DRAFT - NOT FINAL

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Harding.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	Township Engineer
Environmental Board / Commission	Yes	Environmental Commission, Shade Tree Advisory Committee, Historic Preservation Commission
Open Space Board / Committee	Yes	Land Trust
Economic Development Commission / Committee	Yes	Planning Board
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	AlertHarding; Outdoor Warning
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Police
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineer/Planning Board Contractor

Staff/Personnel Resource	Available?	Department/Agency/Position
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Code Official
Planners or engineers with an understanding of natural hazards	Yes	Engineering
Staff with training in benefit/cost analysis	Yes	CFO
Staff with training in green infrastructure	Yes	Engineering
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	Yes	Engineering
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	IT
Local or state water quality professional	Yes	New Jersey Highlands Council
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEMC
Watershed planner	Yes	Engineer
Environmental specialist	Yes	Engineer/Health
Grant writers	Yes	Business Administrator and Chief of Police/OEMC
Resilience Officer	No	-
Other – Damage Assessment	Yes	Township Engineer

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Harding.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes – Open Space
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Hazard Mitigation Grant Program
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Harding.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – Links to Morris County OEM
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Township: Facebook PD: Facebook, Twitter, Instagram
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes – OEM Council
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes – Township Webpage/Social Media
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes – Social Media, Electronic Messaging system, Township webpage

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Harding.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	Class 3	2018
Public Protection (Fire ISO Protection Class)	Yes	Class 5	2012
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Zoning and Engineering
Who is your floodplain administrator? (name, department/position)	Harding Township Planning Board – Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	11-28-2001

Criterion	Response
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	02-26-1993
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Township was included in the Hackensack-Passaic Watershed, 02030103 Flood Risk Report. Morris County FEMA maps are preliminary.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	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 n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	42 \$13,667,700 \$59,725
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	13 3 \$240,098
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Harding that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Harding has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Harding.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

No critical facilities are located in the FEMA 1% and 0.2% Flood Hazard Area. [Table 8: Potential Flood Losses to Critical](#)

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Harding has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township of Harding increased the ranking for wildfire from Low to Medium.

Table 9: Township of Harding Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Medium
Geological Hazards	Low		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Township of Harding reported no completed actions.

2.6 CANCELLED ACTIONS

The following action was noted as cancelled:

- **Action:** Repurpose municipally owned facility to accommodate OEM Center. This action provides a properly equipped OEM facility in the event of activation and coordinated resource deployment. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Harding	New Vernon Area Flooding	Flooding occurs to the following streets: Baileys Mill Road, Long Hill Road, and Lees Hill Road.	Perform engineering study to better understand the issues and potential fixes, then use the study to determine the mitigation actions for Baileys Mill Road. County to mitigate Long Hill and Lees Hill Roads.	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 3		<u>Engineering,</u> <u>Administration</u>		HMGP, PDM, BRIC, municipal budget	High

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	3-5 years	2	2	2	3	2	11	Medium

Figure 1: Township of Harding Hazard Area Extent and Location Map 1

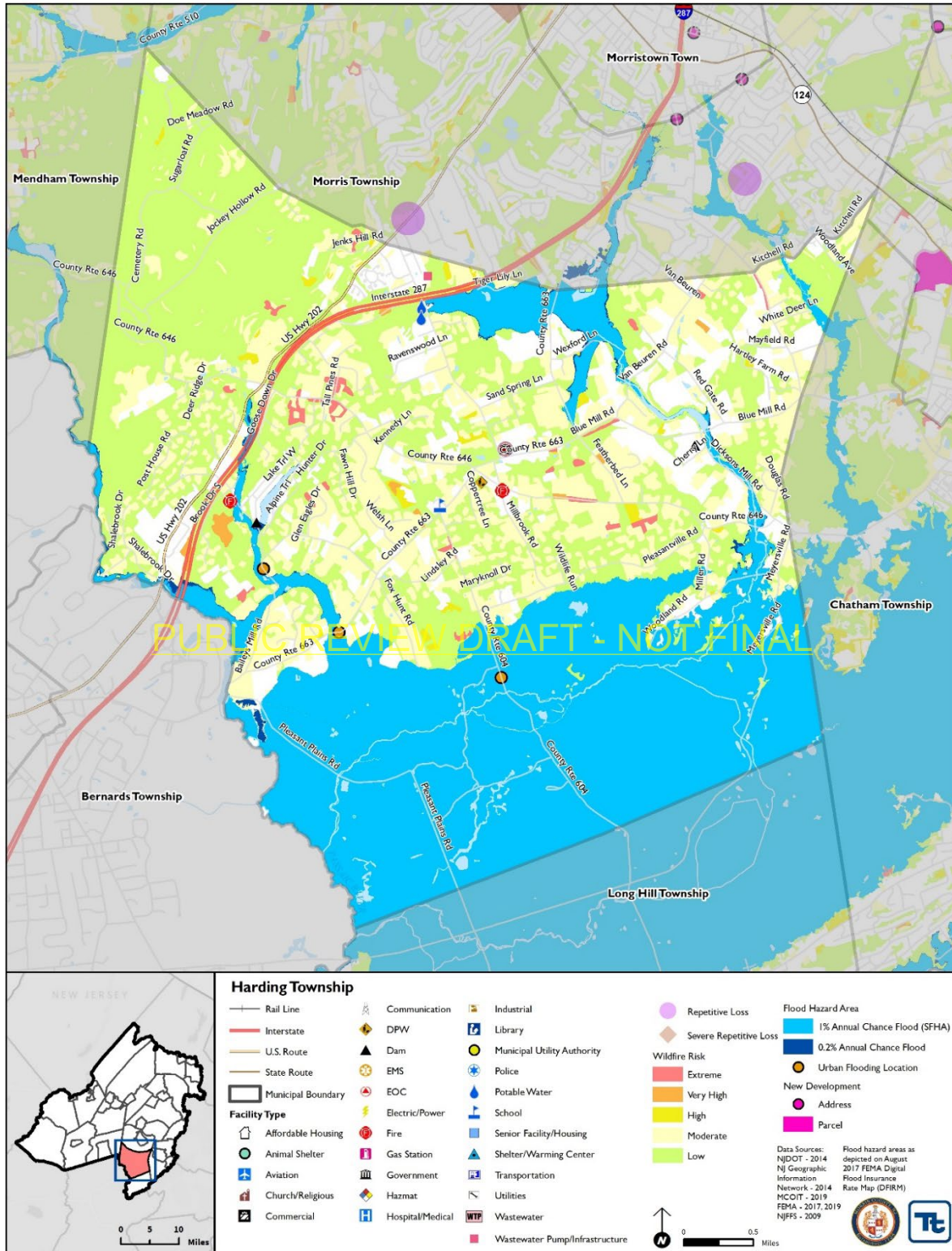
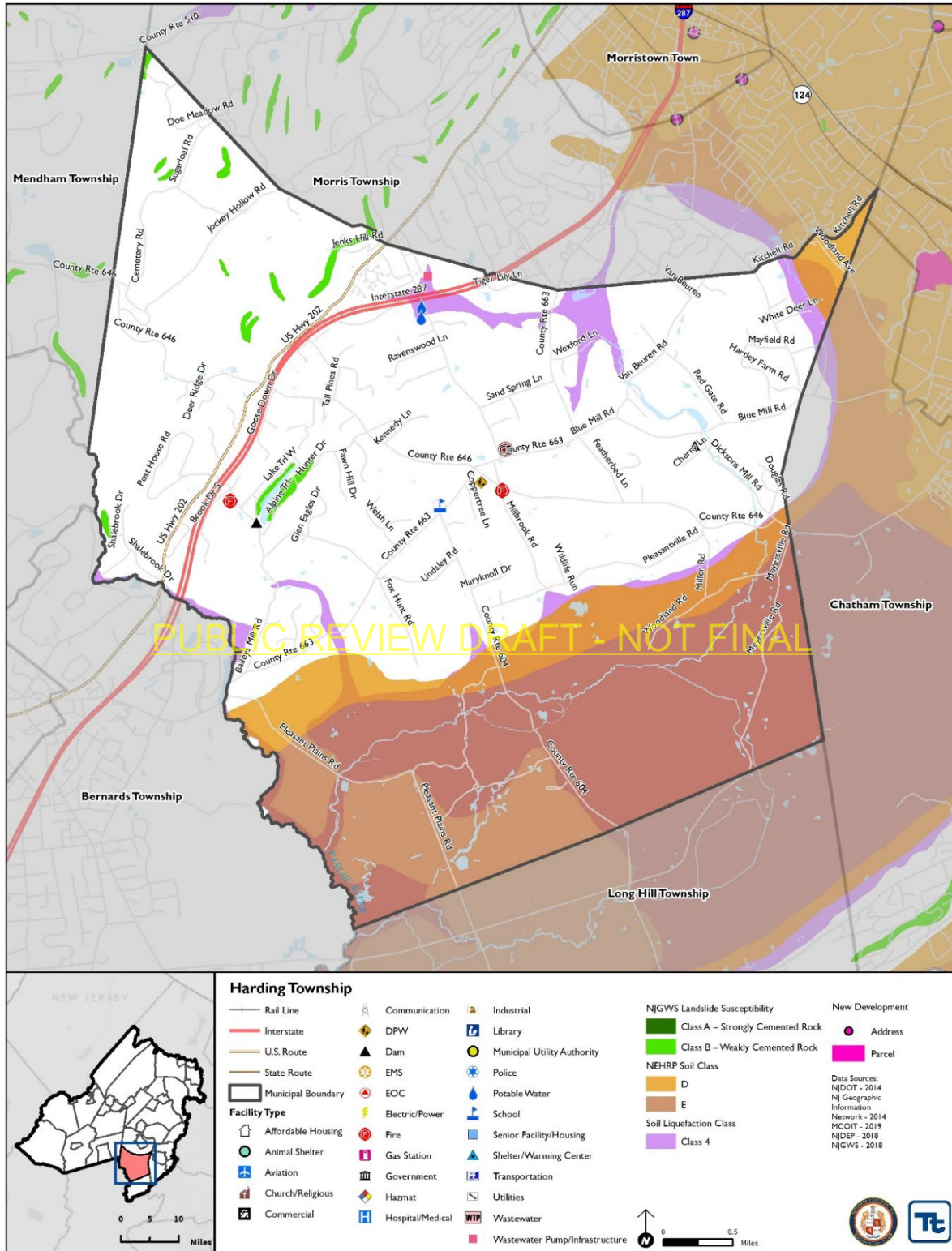


Figure 2: Township of Harding Hazard Area Extent and Location Map 2



APPENDIX 24: TOWNSHIP OF JEFFERSON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Jefferson and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
PUBLIC REVIEW DRAFT - NOT FINAL					
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	-	-
Comment: State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local, Zoning Off	Yes	Yes	-
Comment: Chapter 490 (Zoning) adopted by the Township Council on 7/10/1996 and amended where applicable. The Zoning Ordinance is adopted pursuant to the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq. The purpose of this code is to encourage municipal action to guide the appropriate use or development of all lands in the Township, in a manner which will promote the public health, safety, morals and general welfare. The Township has several zoning districts that include overlays and regulation zones.					
Subdivisions	Yes	Local, Planning Board	Yes	Yes	-
Comment: Chapter 435 (Subdivision of Land) – adopted by Township Council on 6/15/1959 and amended where applicable. The purpose of this code is to provide rules, regulations and standards to guide land subdivision in Jefferson Township 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.					
Stormwater Management	Yes	Federal, State, Local,	Yes	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
		Construction Official			
Comment: Chapter 439 (Surface Water Management) – adopted by Township Council on 6/5/1991 and amended where applicable. The purpose of the chapter is to establish minimum stormwater management requirements and controls for major development. Flood control, groundwater recharge, and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1					
Growth Management	Yes	Local & State, Planning Bd	Yes	-	-
Comment: Art XI Highlands Conformance Guide					
Site Plan Review	Yes	Local & State, Planning Bd	Yes	Yes	-
Comment: <ul style="list-style-type: none"> 490-58 Highlands Area Exemption; the Land Use Board is involved in reviewing major subdivisions and site plans and finalizing the land use regulations that will support the zoning ordinances of the community. Subdivision review is required whenever any lot, tract or parcel of land is divided into two or more lots, tracts, and parcels. Site plan reviews are required when someone proposes development for anything other than an individual lot application for detached one or two dwelling units. Chapter 490 (Zoning) - Prior to the issuance of a permit for any development, other than those exemptions listed herein, and as a condition for the issuance of any such permit for development, a site plan of the proposed development must be submitted to and approved by the Land Use Board, in accordance with the requirements of the site plan regulations. All single- and two-family dwellings and their permitted accessory structures shall be exempt from site plan review. 					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Environmental Protection	No	-	-	-	-
Comment:					
Flood Damage Prevention	Yes	Federal, State, Local, Construction Official	Yes	Yes	-
Comment: Chapter 262 (Flood Damage Prevention) – adopted by the Township Council on 9/7/1983 and amended where applicable. The purpose of this chapter is to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions. The Township requires a development permit before construction or development begins within any SFHA. The Construction Official administers and implements the flood damage prevention chapter and grants or denies development permit applications. Any residential construction (new or substantial improvements) for structures in the floodplain must have the lowest floor elevated to or above the base flood elevation. Any non-residential construction (new or substantial improvement) must have their lowest floor elevated to the level of the base flood.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	No	-	-	-	-
Comment:					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comprehensive / Master Plan	Yes	Local, Plan Board	Yes	Yes	-
Comment: Main Plan 1978, Updated 2014; reexamined in 2019. The Master Plan is a comprehensive, long-range plan intended to guide the growth and development of a community. It contains elements that provide for: Community Facilities; Future Economic Development; Housing; Land Use; Open Space; Recreation; and Transportation. A primary element of the Master Plan is the Land Use Plan. This element serves as the basis for development of the Township's zoning ordinances, a set of local regulations that provides for controls on how the land in Jefferson is developed, occupied or utilized. The Land Use Plan is also implemented through a zoning map of zone categories as recommended in the Land Use Plan. Some areas in the Township have been upgraded in zoning protections due to extensive wetlands, environmental issues and/or lack of sewer service in area.					
Capital Improvement Plan	Yes	Local, Administration	No	-	-
Comment: Capital improvement funds are included in the annual budget. The 2020 budget included line items for road improvements and project engineering. It also includes improvements to the water and sewer utilities.					
Disaster Debris Management Plan	No	-	-	-	-
Comment: While the Township does not have a formal written plan, the Township does have NJDEP approval to use certain areas to hold debris.					
Floodplain or Watershed Plan	Yes	Local, County, Township Engineer	No	Yes	-
Comment: Part of Open Space Recreation Plan (April 2001) – several goals of this plan include preserving and enhancing environmentally sensitive areas such as steep slopes, stream corridors, and woodlands from development and ensure compliance with Stat restrictions pertaining to wetlands, wetland transitional buffer areas, and floodplains.					
Stormwater Management Plan	Yes	Local, Township Engineer, DPW	Yes	-	-
Comment: Chapter 439, Jefferson Township Stormwater Management Plan, March 2006					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Pollution Prevention Plan	Yes	Federal, State, Local, Construction Official	Yes	-	-
Comment: Part of the Stormwater Management Plan					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	No	-	-	-	-
Comment:					
Economic Development Plan	Yes	Local, Mayor/Admin	No	-	-
Comment: Updated July 2014 – Planning Board and Town Council working together with Highlands Commission; incorporated with the Master Plan					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	Yes		No	-	-
Comment:					
Transportation Plan	Yes	Local, BOE, Trans	No	-	-
Comment: EOP Updated 2012					
Agriculture Plan	No	-	-	-	-
Comment:					
Climate Action Plan	No	-	-	-	-
Comment:					
Tourism Plan	No	Local	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Economic Development Commission is starting to become active again; will look into seeing how to get people back to the area					
Business Development Plan	Yes	Local	No	-	-
Comment: re-development plans; economic development commission					
Other	Yes	Local, County	No	-	-
Comment: <ul style="list-style-type: none">Open Space Plan, 2014 Open Space InventoryStream Corridor Management Plan, Chapter 370 Riparian zones					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local, OEM	Yes	-	-
Comment: EOP updated 2012					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local, OEM/Admin	No	-	-
Comment: EOP updated 2012					
Continuity of Operations Plan	Yes	Local, OEM/Admin	No	-	-
Comment: Part of the EOP					
Public Health Plan	Yes	Local	No	-	-
Comment: Public Health Department – shared serviced through Rockaway Twp					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes. Engineering Department can issue development permits; however, the Township does have New Jersey Highlands restrictions
Does your jurisdiction have the ability to track permits by hazard area?	No, but the Township has the capability to do so. They recently obtained Spatial Logic Data which will be available for the public on the municipal website.
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes - have the ability to map out land available for development

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Jefferson.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use Board
Mitigation Planning Committee	Yes	OEM/Township Engineer/Admin/LEPC
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	Yes	Land Use Board
Economic Development Commission / Committee	Yes	Economic Development Advisory Board
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	County Rave System, fire sirens
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Surrounding municipalities, Morris County, UASI
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning/Zoning Bds/Council/Mayor
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer/Building/Construction Officials
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer/Building/Construction Officials
Staff with training in benefit/cost analysis	Yes	Township Engineer/Admin
Staff with training in green infrastructure	No	
Staff with education/knowledge/training in low impact development	No	
Surveyor	Yes	Township Engineer

Staff/Personnel Resource	Available?	Department/Agency/Position
Personnel skilled or trained in GIS applications	Yes	Township Engineer
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	OEM Coordinators
Watershed planner	No	
Environmental specialist	No	
Grant writers	Yes	Department Heads
Resilience Officer	Yes	Municipal Clerk
Other (Professionals trained in conduction damage assessments)	Yes	Township Engineer, DPW Superintendent, CFO

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Jefferson.

Table 4: Fiscal Capabilities

Financial Resource
Community Development Block Grants (CDBG, CDBG-DR)
Capital Improvements Project Funding
Authority to Levy Taxes for Specific Purposes
User Fees for Water, Sewer, Gas or Electric Service
Incur Debt through General Obligation Bonds
Incur Debt through Special Tax Bonds
Incur Debt through Private Activity Bonds
Withhold Public Expenditures in Hazard-Prone Areas
State-Sponsored Grant Programs
Development Impact Fees for Homebuyers or Developers
Clean Water Act 319 Grants (Nonpoint Source Pollution)
Other

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Jefferson.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – PIO through the police department
Do you have personnel skilled or trained in website development?	Yes – municipal staff
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – the Township’s website was redesigned and provides news, information, contact information, and emergency alerts.
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Facebook, Instagram and Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	Yes – Open Space, Planning Board, Board of Adjustment, information group of the mayors of Lake Hopatcong meet quarterly to discuss HAB

Criterion	Response
<ul style="list-style-type: none"> If yes, briefly describe. 	
Do you have any other programs already in place that could be used to communicate hazard-related information? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes - Rave, municipal newsletter, tax bills, water bills, electronic message boards
Do you have any established warning systems for hazard events? <ul style="list-style-type: none"> If yes, briefly describe. 	Yes – the Township uses the RAVE Emergency Alerts system and encourages residents to sign up to receive community notifications and emergency alerts by phone, text, and/or email.

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Jefferson.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	#4	2/23/2010
Public Protection (Fire ISO Protection Class)	Yes	5 and 8B	
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Building Department
Who is your floodplain administrator? (name, department/position)	Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	Adopted by Township Council on 9/7/1983 and amended on 2/16/2005
Does your floodplain management program meet or exceed minimum requirements? <ul style="list-style-type: none"> If exceeds, in what ways? 	Meets minimum
When was the most recent Community Assistance Visit or Community Assistance Contact?	July 24, 1991
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <ul style="list-style-type: none"> If so, state what they are. 	No
Are any RiskMAP projects currently underway in your jurisdiction? <ul style="list-style-type: none"> If so, state what they are. 	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes

Criterion	Response
<ul style="list-style-type: none"> If no, state why. 	
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<ul style="list-style-type: none"> If so, what type of assistance/training is needed? 	
Does your jurisdiction participate in the Community Rating System (CRS)?	No
<ul style="list-style-type: none"> If yes, is your jurisdiction interested in improving its CRS Classification? If no, is your jurisdiction interested in joining the CRS program? 	
How many flood insurance policies are in force in your jurisdiction?	126 Policies. \$32,848,400 Insurance in-force. \$150,809 Premium in-force.
<ul style="list-style-type: none"> What is the insurance in force? What is the premium in force? 	
How many total loss claims have been filed in your jurisdiction?	100 claims, 1 claim still open, 24 closed without payment. \$1,176,109 claim amount
<ul style="list-style-type: none"> How many claims are still open or were closed without payment? What were the total payments for losses? 	
Do you maintain a list of properties that have been damaged by flooding?	A formal list of flood-damaged properties and property owner's interest in pursuing mitigation is not maintained by the Township
Do you maintain a list of property owners interested in flood mitigation?	Yes – but currently no property owners have expressed an interest in mitigation.

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Jefferson that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Jefferson has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Jefferson.

- Number of repetitive loss (RL) properties: 10
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: **All properties have been mitigated since Hurricane Sandy.**
 - The properties on Berkshire Valley Road were mitigated due to the reconstruction of the bridge over the Rockaway River and rechanneled the Rockaway River.
 - The property on Aldrin Road was mitigated after Hurricane Sandy when the homeowner made repairs to a retaining wall along the Rockaway River bed.
 - The properties along Venetian Drive and East Shawnee Trail have been mitigated when the Township increased the size of drainage pipes in this area which has led to a decrease in roadway flooding.
 - The property along Louisiana Avenue was mitigated by the homeowner when they made repairs to the retaining wall along Lake Hopatcong.

2.3 CRITICAL FACILITIES

There are no critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township reviewed the results of the hazard ranking as shown below and confirmed the indicated ranking in agreement with the calculated results for all hazards.

Table 8: Township of Jefferson Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Township of Jefferson reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were reported as cancelled:

- **Action:** The existing Verizon telephone lines that support the 911 system needs to be upgraded to fiber optics. This will allow the current communication to work properly and provide continuity of operations. **Reason:** No reason provided.
- **Action:** Working with the Township Engineer, determine which facilities need generator upgrades and what size generator is needed at each facility. Once identified, the Township will purchase the generators and associated equipment and install at each facility. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

PUBLIC REVIEW DRAFT - NOT FINAL

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Jefferson Township	Canal Crossing Bridge	Canal Crossing Bridge on Three Rivers Drive is a wooden bridge that needs to be replaced. The bridge has been	Replace entire bridge with a steel/concrete structure that is not as vulnerable to deterioration as the current bridge. A	Y	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			washed out multiple times and storms have undermined the bridge. Replacement will also allow Fire apparatus to access development via the bridge.	grant for bridge replacement has been awarded, but assistance is needed with the \$250,000 engineering fees.		
2	Jefferson Township	Purchase portable trailer 150KW mounted generator	The Township does not have a portable generator that can be used during an emergency to serve as a source or power for one of our 13 Wastewater/Water Wells, in the event of a power outage. All have aging generators that have a replacement schedule, however they sometimes have break downs.	Purchase a portable trailer mounted generator and associated equipment to be used during a power outage for critical infrastructure. Loss of power can cause disruptions in municipal water and wastewater treatment. All emergency generators at critical infrastructures are on a replacement, however with the large number of locations, a 150KW back-up generator is necessary to keep locations operating.	Yes	In progress
3	Jefferson Township	Waterside Drive Drainage Project	Improving drainage and flooding conditions that occur in the area. Roadway	Allows rainwater to drain into redesigned drainage system, eliminating flooding in the area. This project would	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			will no longer need to be closed during major rain events	entail the rehabilitation and upgrade of the existing stormwater infrastructure		
4	Jefferson Township	Castle Rock - Sunset Trail Drainage Project	Improve drainage and erosion conditions that occur in the area. Stormwater floods the area causing flooding to the area properties. The roadway will also no longer need to be closed during major rain events.	Allows rainwater to drain into redesigned drainage system, eliminating flooding in the area. This project would entail improvements to the existing stormwater system in this area.	No	New
5	Jefferson Township	Forest Fire Reduction	Reduce threat of Forest Fire along Weldon Rd and Berkshire Valley Rd	Eliminate the threat caused by hazardous trees, including as debris and as fuel for fires. This project would involve the County and Municipality working together on a plan to address the trees down from Super Storm Sandy and standing dead tree from the Ash Bore. Costs of project would need to be determined by County and Municipality working together. Berkshire Valley Rd is	No	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				a county road. Weldon Rd is a Township road, however much of it runs through the County Park.		
PUBLIC REVIEW DRAFT - NOT FINAL						
6	Jefferson Township	Stonybrook Dr Drainage Project	Reduce flooding of properties from stormwater. Stormwater collects and floods surrounding neighborhood properties.	Allows rain water to drain into redesigned drainage system, eliminating flooding in the area. Storm drains flow to County drainage system along Berkshire Valley Rd. (County Rd). Opening and closing gate valve in system would allow stormwater to flow from area, however DEP won't allow valve to be opened in fear of draining swamp area upstream. Project needs to be a joint effort with Township/County/DEP	No	New

2.7.2 IMPLEMENTATION INFORMATION

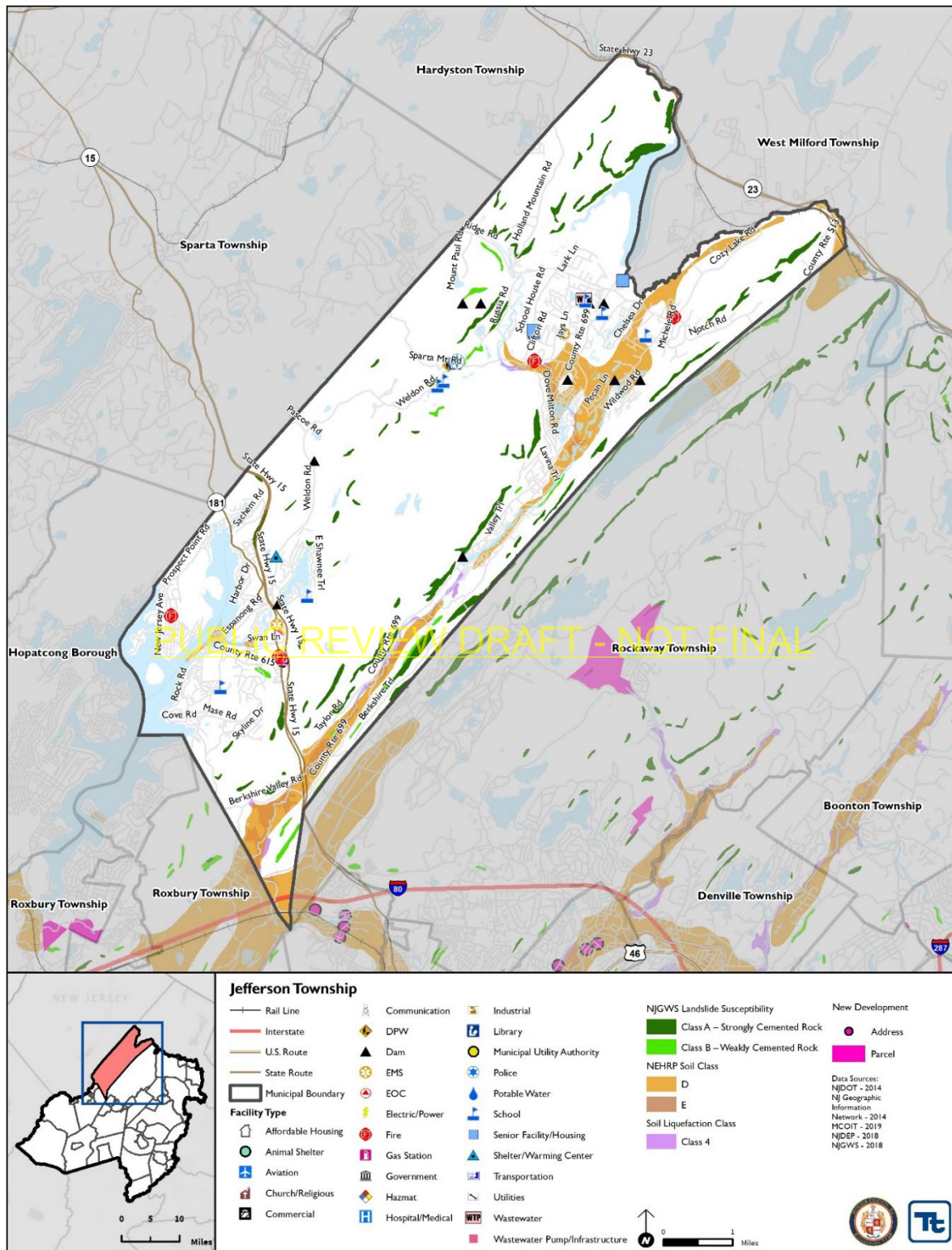
	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1		<u>DPW and Engineer</u>	DPW, Engineer, County Bridge Dept	NJDOT Local Bridges, Future Needs Program; USDOT Infrastructure. County Municipal Budget	Protects life and safety, improves integrity of bridge, allows road and bridge to remain open to large vehicles
2	Severe Weather	Severe Winter Weather	Goal 1	Goal 2	<u>Utilities Department</u>	DPW	Municipal Budget	Continuity of Operations
3	Flood		Goal 1		<u>Engineering</u>	DPW	Municipal Budget	Eliminates properties being flooded and road closures

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
4	Flood		Goal 1		<u>Engineering</u>	DPW	Municipal Budget	Eliminates properties being flooded and road closures
5	Wildfire		Goal 1	Goal 2, Goal 3	<u>County Shade tree Dept and Jefferson DPW</u>	Possibly outside tree companies	County and Municipal Budgets. State or Federal Funds to reduce climate change	Reduce fire possibilities and eliminate trees falling into roadway
6	Flood		Goal 1		<u>County/Township Engineers</u>	NJ State DEP	County/Municipal Budgets	Reduce flooding of properties

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k - \$250k	1-3 Years	2	3	3	2	3	13	High
2	\$50k - \$250k	1-3 Years	2	3	3	3	3	14	High
3	\$750k - \$1M	1-3 Years	1	3	3	1	2	10	Medium
4	\$500k - \$750k	1-3 Years	1	3	3	1	2	10	Medium
5	\$500k - \$750k	Under 1 Year	3	2	3	3	3	14	High
6	Under \$50k	Under 1 Year	1	2	1	1	1	6	Low

Figure 2: Township of Jefferson Hazard Area Extent and Location Map 2



APPENDIX 24: TOWNSHIP OF LONG HILL COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Long Hill and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter XXIX Uniform Construction Code and Construction Requirements.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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 Land Use Ordinance was adopted on August 13, 1997 and amended through May 31, 2019. The Ordinance was adopted to promote and protect the public health, safety and general welfare, and in furtherance of the following overall and more specific goals:					
<ul style="list-style-type: none">• To conserve and enhance the essential rural and residential character of Long Hill Township in order to best provide for the health, safety and general welfare of all Township residents.• To maintain the Township's identity as a fundamentally low-density residential community and insure that future development is compatible with, and sensitive to, existing residential areas and established neighborhoods.• To insure that new commercial development within the Township is in scale with and oriented to the shopping, service, and other needs of Township residents both in terms of design and use.• To insure that road improvements along County and Township roadways are limited to those that address existing traffic safety problems and are undertaken in ways that strongly support the overall goals of this Master Plan and preserve and enhance the tree-lined roads that help create the desired rural character of the Township.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">To develop a trail system throughout the Township that will provide circulatory links to the Township's residential, business, recreational, and open spaces areas and enhance local appreciation of, and recreation in, the Township's many natural resources.To preserve, protect and enhance the natural resources of the Township and to make environmental issues a central part of the planning process in Long Hill.To establish a sound long-range planning program that merges major Township buildings, storm and sanitary sewers, natural trails and open spaces, recreational areas, community services, residential areas and roadways into an infrastructure that is resident and pedestrian friendly, and which supports the goal of preserving the Township's rural character.					
Subdivisions	Yes	Local	Yes	-	-
Comment: Chapter XXXI Land Subdivisions. Administered by Planning Board.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter XII Stormwater Regulations. The ordinance prohibits the spilling; dumping or disposal of materials other than stormwater to the municipal separate storm sewer system (MS4) operated by the Township of Long Hill, so as to protect public health, safety and welfare, and prescribes penalties for the failure to comply. Section 146 of the Land Use Ordinance, Stormwater Management.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level;					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes/No	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Land Use Ordinance Section 160 Site Plan and Subdivision Review.					
Environmental Protection	Yes	Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter XXIII Shade Trees. Section 140 of the Land Use Ordinance, Environmental Protection Regulations.					
Flood Damage Prevention	Yes	Local	Yes	No	2020-Township of Long Hill-007
Comment: Section 143 of the Land Use Ordinance, Flood Damage Prevention. Promotes the public health, safety, and general welfare, and works to minimize public and private losses due to flood conditions in specific areas. Administered by the Planning Board.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	No	No	-
Comment: Chapter III Police Regulations. Chapter XVIII Township Notification System. The ordinance establishes rules and regulations for utilization of the Township's Notification System and designates those officials who are authorized to initiate the system.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	Yes	Local	No	No	-
Comment: Chapter XXV Water Emergency. The ordinance establishes methods to establish a water emergency and water use restrictions.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	No
Comment: The Master Plan is currently undergoing an update (expected by 2021). The 1996 Master Plan includes Stormwater Management, Housing, Conservation, Open Space, and Community Facilities as Elements. The plan identifies actions to locate utilities below grade; replace and upgrade gas					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
lines, and mitigate flood damage through stormwater control and management and other appropriate flood remediation practices to enable the Downtown to be a viable commercial area. The plan includes a map of flood hazard areas.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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.					
Disaster Debris Management Plan	No	-	No	-	2020-Township of Long Hill-009
Comment: To be developed					
Floodplain or Watershed Plan	Yes	Local/County	No	No	No
Comment: Flood Plain Management / Flood Acquisition Plan (with Morris County)					
Stormwater Management Plan	Yes	Local and State	Yes	Yes	YNo
Comment: 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). The Township's Stormwater Management Plan is administered by Construction/Planning.					
Stormwater Pollution Prevention Plan	Yes	Local-State	Yes	-	-
Comment:					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Federal	No	No	No
Comment: USFW CCP (Comprehensive Conservation Plan) for Great Swamp					
Economic Development Plan	Yes	Local	No	No	-
Comment: Contained within the Master Plan.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	Yes	Federal-State-Local	No	-	-
Comment:					
Community Forest Management Plan	Yes	Shade Tree Commission and Ordinance	No	Yes	No
Comment: Many trees have been removed due to Emerald Ash Borer. Shade tree survey has been completed with further recommendations for problem tree removals and future plantings.					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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 4 years. Long Hill Basic Plan.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local	No	-	-
Comment: Within EOP					
Continuity of Operations Plan	Yes	Local	Yes	No	No
Comment: Within EOP					
Public Health Plan	Yes	Local	Yes	No	No
Comment: Within EOP					
Other	No	-	-	-	-
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, storm water permits, development permits tied to the Flood Damage Prevention Ordinance. Engineering is responsible.
Does your jurisdiction have the ability to track permits by hazard area?	No system is currently in place but it could be done manually.
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, as part of wastewater management plan.

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Long Hill.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	County HMP Mitigation Planning Committee
Environmental Board / Commission	Yes	Township Environmental Commission
Open Space Board / Committee	Yes	Town Hall Open Space Committee
Economic Development Commission / Committee	No	
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Rave Mobile Alerting, mass broadcasting system. Reverse 911. Community opt in. email, text, all devices. Good percentage of town on board.
Maintenance program to reduce risk	Yes	RISK Management/JII
Mutual aid agreements	Yes	All Emergency Departments
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Township Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineering
Planners or engineers with an understanding of natural hazards	Yes	Township Engineering/OEM Coordinator
Staff with training in benefit/cost analysis	Yes	Township Engineering
Staff with training in green infrastructure	Yes	Township Engineering
Staff with education/knowledge/training in low impact development	Yes	Township Engineering
Surveyor	Yes	Township Engineering
Stormwater engineer	Yes	Work with County
Personnel skilled or trained in GIS applications	Yes	Township Engineering
Local or state water quality professional	Yes	Work with County
Scientist familiar with natural hazards in local area	Yes	Township Engineering
Emergency manager	Yes	Coordinator – Emergency Management
Grant writers	Yes	Township Engineering
Resilience Officer	No	
Watershed planner	Yes	Great Swamp Watershed and Passaic River watershed
Environmental specialist	Yes	Environmental Commission
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Long Hill.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes

Financial Resource	Accessible or Eligible to Use?
User Fees for Water, Sewer, Gas or Electric Service	Yes
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Long Hill.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, through law enforcement
Do you have personnel skilled or trained in website development?	Yes, volunteers
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, Flood information and county links
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, Facebook, Twitter, etc.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes, Environmental Commission, Shade Tree Commission, Planning Board, etc.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes, the warning system
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, Rave Mobile Alerting, mass broadcasting system. Reverse 911. Community opt in. email, text, all devices. Good percentage of town on board.

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Long Hill.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	Class 7	2017
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	No	-	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-

Program	Participating?	Classification	Date Classified
Sustainable Jersey	Yes	None	2/25/2009

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Engineer
What is the date that your flood damage prevention ordinance was last amended?	Currently being updated
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	2016
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	None
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes, FIRM remapping is still underway
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	-
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	Yes, yes
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Flood insurance policies: 173 Insurance in force: \$46,216,400 Premium in force: \$259,745
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 170 Claims open or closed without payment: 43 Total payments for losses: \$2,824,928
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Long Hill that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Long Hill has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Long Hill.

- Number of repetitive loss (RL) properties: 19
- Number of severe repetitive loss (SRL) properties: 6
- Number of RL/SRL properties that have been mitigated: 3

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Stirling Volunteer Fire Company*	Fire	X	X
Township of Long Hill Police Department*	Police/EOC	X	X
Township of Long Hill Municipal Building*	Municipal Hall/Alt EOC		X
Long Hill Community Center WKMB 1070	Community Center Communication	X X	X X
Long Hill Township Of STP*	Wastewater	X	X
Long Hill Library*	Municipal Hall		X
The Long Hill First Aid Squad, Inc.*	EMS		X
Long Hill DPW*	DPW	X	X

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Long Hill has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township changed the hazard ranking for wildfire from low to medium.

Table 9: Township of Long Hill Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Township of Long Hill reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were reported as cancelled:

- **Action:** Develop Disaster Debris Management Plan. **Reason:** No reason provided.
- **Action:** Following completion of the updated Master Planning the Township will re-evaluate its land use ordinances to implement Hazard Mitigation Planning where necessary and appropriate. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

PUBLIC REVIEW DRAFT - NOT FINAL						
Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Long Hill Township	Mitigate flood-prone properties, including RL/SRL properties	Frequent flooding events have resulted in damages in the following areas: Railroad Street, Magnolia Avenue, Cedar Avenue, Laurel Avenue, Mercer Street, Madison	Conduct outreach to 30 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. Support grant	Yes	

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			Street, Valley Road, and Bungalow Terrace.	applications for interested property owners.		
2	Long Hill Township	Stirling Volunteer Fire Company	Stirling Volunteer Fire Company is located in the floodplain. The Township is uncertain of the level of protection of the Fire Company facility against floodwaters. The facility is a critical lifeline facility.	Conduct feasibility assessment to determine level of exposure and necessary mitigation actions. Implement identified actions.	Yes	
3	Long Hill Township	Long Hill Community Center	The Long Hill Community Center is in the floodplain and is a lifeline facility. The facility is capable of being used as a backup shelter and	The Township will floodproof the facility.	Yes	

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			pet friendly shelter for non-flood related hazard events.			
4	Long Hill Township	Long Hill DPW	The Long Hill DPW is in the floodplain and is a lifeline facility.	Floodproof electrical components and develop action plan to move equipment during flood events.	Yes	
5	Long Hill Township	Update flood damage prevention ordinance	The flood damage prevention ordinance lacks language to capture the state mandated freeboard requirement.	Update the flood damage prevention ordinance to include freeboard.	Yes	

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 5		<u>Township Engineer, NFIP Floodplain Administrator, supported by homeowners</u>		FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage
2	Flood		Goal 3		<u>Township Engineer</u>		HMGP, PDM, FMA, Municipal budget	Reduction in flood risk to critical facility
3	Flood	All hazards	Goal 1		<u>Township Engineer</u>		HMGP, PDM, FMA, Municipal budget	Reduction in flood risk to critical facility
4	Flood		Goal 1		<u>Township Engineer</u>		HMGP, PDM, FMA, Municipal budget	Reduction in flood risk to critical facility

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
5	Flood		Goal 4		<u>Floodplain Administrator</u>		Municipal budget	Meet state requirements

2.7.3 STRATEGY RANKING AND PRIORITIZATION

PUBLIC REVIEW DRAFT - NOT FINAL									
	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	Under 1 Year	1	3	2	2	2	10	Medium
2	\$50k - \$250k	3-5 Years	1	3	2	2	2	10	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
3	\$50k - \$250k	3-5 Years	2	1	2	2	2	9	Medium
4	\$50k - \$250k	3-5 Years	1	3	2	2	2	10	Medium
5	Under \$50k	3-5 Years	1	3	2	3	2	11	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Township of Long Hill Hazard Area Extent and Location Map 1

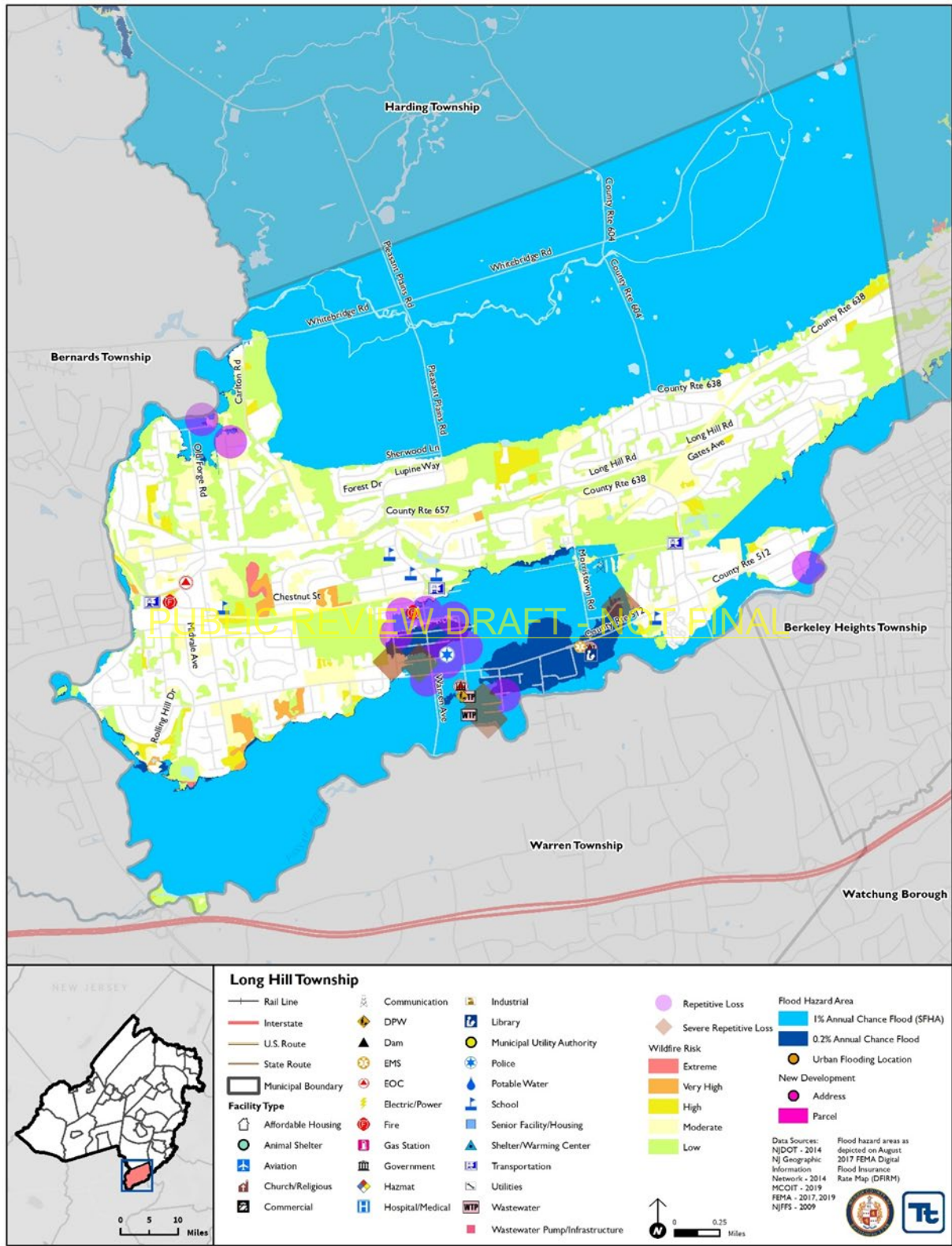
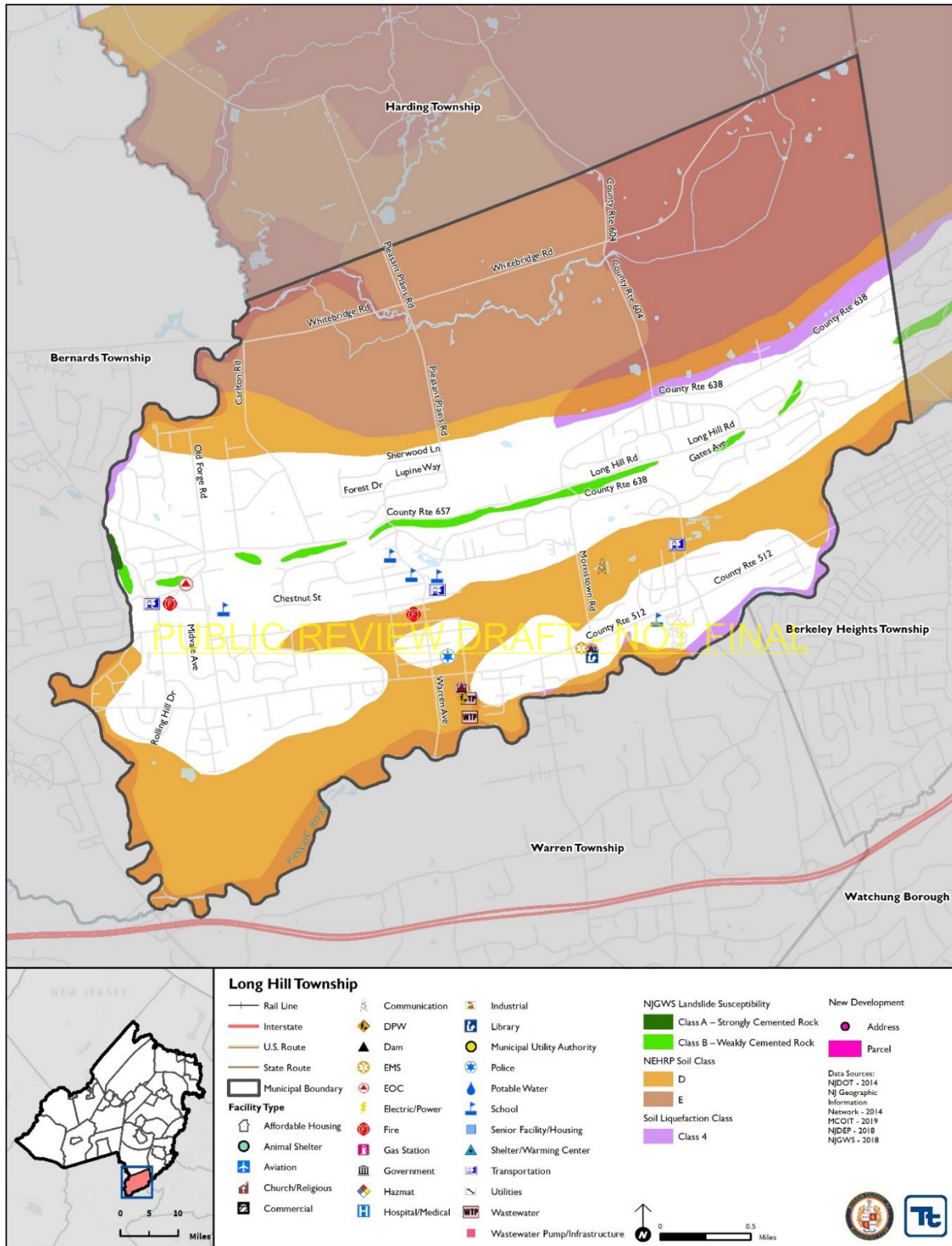


Figure 2: Township of Long Hill Hazard Area Extent and Location Map 2



APPENDIX 26: TOWNSHIP OF MENDHAM COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Mendham and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	-	-
Comment: Updated by the Building Dept. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) Chapter 127 adopted by the Township Committee of the Township of Mendham by Ord. No. 13-1976 (Sec. 25-1 of the 1998 Revised General Ordinances). The Township of Mendham a State Uniform Construction Code Enforcing Agency to be known as the Township Building Department, 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 may be promulgated under the Act. The Construction Official shall be the Chief Administrator of the enforcing agency.					
Zoning Code	Yes	Local	Yes, if have planning board	-	-
Comment: Per Ch 10-38 there shall be a Zoning Board of Adjustment established as provided in the land development ordinances. Added 4-12-1999 by Ord. No. 7-1999. Updated by Planning Board; Board of Adjustment. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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.					
Subdivisions	Yes	Local	Yes, if have planning board	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Updated by Planning Board; Board of Adjustment in accordance with zoning and hazard mapping.					
Stormwater Management	Yes	Federal, State, Local	Yes	Yes	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Updated by Township engineer. Chapter 297. In conformance with DEP regulations and to support water quality.					
Post-Disaster Recovery	No	Local	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	-	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes		Yes, if have planning board	-	-
Comment: Zoning map. State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Site Plan Review	Yes	Local	Yes, if have planning board	-	-
Comment: Updated by Planning Board; Board of Adjustment					
Environmental Protection	No		Yes	-	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code; Chapter 10-41 of municipal code authorizes environmental commission; Chapter 10-45 authorizes the Open Space Commission; Chapter 213 addresses littering					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Flood Damage Prevention	Yes		No	N/A	-
Comment: Planning board as FPA. Engineer has authority to act as FPA by RESOLUTION 2015-5. Township to update Flood Damage Prevention Ordinance to appoint engineer as PPA.					
Wellhead Protection	No		No	N/A	-
Comment:					
Emergency Management	No		Yes	N/A	-
Comment: Per Chapter 10-44 there shall be an Office of Emergency Management pursuant to N.J.S.A. App. A:9-41, and a Director thereof. The Police Department and all departments of the Township government shall cooperate with and assist the office as required.					
Climate Change	No		No	-	-
Comment:					
Disaster Recovery Ordinance	No		No	-	-
Comment:					
Disaster Reconstruction Ordinance	No		No	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Municipal: Yes/No County: Yes	Yes	2020-Mendham Township-0015
Comment: This plan was adopted on November 13, 2000, and amended/added to it on the following dates: November 1, 2001, April 1, 2002, June 15, 2005, February 6, 2006, and June 2, 2008. Township is currently updating the Master Plan and will include a reference to the HMP and Hazard Maps. Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); Updated by Planning Board. Adopted Nov. 2000-2002. Reevaluation 2018. The Township's Master Plan was written in 2000, amended and re-examined in 2018. Open space and recreational areas are identified in the plan as well as their relationship to preservation of water quality. The relationship between low density development and steep slope development, woodland preservation					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
is indicated. The re-zoning recommended by the 2000 Master Plan implemented the long term goals of protecting the high quality water resources and supporting a low density development pattern.					
Capital Improvement Plan	Yes	Local	Allowed	-	-
Comment: Updated annually. 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.					
Disaster Debris Management Plan	No		No	-	-
Comment:					
Floodplain or Watershed Plan	No		No	-	-
Comment: Updated 2015					
Stormwater Management Plan	Yes	Local	Yes	-	-
Comment: Stormwater management supported by Ferriero Engineering. On website. 2005. 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).					
Stormwater Pollution Prevention Plan	Yes		Yes	-	-
Comment: On website. 2019. This Municipal Stormwater Management Plan (MSWMP) documents the strategy for Mendham Township to address stormwater-related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations. It contains all of the required elements described in N.J.A.C. 7:8 - Stormwater Management Rules. 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. 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					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
and Tier B municipalities, as well as public complexes, and highway agencies that discharge storm-water from municipal separate storm sewers (MS4s).					
Urban Water Management Plan	No		No	-	-
Comment:					
Habitat Conservation Plan	No		No	-	-
Comment:					
Economic Development Plan	No		No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.).					
Shoreline Management Plan	No		No	-	-
Comment:					
Community Wild-fire Protection Plan	No		No	-	-
Comment:					
Community Forest Management Plan	No		No	-	-
Comment:					
Transportation Plan	No		No	-	-
Comment:					
Agriculture Plan	No		No	-	-
Comment:					
Climate Action Plan	No		No	-	-
Comment:					
Tourism Plan	No		No	-	-
Comment:					
Business Development Plan	No		No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other: Open Space Plan	Yes	Local	No	-	-
Comment: Included in Conservation Plan. Updated by Environmental Commission. Open Space Trust Committee added by Ord. No. 10-199.8. The Open Space Trust Committee shall recommend the acquisition of specified lands in fee, the acquisition of specified easements and/or the acquisition of development rights to specified lands. The Committee shall prioritize the acquisitions recommended. The Township Committee shall determine which properties, easements or development rights should be acquired and shall determine the amount of funds that the Committee shall make available for the recommended acquisition. After selection of the lands, easements or development rights as hereinabove provided, the Township may proceed to acquire by gift, purchase or by eminent domain proceedings pursuant to N.J.S.A. 20:3-1 et seq., the identified lands, easements or development rights within the financial constraints established by the Township Committee.					
Other: Environmental Resource Inventory	Yes	Local	Yes	-	-
Comment: Updated by Environmental Commission prepared 11/2013. This includes referenced to and regulations regarding mapped floodplains.					
Other: Conservation Plan					
Comment: Mendham Township's Conservation Element was drafted by the Environmental Commission in 2001 for the comprehensive revision of the Master Plan adopted by the Planning Board on November 13, 2000. This element is particularly important because the new Master Plan puts special emphasis on the protection of the high-quality natural resources of the Township, in particular the quality and quantity of water resources. Included are sections covering the major categories of natural resources found in the Township: Topography, Air, Surface Water, Groundwater, Wetlands, Wildlife and Vegetation, and Open Space.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes		EOP= Yes	-	-
Comment: Update 2023.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Threat & Hazard Identification & Risk Assessment (THIRA)	No		No	-	-
Comment:					
Post-Disaster Recovery Plan	No		No	-	-
Comment:					
Continuity of Operations Plan	No		No	-	-
Comment: In the EOP.					
Public Health Plan	No		-	-	-
Comment:					
Other	No		-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Engineer, Planning and Zoning Boards
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Mendham.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board plus a Board of Adjustment
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE
Maintenance program to reduce risk	Yes	Capital Program; DPW projects
Mutual aid agreements	Yes	fire, EMS, police
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Consultant Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Consultant Engineer
Planners or engineers with an understanding of natural hazards	Yes	Consultant Engineer
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	Yes	Consultant Engineer
Surveyor	Yes	Consultant Engineer
Stormwater engineer	Yes	Consultant Engineer
Personnel skilled or trained in GIS applications	Yes	Consultant Engineer
Local or state water quality professional	Yes	Consultant Engineer
Scientist familiar with natural hazards in local area	Yes	Consultant Engineer
Emergency manager	Yes	OEM
Watershed planner	Yes	Raritan River Coalition
Environmental specialist	Yes	Consultant Engineer
Grant writers	Yes	OEM, various staff
Resilience Officer	No	-
Other	-	

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Mendham.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes, through municipal budget
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Sewer
Incur Debt through General Obligation Bonds	Yes

Financial Resource	Accessible or Eligible to Use?
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Yes

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Mendham.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	http://www.mendhamtownship.org/
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Facebook, Instagram, Twitter
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Mendham.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes	3 and 3Y	2019
Storm Ready Certification	No		
Firewise Community Classification	No		
Sustainable Jersey			

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Flood Damage Prevention Ordinance notes Planning Board as the appointed floodplain administrator, the Township has authorized its engineer to act as floodplain administrator.
Who is your floodplain administrator? (name, department/position)	Township Engineer-Denis Keenan
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Engineering Consultant
What is the date that your flood damage prevention ordinance was last amended?	This date is not noted on the ordinance but may coincide with the flood map adoption date of 10/2/97
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	N/a
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	None
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	n/a
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	Clyde Potts Dam Dam Break Analysis
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	25 \$28,482
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Yes 9 closed without payment \$179,747.84
Do you maintain a list of properties that have been damaged by flooding?	CFM certification
Do you maintain a list of property owners interested in flood mitigation?	No

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Mendham that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Mendham has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Mendham.

- Number of repetitive loss (RL) properties: 2
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Township of Mendham Police Department*	Police	x	
Southeast Morris Co MUA Clyde Potts WTP*	Potable Water		x
Ledells's Dam	Dam	x	x
Mendham Township First Aid Squad*	Emergency	x	

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Mendham has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Borough of Mendham Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	Low
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	High	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

Township of Mendham reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Mendham reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Mendham Township	Generator for Elementary school	There is no backup power for the Mendham Township Elementary School, which is a critical facility.	The Town Engineer will re-search the required generator capacity necessary to supply backup power the building. The town will purchase and installation of a generator capable of running the facility during periods of power interruption.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Mendham Township	Ash Tree Mitigation Project	<p>Ash trees along hiking trails and township roadways are susceptible to Emerald Ash Borers. Mendham Township has a large amount of ash trees on township property.</p> <p>As a result of Emerald Ash Borer infestation and the proliferation of diseased and dying ash trees, pedestrians, hikers, and motorist are at risk for injury. Dead trees also present an increased risk for fire conflagration.</p>	Develop a community forestry management plan to determine the locations of trees that would be dangerous to people and motorists.	Yes	In Progress
3	Mendham Township	Repetitive Loss Property Program	Many properties in the Township experience damages due to flooding, as well as mitigated any water quality issues.	Facilitate contact with residents to determine issues and provide options to address issues. Conduct outreach to flood-prone property owners, including	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				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, relocating, or elevating residential homes in the flood prone areas.		
4	Mendham Township	Pleasant Valley Road bank stabilization	There are ongoing erosion issues along the bank of the Lake Therese drainage system.	Stabilize the bank of the Lake Therese drainage into the South Raritan River along Pleasant Valley Road. Develop plan and engineering report.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
5	Mendham Township	Stream Mitigation Project	Fallen trees obstruct the flow of water in the river	Develop River Tree Maintenance Plan for preventive maintenance on trees along the river, including private properties.	Yes	In Progress
6	Mendham Township	Retention Basin Improvement/capacity upgrade (25).	Retention basin capacity is inadequate causing flooding to adjacent properties.	Identifying adjacent properties. Identifying ownership and impact. Identify which basis to be addressed.	Yes	In Progress
7	Mendham Township	Re-size six underground cistern fire hydrants.	Existing street-fed cisterns are undersized for complete coverage of Town	Locations for additional cisterns to be established. Install sealed units and locate cisterns for complete coverage of Township.		
8	Mendham Township	Stream Bank stabilization Mosle Road.	Current development needs to address need for drainage improvements.	Ascertain impact against drainage improvements. Development should be completed in 2024	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
9	Mendham Township	All-Hazards Public Education and Outreach Program	Township sees a need to educate public on the impacts and mitigation methods for hazards of concern.	Develop all-hazards public education and outreach program for hazard mitigation and preparedness. Local OEM to draft outreach program.	Yes	In Progress
10	Mendham Township	Roxiticus Road property protection (storm water management).	Property runoff creates local flooding conditions	Engineering study, design and implementation of a stormwater conveyance system or road realignment.	Yes	In Progress
11	Mendham Township	Dam status of Ledell's Dam and Brookrace Dam. Ascertain if updated EAP exists and impact of drainage improvements against dam evaluation	There is potential for catastrophic failure of dams with potential life safety and structure damage.	Engineering study to determine if updated EAP exists and to ascertain the impact of drainage improvements.	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
12	Mendham Township	Clyde Potts Dam Spillway Improvement	Visible cracks observed in the dam spillway. Structural damage may result in flooding. Residential areas downstream of dam may get flooded.	NJDEP Dam Safety Division has been currently engaged in a regional study for design flood analysis. Based on the results of the study, site specific study will be performed for the Clyde Potts Dam. The site specific study may require the size of the spillway to be evaluated and upgraded. The spillway design work is anticipated to be performed within 4 to 5 years.	Yes	In Progress

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Winter Weather	Severe Weather	Goal 1		<u>School District</u>	School District	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
2	Wildfire	none	Goal 3	Goal 1	<u>Township Administrator</u>	Morris County	NJUCF, federal funding, local match, Operating budget	Medium
PUBLIC REVIEW DRAFT - NOT FINAL								
3	Flood		Goal 5	Goal 1	<u>NFIP Floodplain Administrator, supported by homeowners</u>	FEMA, Morris County, NJDEP	FEMA HMGP and FMA, local cost share by residents or Morris County Flood Mitigation Program or NJDEP Green Acres	High

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
4	Flood		Goal 1		<u>Town Engineer, DPW</u>		Highlands Regional Master Plan (RMP) grant funding, NJDEP funding, FEMA HMA, Local Operating Budget	Low
5	Flood		Goal 1	Goal 4	<u>Town Administrator, Town DPW</u>		Operating budget	low
6	Flood		Goal 1		<u>Town Administrator, Town Engineer</u>	DPW	Operating budget	low

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
7	Wildfire		Goal 1		<u>Town Administrator, Town Engineer</u>		Operating budget	low
8	Flood	none	Goal 1		<u>Town Administrator, Town Engineer</u>		Operating budget	low
9	Severe Weather	All hazards	Goal 2		<u>Town Administrator, Mendham Twp School Board</u>		Operating budget, HMA funding	Medium
10	Flood		Goal 1		<u>Township Engineer</u>		Capital Budget	Medium
11	Flood	none	Goal 4	none	<u>Township Engineer</u>		Operating Budget	Medium

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1 2	Flood	none	Goal 1	none	<u>SMCMUA,</u> <u>Township Engineer</u>		HHPD	High

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-250k	1-3 years	2	1	1	2	2	8	Low

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
2	\$50k-250k	1-3 years	2	2	3	2	2	11	Medium
3	Over \$1M	3-5 years	1	3	2	2	2	10	Medium
4	\$750k-\$1M	3-5 years	1	3	2	2	2	10	Medium
5	\$250k-\$500k	3-5 years	1	3	2	2	2	10	Medium
6	\$750k-\$1M	3-5 years	1	3	2	2	2	10	Medium
7	\$250k-\$500k	3-5 years	1	3	2	2	2	10	Medium
8	Under \$50k	3-5 years	1	3	1	2	2	9	Medium
9	Under \$50k	3-5 years	3	2	1	2	2	10	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
10	\$250k-\$500k	3-5 years	1	3	2	2	2	10	
11	Under \$50k	3-5 years	1	1	1	1		4	Low
12	\$500k-\$750k	3-5 years	2	3	3	2		10	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Township of Mendham Hazard Area Extent and Location Map 1

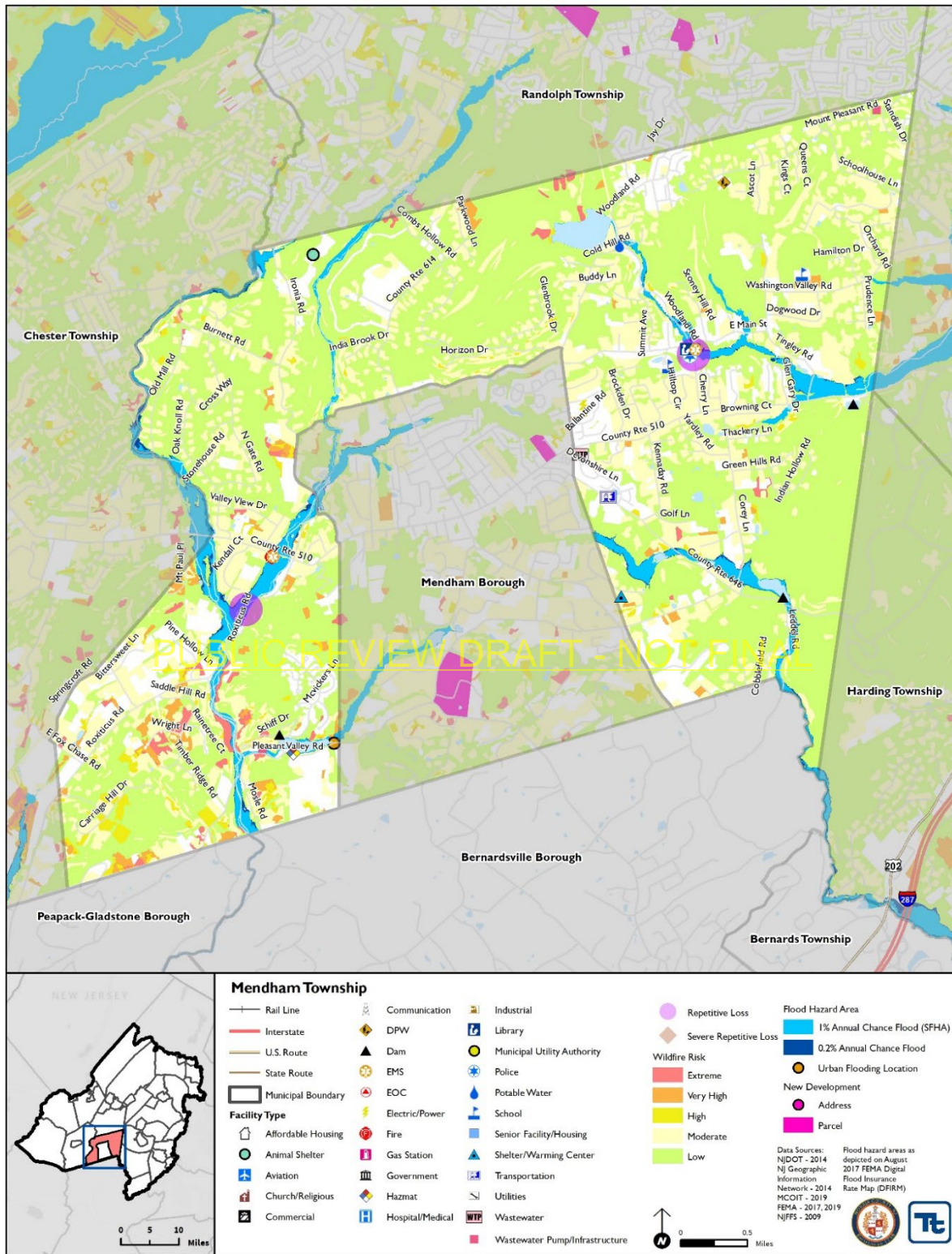
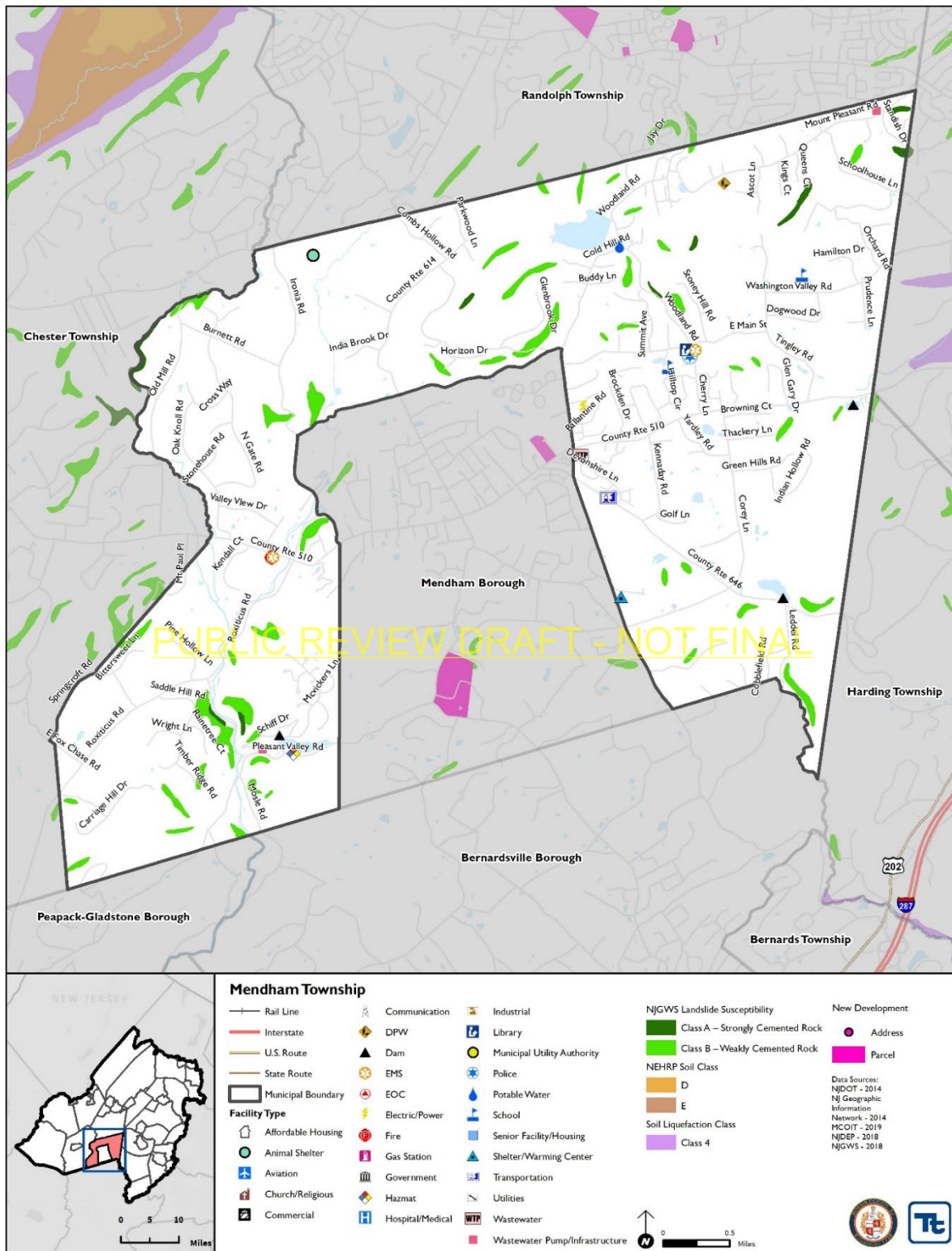


Figure 2: Township of Mendham Hazard Area Extent and Location Map 2



APPENDIX 27: TOWNSHIP OF MINE HILL COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Mine Hill and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.).					
Zoning Code	Yes	Local	Yes	No	No
Comment: State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by Planning/Zoning Board.					
Subdivisions	Yes	Local	Yes	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Enforced by Planning/Zoning Board.					
Stormwater Management	Yes	Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Township of Mine Hill, Part IIL General Legislation .Land Use, Part 8 Stormwater Management, Article XXXII Stormwater Management Requirements.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Enforced by the Division of Consumer Affairs, N.J.A.C. 13:45A-29.1.					
Growth Management	No	Local and State	Yes	No	No
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	No	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	No	Local	Yes, if have planning board	-	-
Comment: 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 freeholders 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.					
Environmental Protection	No	-	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Federal, State, and Local	Yes	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. Township of Mine Hill, Part II:General Legislation, Chapter 259: Flood Damage Prevention.					
Wellhead Protection	No	-	No	-	-
Comment: 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)).					
Emergency Management	No	-	Yes	-	-
Comment: 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	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Master Plan	Yes	Local	Yes	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Enforced by Planning, Economic Development component. Adopted July 2015.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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. Enforced by Administration, 2014.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	No	No
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Enforced by OEM, Morris County Hazard Mitigation Plan.					
Stormwater Management Plan	Yes	Local	Yes	No	No
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). Municipal Stormwater Management Plan for the Township of Mine Hill. March 2005 https://ecode360.com/documents/MI3185/public/419644542.pdf					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	No
Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). Stormwater Pollution Prevention Plan. December 31, 2018. http://minehill.com/wp-content/uploads/2019/01/181231-complete-sppp-storm-water-pollution-prevention-link.pdf					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	Yes	Local	No	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.). Enforced by Planning, Part of the Mine Hill Master Plan.					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wild-fire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	No	-	No	-	-
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4).					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Open Space Committee	Yes	Local	Allowed	No	No
Comment: Open Space Committee http://minehill.com/recreation/open-space-committee/					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	No	-	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning Board, Construction Official
Does your jurisdiction have the ability to track permits by hazard area?	Yes Construction Permit Portal
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Mine Hill.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Planning Board
Open Space Board / Committee	Yes	Planning Board
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	OEM Assistant/Administrator
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Wharton PD provides service
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering Contractor
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering Contractor
Planners or engineers with an understanding of natural hazards	Yes	Engineering Contractor
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	Yes	Engineering Contractor
Staff with education/knowledge/training in low impact development	Yes	Engineering Contractor
Surveyor	Yes	Engineering Contractor
Stormwater engineer	Yes	Engineering Contractor
Personnel skilled or trained in GIS applications	Yes	Engineering Contractor
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM Coordinator
Watershed planner	Yes	NJ Highlands Council
Environmental specialist	No	-
Grant writers	Yes	Mayor
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Mine Hill.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Ineligible – Mayor to investigate for next year’s funding
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes – Water and Sewer
Incur Debt through General Obligation Bonds	Yes

Financial Resource	Accessible or Eligible to Use?
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Np
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Mine Hill.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, Mayor
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	No. Mitigation Action 2020-Mine Hill-003
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes. Facebook, Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes. Open Space Committee.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	No
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes. SwiftReach.

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Mine Hill.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	No	-	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Township Administrator
Who is your floodplain administrator? (name, department/position)	Sam Morris, Mayor/Administrator
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	1993
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes Morris County FEMA maps are preliminary
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	Township Engineering Consultant can serve as CFM.
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No. No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	0 \$0 \$0
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	0
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Mine Hill that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Mine Hill has significant exposure. See Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Mine Hill.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
New Jersey No Name #7 Dam	Dam	X	X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Mine Hill was provided the opportunity to review the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Township of Mine Hill Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Low	Wildfire	Low
Geological Hazards	Medium		

2.5 COMPLETED ACTIONS

Township of Mine Hill reported no completed actions.

2.6 CANCELLED ACTIONS

The following action was reported as cancelled:

- **Action:** Work with school administrators to assess needs of the school, scope the improvements and install equipment to have all the necessary functions of a shelter. **Reason:** Wiring is not compatible for the project for a generator.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

PUBLIC REVIEW DRAFT - NOT FINAL						
Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Mine Hill	Mine Hill Civic Center	The Civic Center is deemed the primary shelter complete with a generator for backup power. No special medication needs available at this time or locker rooms	Determine if feasible to add locker rooms to the facilities, existing facility. Possibly adding shower, no locker rooms.	Yes	Not Started

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood	None	Goal 1		<u>Engineering, Administrator, OEM</u>		Municipal Budget	Medium

2.7.3 STRATEGY RANKING AND PRIORITIZATION

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	3-5 years	2	1	1	2	1	7	Low

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Township of Mine Hills Hazard Area Extent and Location Map 1

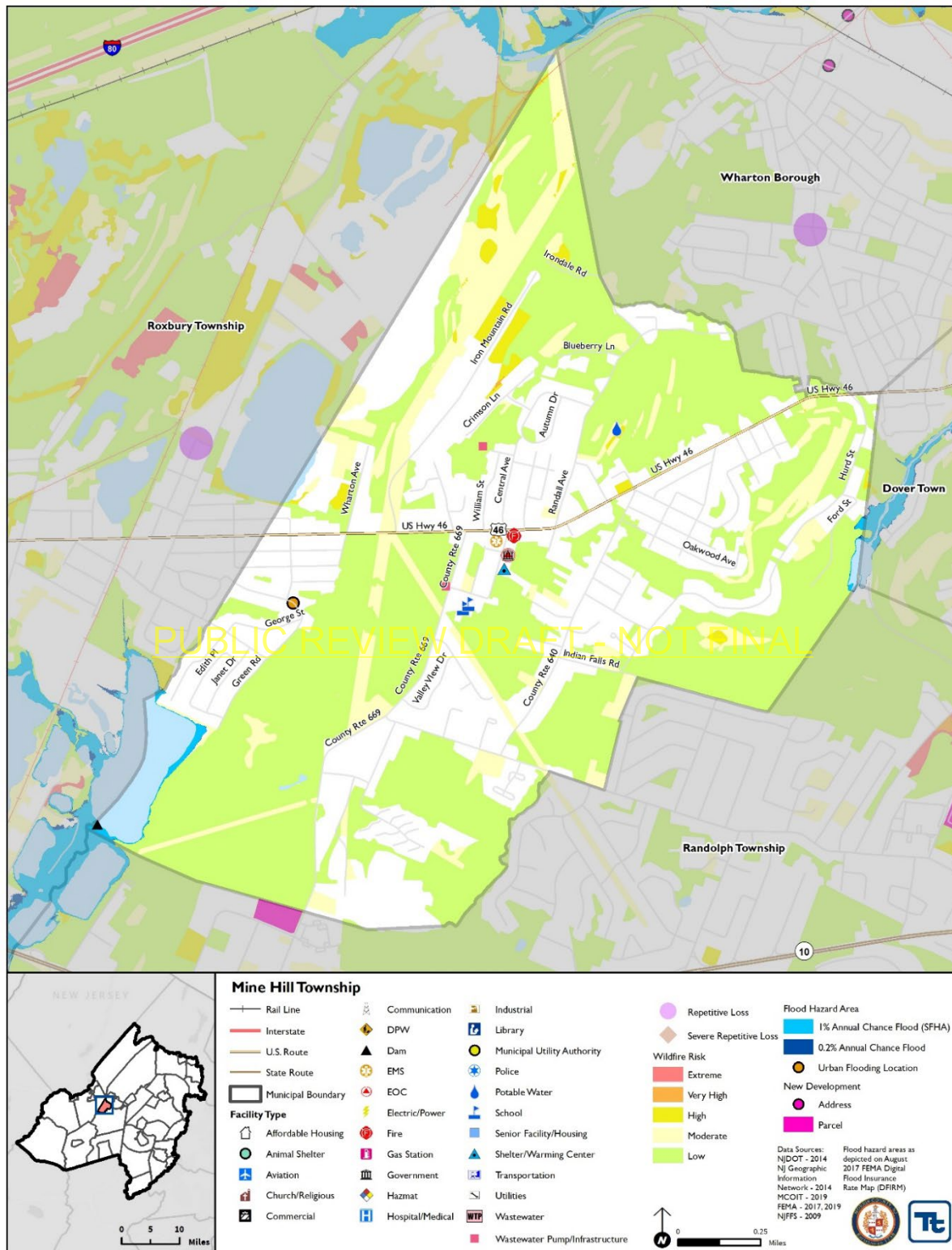
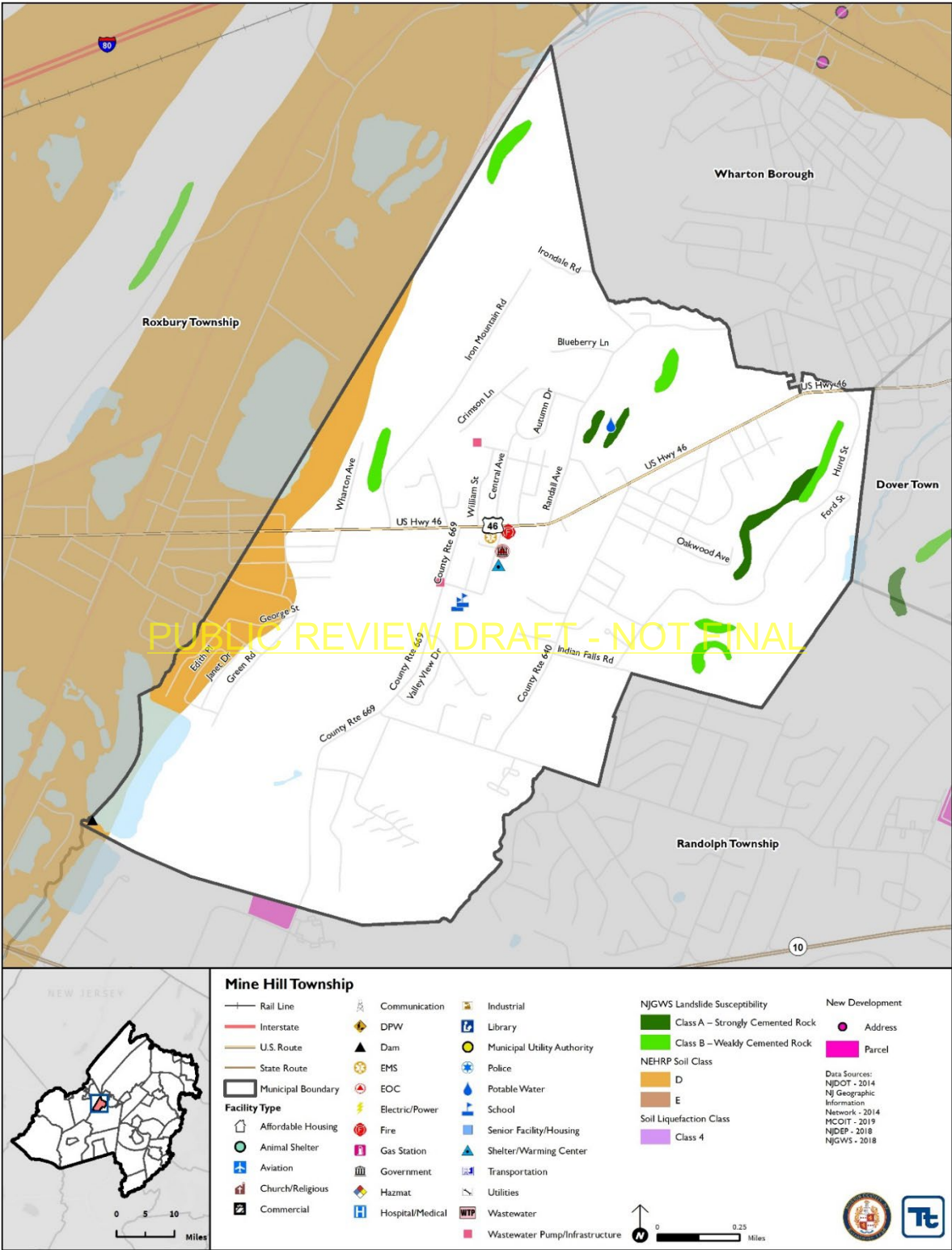


Figure 2: Township of Mine Hills Hazard Area Extent and Location Map 2



ANNEX 28: TOWNSHIP OF MONTVILLE COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Montville and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State and Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter 129 Construction Codes, Uniform. Administered by the Building Department.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter 230 Land Use and Development Part 4 Zoning Regulations. Administered by the Land Use Department.					
Subdivisions	Yes	Local	Yes	No	2020-Monte-ville-010
Comment: Chapter 230 Land Use and Development Part 2 Subdivision and Site Plan Regulations. Administered by the Land Use Department.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 230 Land Use and Development Part 3 Stormwater Management Requirements. Administered by the Land Use Department.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level;					
Shoreline Development	Yes	Local	Yes	No	-
Comment: Chapter 230B, Highlands Preservation Area Land Use, Article 6 Highlands Preservation Area Resource Regulations, Shoreline Protection Tier.					
Site Plan Review	Yes	Local	Yes/No	No	2020-Monteville-010
Comment: Chapter 230 Land Use and Development Part 2 Subdivision and Site Plan Regulations. Administered by the Land Use Department.					
Environmental Protection	Yes	State and Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 171 Fertilizer. Chapter 308 Soil Movement. Chapter 311 Soil Testing and Cleanup. Chapter 368 Trees.					
Flood Damage Prevention	Yes	Local	Yes	No	-
Comment: Chapter 200 Flood Hazard Protection updated in 2016.. 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: <ul style="list-style-type: none"> • Protect human life and health. • Minimize expenditure of public money for costly flood control projects. • Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public. • Minimize prolonged business interruptions. • 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. • 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. 					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">• Ensure that potential buyers are notified that property is in an area of special flood hazard.• Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.					
Wellhead Protection	Yes	Local	-	-	-
Comment: Chapter 399 Wells.					
Emergency Management	Yes	Local	-	No	-
Comment: Chapter 43 Mutual Aid, Chapter 49 Officers and Employees.					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	Yes	Local	-	No	2020-Monteville-010
Comment: Chapter 442 Water Supply. Chapter 368 Trees. Chapter 230B Steep Slope.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	2020-Monteville-010
Comment: Master Plan adopted in 2013. Reexamination in draft for 2019. Hazard mitigation related goals in the plan include: To ensure that any prospective development is responsive to the Township's environmental features and that any development preserves these physical characteristics; To continue the Township's recreation and open space planning and acquisition activities, and encourage the design of open space features in developments to abut the open spaces of adjacent properties; To encourage and provide buffer zones to separate incompatible land uses; Provide and maintain a superior system of community facilities and services, including water and sanitary sewer utilities, fire, police, and other public safety services, public works and library facilities; To identify Wellhead Protection Areas for public community water supply wells. The Plan also includes recommendations to clarify language in the tree protection ordinance and include the information in the steep slope ordinance into the land use ordinance.					
Capital Improvement Plan	Yes	Local	Allowed	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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. 6 Year Capital Improvement Plan, 2014. Administered by Administration.					
Disaster Debris Management Plan	No	-	No	-	2020-Monteville-013
Comment: Montville Public Works Department is typically dispatched for cleanup after major storms or disaster declared emergencies. The Department keeps track of time (man hours), material and disposal fees for these efforts.					
Floodplain or Watershed Plan	Yes	Local	No	No	-
Comment: Chapter 230 of municipal code. 2013. Administered by Engineering.					
Stormwater Management Plan	Yes	Local and State	Yes	No	-
Comment: 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). Chapter 323 of the municipal code. Administered by Engineering.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	No	-
Comment: Administered by Engineering					
Urban Water Management Plan	No	-	No	-	-
Comment: Have targeted areas of urban flooding.					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Community Wildfire Protection Plan	No	-	No	-	-
Comment: Have fire districts that may have plans.					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	Yes	Local	No	No	-
Comment: Included in Master Plan. Administered by Land Use.					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	Yes	Local	No	No	-
Comment: Have an EDC through the Chamber of Commerce					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. Administered by Police/OEM.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Continuity of Operations Plan	Yes	Local	Yes	No	No
Comment: Included in Emergency Operations Plan.					
Public Health Plan	Yes	Local	No	-	-
Comment: Administered by the Health Officer					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Land Use, Engineering, Zoning, and Building
Does your jurisdiction have the ability to track permits by hazard area?	Yes, SFHA is documented in excel spreadsheets and are working to use Spatial Data Logic.
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, vacant lands inventory

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Montville.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Land Use, Environmental Commission
Open Space Board / Committee	Yes	Administration
Economic Development Commission / Committee	Yes	Land Use

Staff/Personnel Resource	Available?	Department/Agency/Position
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes/No	Use Nixle, social media, website
Maintenance program to reduce risk	Yes	Public Works
Mutual aid agreements	Yes	Administration/Police, Chapter 43 of the municipal code
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Land Use & Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Land Use & Engineering & Construction
Planners or engineers with an understanding of natural hazards	Yes	Land Use & Engineering
Staff with training in benefit/cost analysis	Yes	Finance
Staff with training in green infrastructure	Yes	Construction department
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	Yes	Engineering
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Land Use & Engineering
Local or state water quality professional	Yes	State Licensed Operator for drinking water
Scientist familiar with natural hazards in local area	No	Land Use, Engineering, & Administration
Emergency manager	Yes	Police
Watershed planner	Yes	Planning
Environmental specialist	Yes	Engineering
Grant writers	Yes	Land Use & Administration
Resilience Officer	Yes	Identified through OEM per hazard event
Other	No	

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Montville.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes/Administration
Capital Improvements Project Funding	Yes/Administration & Engineering
Authority to Levy Taxes for Specific Purposes	Yes/Governing Body
User Fees for Water, Sewer, Gas or Electric Service	Yes/Water & Sewer
Incur Debt through General Obligation Bonds	Yes/Finance
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Open Space Acquisition Funding Programs	Yes - Administration

Financial Resource	Accessible or Eligible to Use?
Highlands Grants for Stormwater and Stream Corridor Restoration and Protection Plan	Yes; Administration and Land Use
Other	County Flood Acquisition Program

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Montville.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, Administration.
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	OEM hosts flood information.
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Board of Health
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Could work with Chilton Hospital
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Use Nixle, social media, website

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Montville.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4	2010
Public Protection (Fire ISO Protection Class)	Yes	4	2010
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	3/24/2009

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Nick Marucci, Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Engineer
What is the date that your flood damage prevention ordinance was last amended?	Originally written in 1998, updated in 2016
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Exceeds. Any development in the 500-year floodplain goes through a review by the engineer and will include flood related recommendations.
When was the most recent Community Assistance Visit or Community Assistance Contact?	2018
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No. Township was included in the Hackensack-Passaic Watershed, 02030103 Flood Risk Report.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Currently appealing the floodway map.
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	Could benefit from additional staffing.
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Flood insurance policies: 209 Insurance in force: \$77,819,600 Premium in force: \$315,881
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 128 Claims open or closed without payment: 32 Total payments for losses: \$3,359,778
Do you maintain a list of properties that have been damaged by flooding?	Yes, including nuisance flooding.
Do you maintain a list of property owners interested in flood mitigation?	Yes

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Montville that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Montville has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Township of Montville.

- Number of repetitive loss (RL) properties: 3
- Number of severe repetitive loss (SRL) properties: 2
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Pinebrook Volunteer Fire Department Station 2*	Fire		X
Montville Volunteer Fire Department Station 3*	Fire	X	X
Romaine Gate House - Valve Station*	Wastewater Pump	X	X
Boonton Reservoir Dam	Dam	X	X
DICAR Inc.	Hazmat	X	X
Montville Township DPW	DPW		X

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment).

The Township of Montville has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Township of Montville Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	Medium
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	High	Wildfire	Medium
Geological Hazards	Medium		

2.5 COMPLETED ACTIONS

Township of Montville noted no completed actions.

2.6 CANCELLED ACTIONS

The following actions were noted as cancelled:

- **Action:** Develop a Debris Management Plan. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

PUBLIC REVIEW DRAFT - NOT FINAL						
Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Montville	Mitigate flood-prone properties, including RL/SRL properties	Frequent flooding events have resulted in damages in the Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area. This area is residential, and these properties have been	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	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			repetitively flooded as documented by paid NFIP claims.	the Normandy Drive, Sheffield Place, Lancaster, Manchester, and Stiles Lane area		
2	Montville	Montville Volunteer Fire Department Station 3	Montville Volunteer Fire Department Station 3 is located in the floodplain. The facility is a critical facility. The facility is likely on the edge of the floodplain and may already be located above the flood elevation.	The Township will determine the flood vulnerability of Montville Volunteer Fire Department Station 3. The Township will complete any mitigation actions that may be necessary.	Yes	Not Started
3	Montville	Romaine Gate House - Valve Station	Romaine Gate House - Valve Station is located in the floodplain.	Conduct study to determine if Romaine Gate House - Valve Station is protected against impacts from flooding. If determined to be vulnerable, floodproof the structure to	Yes	Not started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				ensure the station remains functional during an event.		
4	Montville	Changebridge Road flooding	Changebridge Road experiences flooding by the Rockaway River. The road is a County Road.	Encourage County to conduct feasibility assessment to complete a roadway elevation or other mitigation. Provide support for any potential project	Yes	Not Started
5	Montville	Stormwater infrastructure improvements	Normandy Drive, Sheffield Place Lancaster, Manchester, and Stiles Lane require stormwater infrastructure upgrades.	Complete stormwater upgrades	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
6	Montville	Remove and Relocate Township Fuel Pumps	Flooding occurs in the area of the Township's fuel pumps. When flooding occurs, it prevents emergency vehicles from refueling. The fuel pumps are also located along the river and a spill could lead to contamination. A previous spill resulted in some fuel making it to the river, but it was contained.	The Township will remove and relocate the fuel pumps to a location that is out of the floodplain.	Yes	In Progress
7	Montville	Hatfield Creek De-snagging and Slope Stabilization	Hatfield Creek is prone to flooding issues. Flooding has the potential to result in streambank failure which could raise potential flooding heights and impacts.	The Township will complete a survey of Hatfield Creek to identify snags and areas of slope failure. The Township will remove fallen trees and des-nag the stream to prevent blockages that contribute to flooding. The Township	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				will install appropriate slope protection measures in areas requiring corrective measures.		
8	Montville	Sump pump icing discharges	Sump pumps that discharge into streets cause icing during extreme cold events and winter storms	Tie sump pumps into the stormwater system.	Yes	In Progress
9	Montville	Conduct outreach to residents downstream of Boonton Dam	Homes are located in the inundation area of Boonton Dam	The Township will conduct outreach to residents in the inundation area.	Yes	In Progress
10	Montville	Valhalla Dam and Jersey City Reservoir; inundation study.	Valhalla Dam and Jersey City Reservoir dam failure impacts are unknown.	Complete inundation study of Valhalla Dam and Jersey City Reservoir. Use the results of this study to better understand potential damages from a dam breach, and to develop	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				mitigation actions and response plans to ensure that the community can respond to an incident.		

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 5		<u>NFIP Floodplain Administrator, supported by homeowners</u>		FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
2	Flood		Goal 1		<u>Montville Engineer</u>		Township budget, HMGP, FMA	Protection of lifeline facility from flood risk
3	Flood		Goal 1		<u>Engineering</u>		BRIC, municipal budget	Reduction in flood exposure to

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
								pump stations
4	Flood		Goal 1		<u>County, Montville Engineer</u>		HMGP, County budget	Reduction in flood risk to road
5	Flood		Goal 1		<u>Engineering Department, DPW</u>		FMA, HMGP, RFC, SRL	Flood risk reduced
6	Flood		Goal 1		<u>Montville Engineer</u>		HMGP, PDM, FMA, County/municipal budget	Reduction in flood risk, environmental concerns
7	Flood		Goal 1		<u>Montville Township Engineer</u>		HMGP, Township budget	Flood losses avoided
8	Flood		Goal 1		<u>Public Works</u>		Township budget	Reduction in iced roadways

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
9	Flood		Goal 1		<u>Engineering Department</u>		Municipal budget	Residents better prepared
10	Flood		Goal 3	Goal 1	<u>Engineering Department</u>		PDM; BRIC; EMPG; Local funding	Emergency planning improved

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Over \$1M	3-5 years	1	3	2	1	1	8	Low

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
2	Over \$1M	3-5 years	1	2	2	3	2	10	Medium
3	\$750k-\$1M	3-5 years	1	3	1	2	2	9	Medium
4	Over \$1M	3-5 years	1	1	2	1	1	6	Low
5	Under \$50k	Under 1 year	1	1	1	1	1	5	Low
6	\$750k-\$1M	Under 1 year	1	2	2	2	2	9	Medium
7	\$500k-\$750k	3-5 years	1	2	1	2	2	8	Low
8	Under \$50k	Under 1 year	1	1	1	1	1	5	Low

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
9	Under \$50k	1-3 years	3	1	2	2	2	10	Medium
10	\$50k-250k	1-3 years	3	3	1	2	2	11	High

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Township of Montville Hazard Area Extent and Location Map 1

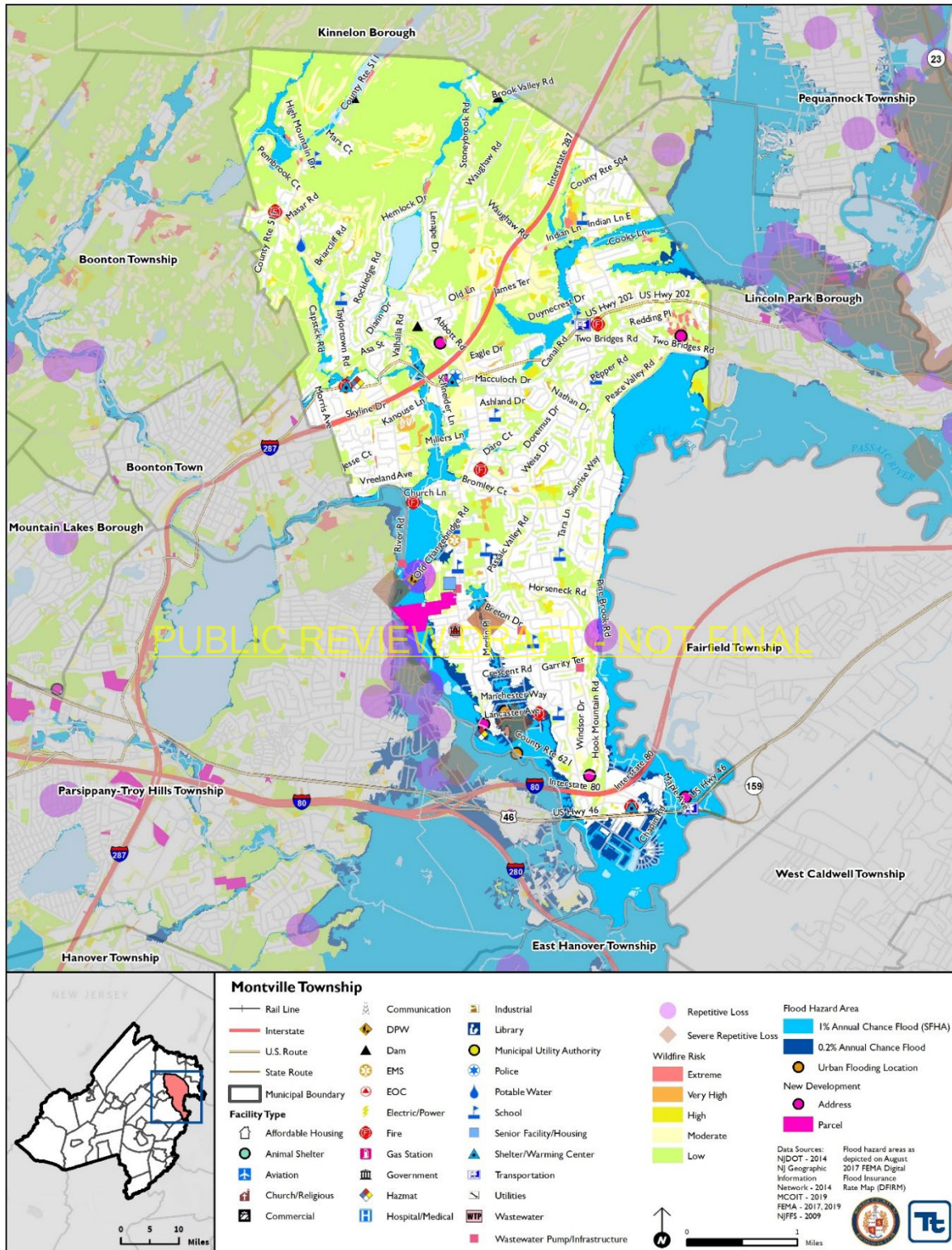
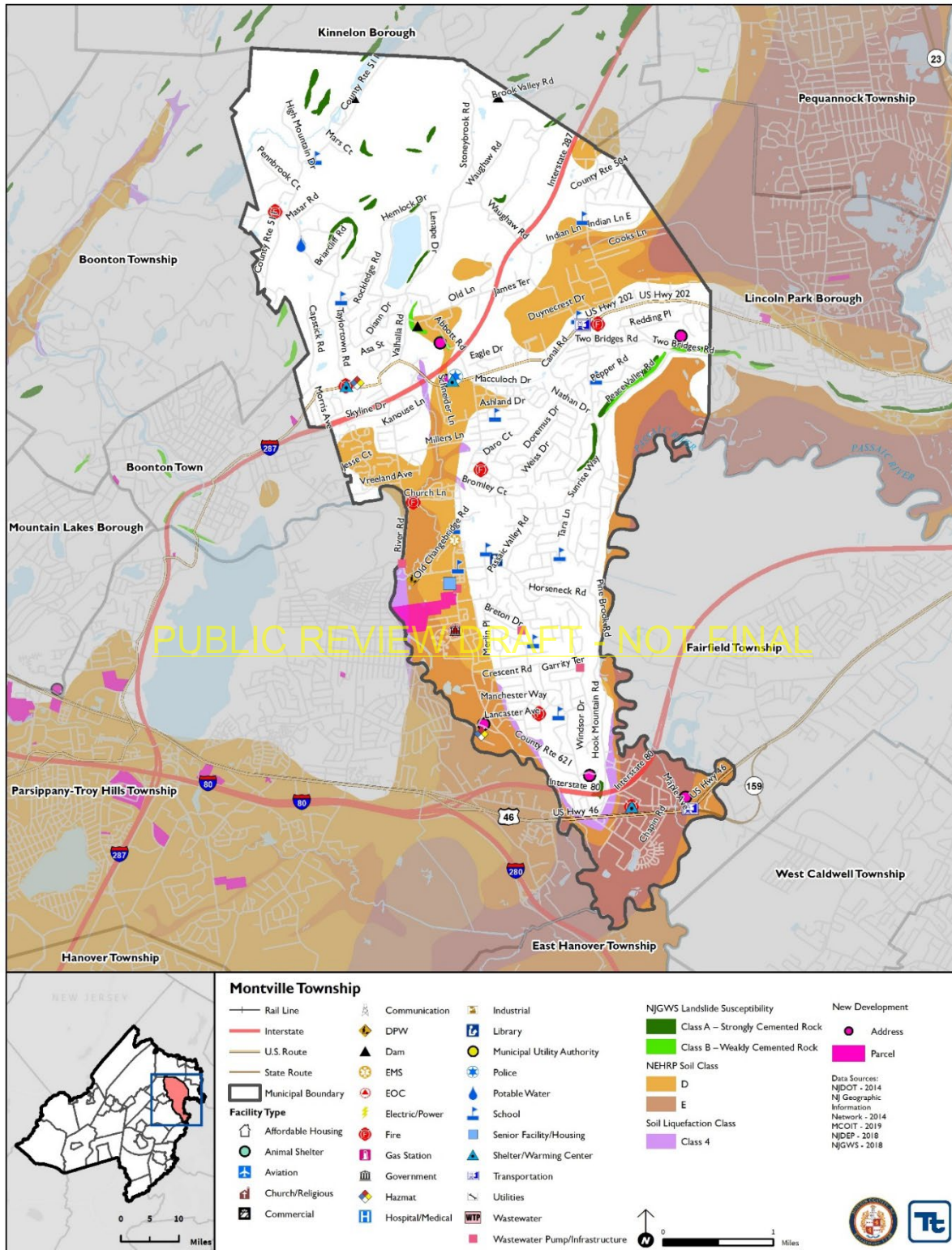


Figure 2: Township of Montville Hazard Area Extent and Location Map 2



APPENDIX 29: TOWNSHIP OF MORRIS COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Morris and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
PUBLIC REVIEW DRAFT - NOT FINAL					
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	
Comment: Construction Code Official, State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Yes	Yes	
Comment: Zoning Officer, Chapter 95					
Subdivisions	Yes	Local	Yes	Yes	
Comment: Planning Board, Chapter 57, Part 3					
Stormwater Management	Yes	Local	Yes	Yes	
Comment: Township Engineer, Chapter 57, Part 5					
Post-Disaster Recovery	No	All	Yes	Yes	
Comment:					
Real Estate Disclosure	Yes	State	Yes	Yes	
Comment: Division of Consumer Affairs, N.J.A.C. 13:45A-29.1					
Growth Management	No	Local	Yes	Yes	
Comment:					
Site Plan Review	Yes	Local	Yes	Yes	
Comment: Township Engineer, Chapter 57, Part 4. Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Man- dated?	Has the HMP been inte- grated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitiga- tion action? If yes, add Mitigation Action #.
Environmental Protec- tion	Yes	Local & State	Yes	Yes	
Comment:					
Flood Damage Preven- tion	Yes	Federal, State, Local	Yes	Yes	
Comment: Township Engineer, NJDEP/FEMA, Chapter 273 (Flood Damage Prevention)					
Wellhead Protection	Yes	Local & State	Yes	Yes	
Comment:					
Emergency Manage- ment	Yes	All	Yes	Yes	
Comment:					
Climate Change	Yes	All	No		No
Comment: Planning Board has started discussing the issue					
Disaster Recovery Ordi- nance	No	Local	No		No
Comment:					
Disaster Reconstruction Ordinance	No	Local	No		No
Comment:					
Municipal Separate Storm Sewer System (MS\$)	Yes	Local & State	Yes	Yes	
Comment:					
Steep Slopes Ordinance	Yes	Local & State	Yes	Yes	
Comment: NJDEP Required as part of our WMP					
Tree Removal and Re- placement Ordinance	Yes	Local	No	Yes	
Comment:					
Stormwater Manage- ment Ordinance	Yes	Local, County & State	Yes	Yes	
Comment: NJDEP Requirement					
Planning Documents					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comprehensive / Master Plan	Yes	Local	Yes	Yes	
Comment: Planning Board, Master Plan; Re-examination 2017					
Capital Improvement Plan	Yes	Local	Yes	Yes	
Comment: Township Committee, Township Committee funds projects such as culvert replacements and erosion control for hazard mitigation 10 year engineering planning, also integrated into budget					
Disaster Debris Management Plan	Yes	Local & State	Yes	Yes	
Comment: Integrated as part of EOP					
Floodplain or Watershed Plan	Yes	Local	Yes	Yes	
Comment: Township Engineer, New development is reviewed to ensure new structures are not built in the various flood plains; Flood Acquisition Plan (with Morris County); Watershed managed to ensure proper development and stormwater management					
Stormwater Management Plan	Yes	Local & County	Yes	Yes	
Comment: Township Engineer, New development provides stormwater management to offset increases in runoff and maintain ground water recharge					
Stormwater Pollution Prevention Plan	Yes	Local	Yes		
Comment:					
Urban Water Management Plan	No	N/A			
Comment: Covered by Stormwater Management Plan					
Habitat Conservation Plan	Yes	Local & State	Yes	Yes	
Comment:					
Economic Development Plan	Yes	Local	No		No
Comment: Township Committee, Economic Development Committee steers development into appropriate areas					
Open Space Plan	Yes	Local & County	No	Yes	

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Open Space purchased to reduce development					
Stream Corridor Management Plan	Yes	County	No	Yes	
Comment: County Mosquito Commission maintains stream corridors to help eliminate snags and reduce flooding					
Flood Acquisition Plan	Yes	Local & County	No	Yes	
Comment: Repetitive loss properties purchased to reduce losses and eliminate hazard					
Transportation Plan	Yes	Local, County & State	Yes	Yes	
Comment: Circulation Element					
Agriculture Plan	N/A				
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					
Climate Action Plan	No				
Comment:					
Tourism Plan	N/A				
Comment:					
Business Development Plan	Yes	Local	No	No	
Comment:					
Other					
Comment					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	
Comment: OEM, Plan used to guide OEM operations to ensure efficient operations during events Emergency Response Plan - Planning ensures proper equipment available in the event of an emergency					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	Yes	Yes	

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Man-dated?	Has the HMP been inte-grated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitiga-tion action? If yes, add Mitigation Action #.
Comment: Informal Planning Process					
Post-Disaster Recovery Plan	Yes	Local	Yes	Yes	
Comment:					
Continuity of Operations Plan	Yes	Local & County	Yes	Yes	
Comment:					
Public Health Plan	Yes	All	Yes	Yes	
Comment:					
Other					
Comment:					

PUBLIC REVIEW DRAFT - NOT FINAL

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Significantly

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Morris.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	OEM/Township Administrator

Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	Yes	Township Committee
Warning Systems / Services (reverse 911, outdoor warning signals)		
Maintenance program to reduce risk	Yes	DPW
Mutual aid agreements	Yes	FD/PD
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Professional Contractors and Township Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering and Building Department
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer
Staff with training in benefit/cost analysis	Yes	Engineering Department
Staff with training in green infrastructure	Yes	Engineering
Staff with education/knowledge/training in low impact development	Yes	Engineering / Planning
Surveyor	Yes	Consultant
Stormwater engineer	Yes	Township and Assistant Engineer
Personnel skilled or trained in GIS applications	Yes	Engineering
Local or state water quality professional	Yes	Engineering Department
Scientist familiar with natural hazards in local area	Yes	Engineering Department
Emergency manager	Yes	PD/FD/OEM
Watershed planner	Yes	Engineering Department
Environmental specialist	Yes	Engineering Department
Grant writers	Yes	Engineering Department and Consultants
Resilience Officer	No	
Other		

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Morris.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes - Sewer
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

Financial Resource	Accessible or Eligible to Use?
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other Open Space Acquisition Funding Programs	Yes – Morris County Flood Mitigation Program (acquisitions)

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Morris.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes County OEM, NJOEM,
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook, Twitter, Municipal Website, Instagram
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes Reverse 911, Nixle, Social Media, Website
Do you have any established warning systems for hazard events? • If yes, briefly describe.	No

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Morris.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	NP	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	2015
Public Protection (Fire ISO Protection Class)	Yes	04/4X	2014

Program	Participating?	Classification	Date Classified
Storm Ready Certification	No	NP	N/A
Firewise Community Classification	No	NP	N/A
Sustainable Jersey	No	NP	N/A

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	James Slate, Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	5/27/81
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	December 1994
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	NFIP policies: 13; WYO Policies: 81
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	\$831,546 in total payments (NFIP and WYO)
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Morris that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Morris has significant exposure; refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Morris.

- Number of repetitive loss (RL) properties: 4
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain and presents HAZUS-MH estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Butterworth Sewage Treatment Plant	Wastewater	X	X
Morris Township Fire Department Station 5 (HQ)	Fire	X	X
Township of Morris Police Department	Police	X	X

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Morris has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Township of Morris Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	Medium
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

Township of Morris reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Morris reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Morris Township	Construction of a Salt Dome to mitigate snow hazard on roads.	The existing salt dome at the DPW is undersized and in poor condition. A new larger structure is required to provide adequate capacity for large storm events	Construction of a Salt Dome to increase capacity and assist with mitigating snow hazard on roads.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Morris Township	Mitigate flood-prone properties	Flood events have resulted in damages to property in the Township. There are NFIP Repetitive Loss properties in the Township.	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After property owners indicate they would like to mitigate their property, assist them with identifying the preferred mitigation measures, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/ elevation.	Yes	Not Started
3	Morris Township	Construct a detention basin upstream to help reduce flooding fre-	The existing stream corridor that runs parallel with Western Avenue floods in the area of the culvert/ Fill-A-Belli Deli. The channel also has severe erosion problem which would	Construct a detention basin upstream of the Fill-A-Belli Deli	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
		quency downstream in the area of Fill-A-Belli Deli	be improved with reduced flows and velocities downstream.			
4	Morris Township	Mitigate critical facilities and life-lines	The Butterworth Sewage Treatment Plant, Lake Valley Road, is a critical facility and is located in the 0.2-percent floodplain.	The Township is currently designing a flood proofing project for the Butterworth Sewer Treatment plant	Yes	In Progress
5	Morris Township	Bradwahl Dam	There is no stabilized emergency spillway that exists on Bradwahl Dam it is necessary in accordance with NJDEP Dam Safety standards. No real benefit from existing basin, might be more cost-effective to eliminate the dam.	The Township conducted a hydrologic and hydraulic study and is looking to either construct a stabilized emergency spillway or remove the dam after a cost-benefit analysis is conducted.	Yes	in Progress
6	Morris Township	Structural Improvements at Highland Woods	At Highland Woods and Picatinny Tanks tank inspection, 2 out of 15	Roof rafters at both the tanks need to be repaired or replaced to protect the asset.	Yes	in Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
		and Picatinny Tanks	tanks in the system had broken rafters. In the event of a major snow storm, the roofs may collapse.			
7	Morris Township	Watnong Brook Flood Study	Existing homes located on the lower end of Watnong Brook were constructed in the flood plain prior to the enactment of the Stream encroachment Rules. Hoping to reduce the frequency of the flooding that occurs.	Reduce flood frequency for structures located in the flood plain	No	In Progress

2.7.2 IMPLEMENTATION INFORMATION

Implementation Specifics							
What is the main hazard from the 2025	List any additional hazards from the 2025	What is the main goal that	List any additional goals	What agencies will lead the	What agencies will support	What are potential sources of funding that	What benefits does this action provide?

Implementation Specifics							
update that the action mitigates?	mitigation plan update that the action mitigates	the action addresses?	that the action addresses	implementation of this action?	the implementation of this action?	can support this mitigation action?	
Severe Winter Weather		Goal 1		<u>Township Engineers</u>		Township	High
Flood		Goal 5		<u>NFIP Floodplain Administrator</u>	FEMA, NJDEP, Township	FEMA HMA, Property Owner	High
Flood		Goal 1		<u>Township Engineers</u>	Whippany River Action Committee	Township Possible 319 Grant	High
Flood		Goal 1		<u>Township Engineer, NFIP Floodplain Administrator</u>	NJDEP	Township FEMA HMA	High
Flood		Goal 1		<u>Township Engineer, NFIP Floodplain Administrator</u>	NJDEP	Township NJDEP FEMA	High
Drought	Severe Winter Storm	Goal 1		<u>SMCMUA</u>	SMCMUA	FEMA HMA	High

Implementation Specifics							
Flood		Goal 5		<u>Morris Township and Army Corps of Engineers</u>	NJDEP	NJDEP, FEMA, Property Owner	Protect property, reduce flood damage claims

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$250k-\$500k	1-3 years	1	1	1	2	1	6	Low
2	Over \$1M	3-5 years	1	3	1	1	1	7	Low
3	\$750k-\$1M	3-5 years	1	3	2	2	2	10	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
4	Over \$1M	1-3 years	1	3	2	2	3	11	Medium
5	\$750k-\$1M	1-3 years	1	1	1	3	1	7	Low
6	\$50k-250k	3-5 years	1	1	2	1	2	7	Low
7	\$750k-\$1M	3-5 years	1	3	1	2	3	10	Medium

Figure 1: Township of Morris Hazard Area Extent and Location Map 1

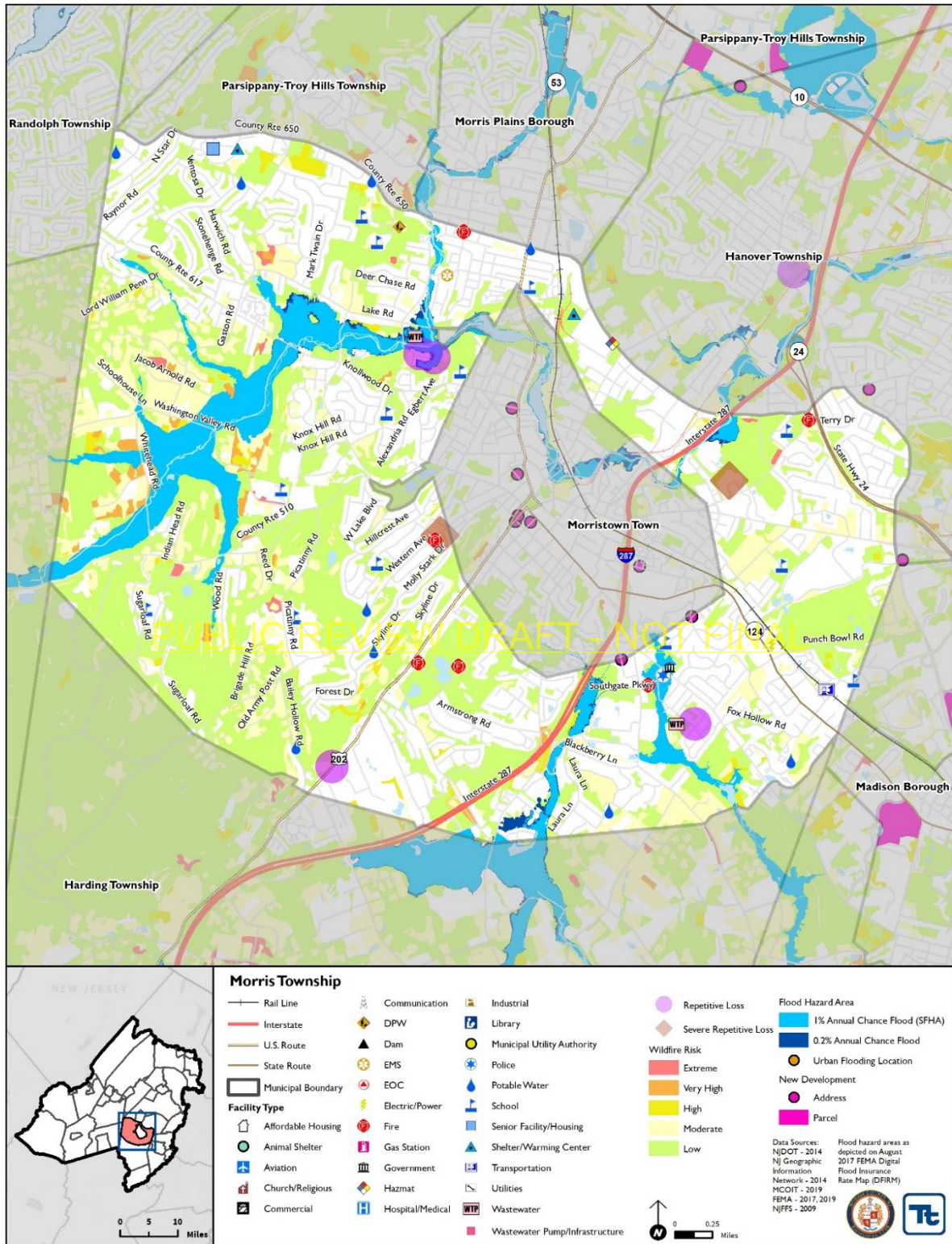
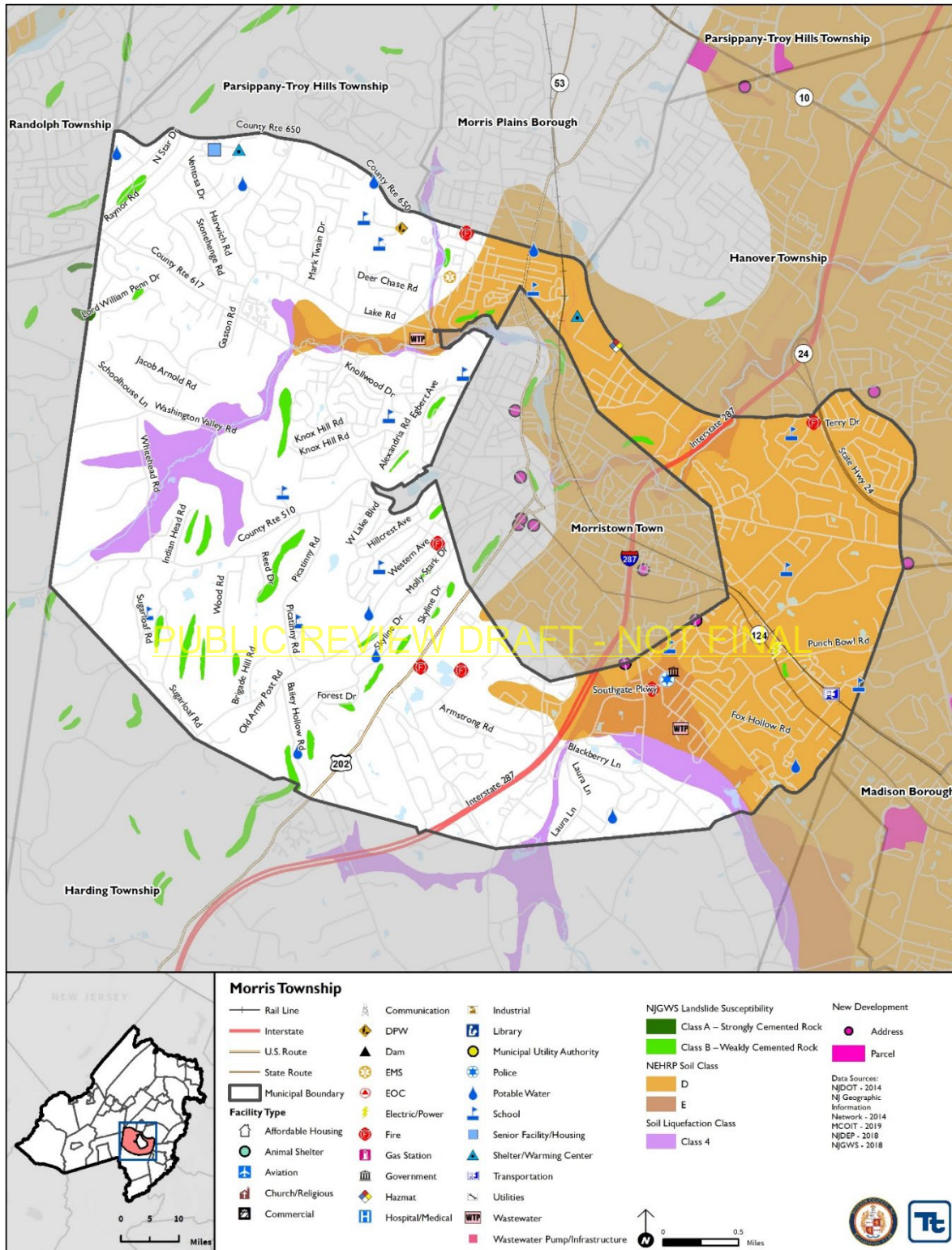


Figure 2: Township of Morris Hazard Area Extent and Location Map 2



APPENDIX 30: TOWNSHIP OF MOUNT OLIVE COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Mount Olive and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State, Local, Building Department	Yes	-	-
Comment: State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Yes	Yes	-
Comment: Chapter 550 (Land Use) – the purpose of this code is to establish a pattern for the use of land and buildings based on the land use element of the Master Plan and 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 people. This chapter is intended to regulate the use of land within zoning districts; to secure safety from fire, flood, panic and other natural and man-made disasters; to provide adequate light, air and open space; to limit and restrict buildings and structures to specified districts and to regulate buildings and structures according to their type and the nature and extent of their use; to regulate the nature and extent of the use of land for trade, industry, residence, open space or other purposes; to regulate the bulk, height, number of stories and size of buildings and other structures; to avoid conflict with the development and general welfare of neighboring municipalities, the county and the state; to establish appropriate population densities and concentrations contributing to the well-being of persons, neighborhoods, communities and regions and to the preservation of the environment; to preserve aquifers; to provide sufficient space for agricultural, residential, recreational, commercial and industrial uses and open space; to 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; to promote a desirable visual environment; to promote the conservation of open space and valuable natural resources and prevent urban sprawl and degradation of the environment through					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
improper use of land; and to 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.					
Subdivisions	Yes	Local, Department of Planning and Zoning	Yes	Yes	-
Comment: Chapter 400, Article V §400-73; for any proposed subdivisions in the Township, a developer must complete a subdivision application. The developer must present a plat that includes topography, slopes, waterbodies and direction of flow.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: <ul style="list-style-type: none">Chapter 343 (Stormwater Management) – includes articles for the stormwater management plan, illicit connections to storm sewers, and disposal of wastes in storm sewers. The code prohibits illicit connections to the municipal separate sewer systems operated by the Township. The article also prohibits the spilling, dumping or disposal of materials other than stormwater to the MS4 system operated by the Township.Chapter 318 (Sewers and Water)					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	-	-
Comment: N.J.A.C. 13:45A-29.1					
Growth Management	No	-	-	-	-
Comment:					
Site Plan Review	Yes	Local, Department of Planning and Zoning	Yes	Yes	-
Comment: Chapter 550. Part of the Site Plan Review includes the completion of a site plan application. The application asks for details regarding the proposed project and asks for a site plan drawing that includes the any existing or proposed streams and/or flood hazard areas.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Environmental Protection	No	-	No	-	-
Comment:					
Flood Damage Prevention	Yes	Local	Yes	Yes	-
Comment: Chapter 550, Section 47 (Flood Damage Prevention) – the purpose of this section is to promote the public health, safety and general welfare to minimize public and private losses due to flood conditions in specific areas. The Township requires a development permit before construction or development begins in any SFHA. Residential and non-residential new construction and substantial improvements of structures in the SFHA must be elevated at or above the base flood elevation.					
Wellhead Protection	Yes	Local	No	-	-
Comment: On September 20, 2010 through Township Ordinance No. 22-2010, the Township implemented regulations for wellhead protection. This is found in Chapter 550, Section 77 (Wellhead Protection) of the Township which includes the incorporation of wellhead protection area zoning into the master plan.					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	Local	No	-	-
Comment:					
<ul style="list-style-type: none"> Chapter 158 (Dam Management) – adopted on 10/8/1991 – the purpose of this code is to regulate the flow of waters over the Budd Lake Dam and to create the position of Dam Manager who is responsible for controlling the weirs of the Budd Lake Dam in accordance with the code. 					
Planning Documents					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comprehensive / Master Plan	Yes	Local, Township Administrator	Yes	-	-
Comment: There have been subsequent updates and reexamination reports pursuant to statutory requirements. Township has a separate Master Plan for the Highlands Preservation Area. Updated in 2003 and 2013. The 2013 reexamination report was adopted by the Planning Board on June 20, 2013.					
Capital Improvement Plan	Yes	Local, Township Board	No	No	-
Comment: Capital improvements are included in the Township's budget that is approved each year. Capital improvement line items include equipment, building upgrades, and well upgrades.					
Disaster Debris Management Plan	Yes	Local	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	Local	Yes	-	-
Comment: Stormwater Management Plan for the Township of Mount Olive; adopted on April 8, 2003					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	-	-
Comment: Stormwater Pollution Prevention Plan, revised June 15, 2010; see description under 'Additional Areas of Existing Integration'					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	In Progress	Local	No	-	-
Comment: In progress through Highlands Grant					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local, OEM	Yes	-	-
Comment: Consists of OEM Annex, HMP and COOP/COG (updated 2014)					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local, OEM	No	-	-
Comment: Consists of OEM Annex, HMP and COOP/COG (updated 2014)					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Continuity of Operations Plan	Yes	EOP	No	-	-
Comment:					
Public Health Plan	Yes	Local, Health Department	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes. Planning Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No – Cannot make the determinations unless its public land

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Mount Olive.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Township of Mount Olive Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	The Environmental Commission provides educational outreach to residents, assists the Planning Board on site plan review for environmental issues, makes recommendations/advises for environmental ordinances

Staff/Personnel Resource	Available?	Department/Agency/Position
		or policies, and works with many other committees on issues in the community regarding the community.
Open Space Board / Committee	Yes	Open Space Advisory Board
Economic Development Commission / Committee	Yes	Economic Development Committee
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	County Rave System
Maintenance program to reduce risk	Yes	Tree trimming, snow removal, catch basin clearing and maintenance, street sweeping
Mutual aid agreements	Yes	Surrounding Communities, Morris County, UASI
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering Division, Planning & Zoning
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering Division, Planning & Zoning
Planners or engineers with an understanding of natural hazards	Yes	Municipal Planner
Staff with training in benefit/cost analysis	Yes	Engineering Division, Planning & Zoning
Staff with training in green infrastructure	No	
Staff with education/knowledge/training in low impact development	Yes	Planning Department
Surveyor	Yes	Consultant
Stormwater engineer	Yes	Consultant
Personnel skilled or trained in GIS applications	No	
Local or state water quality professional	Yes	Consultant
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	OEM
Watershed planner	Yes	Consultant to Township
Environmental specialist	Yes	Environmental Consultant
Grant writers	Yes	Engineering Division, Planning & Zoning
Resilience Officer	No	
Other (Professionals trained in conducting damage assessments)	Yes	In-house staff performs estimates

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Mount Olive.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No

Financial Resource	Accessible or Eligible to Use?
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Mount Olive.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Police Department
Do you have personnel skilled or trained in website development?	Yes – In-house
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – Municipal website provides upcoming meetings, announcements, and emergency alerts. The Township also has a weekly newsletter that provides residents with information about the Township
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Facebook, Twitter. The Township also uses their website, radio, print, and face-to-face meetings for community education and outreach.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes – Newsletter, tax bill, etc.
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes - RAVE

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Mount Olive.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	NP	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	4	4/2/15
Storm Ready Certification	No	NP	N/A
Firewise Community Classification	No	NP	N/A
Sustainable Jersey	Yes	Bronze	10/30/2019

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering Consultant
Who is your floodplain administrator? (name, department/position)	Town Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2003
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets the minimum
When was the most recent Community Assistance Visit or Community Assistance Contact?	March 14, 2001
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	No – Maps are from 1986; the new ones need to be adopted so they can use them
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
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	76 Policies in force. \$23,739,000 Insurance In-Force. \$92,915 Premium In-Force.
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	65 Claims. 0 claims still open, 18 claims closed without payment. \$669,876 claim amount
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 – Homeowners have not shown an interest in mitigation

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Mount Olive that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Mount Olive has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Mount Olive.

- Number of repetitive loss (RL) properties: 4
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Clover Hill STP	Wastewater	X	X
Upper Waterloo Lake Dam	Dam	X	X

**Identified lifeline*

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Mount Olive has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township agreed with the calculated rankings for each hazard of concern.

Table 9: Township of Mount Olive Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperatures	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Township of Mount Olive reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Mount Olive reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Mt Olive	Updated Township's Flood Damage Prevention Ordinance	The Township's current flood damage prevention ordinance does not currently meet the NJDEP flood hazard area design requirement of at minimum of one foot above the base flood elevation.	Update the Township's flood damage prevention ordinance to include the NJDEP requirement of having the bottom of the first floor be elevated at least one foot above the base flood elevation for any development in the SFHA. The new flood maps need to be approved	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				first before the Township takes action.		
2	Mt Olive	Mitigate Floodprone Properties	Frequent flooding events have resulted in damage to properties/structures in the Hermaine Drive area.	Conduct outreach to 5 flood-prone property owners and provide mitigation alternatives. Develop a FEMA grant application to obtain funding to elevate homes and grade properties.	Yes	Not Started.

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1		<u>Township Administration</u>	The NJ DEP	Township budget	Increase flood protection of structures in floodplain
2	Flood		Goal 1		<u>Floodplain Administrator and Homeowners</u>	FEMA, NJ DEP	FEMA FMA and HMGP, Township Budget or Homeowner (local match)	Informs residents of different mitigation measures, increases protection from flooding

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	Under 1 year	1	2	1	3	2	9	Medium
2	Over \$1M	3-5 years	1	2	1	1	2	7	Low

Figure 1: Township of Mount Olive Hazard Area Extent and Location Map 1

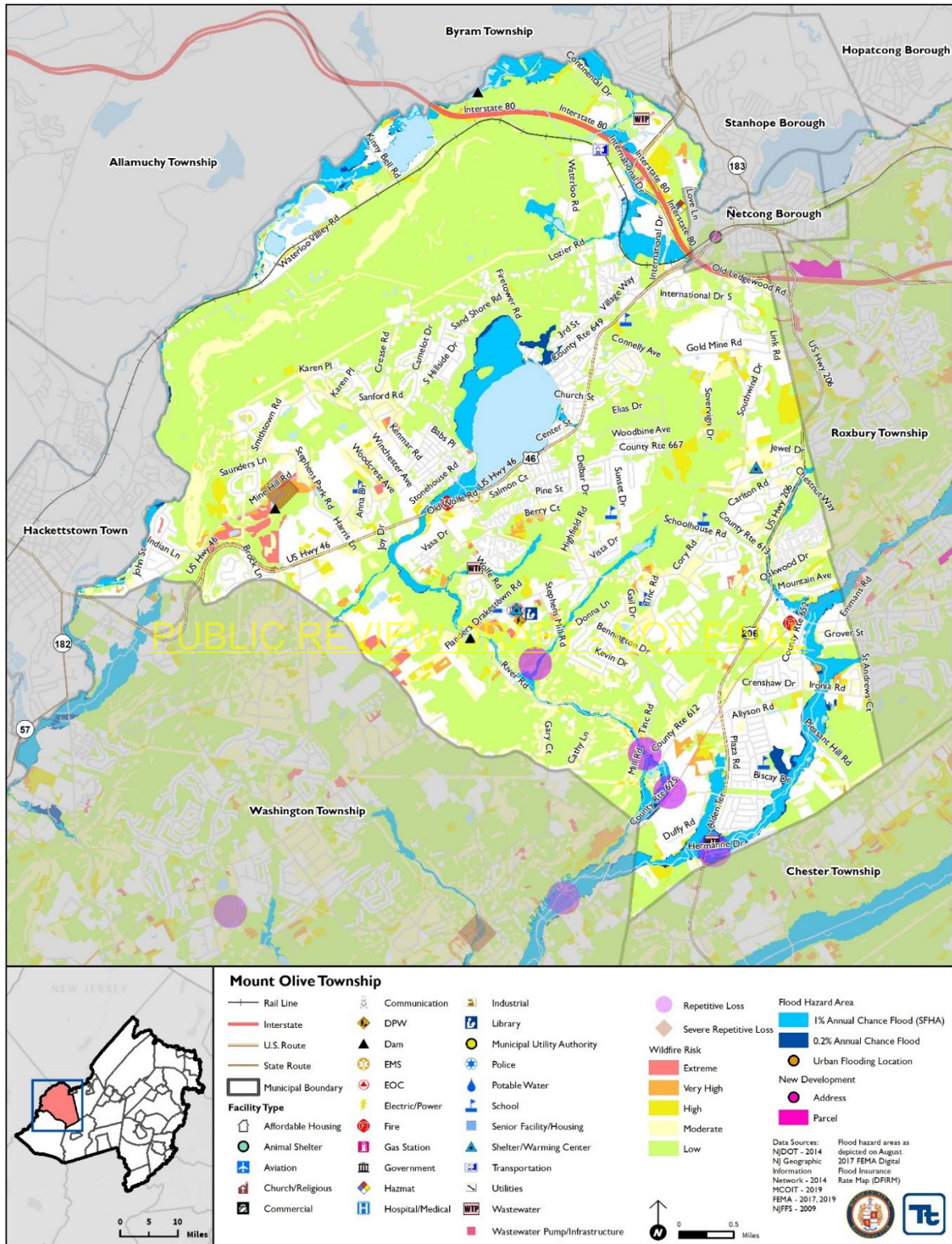
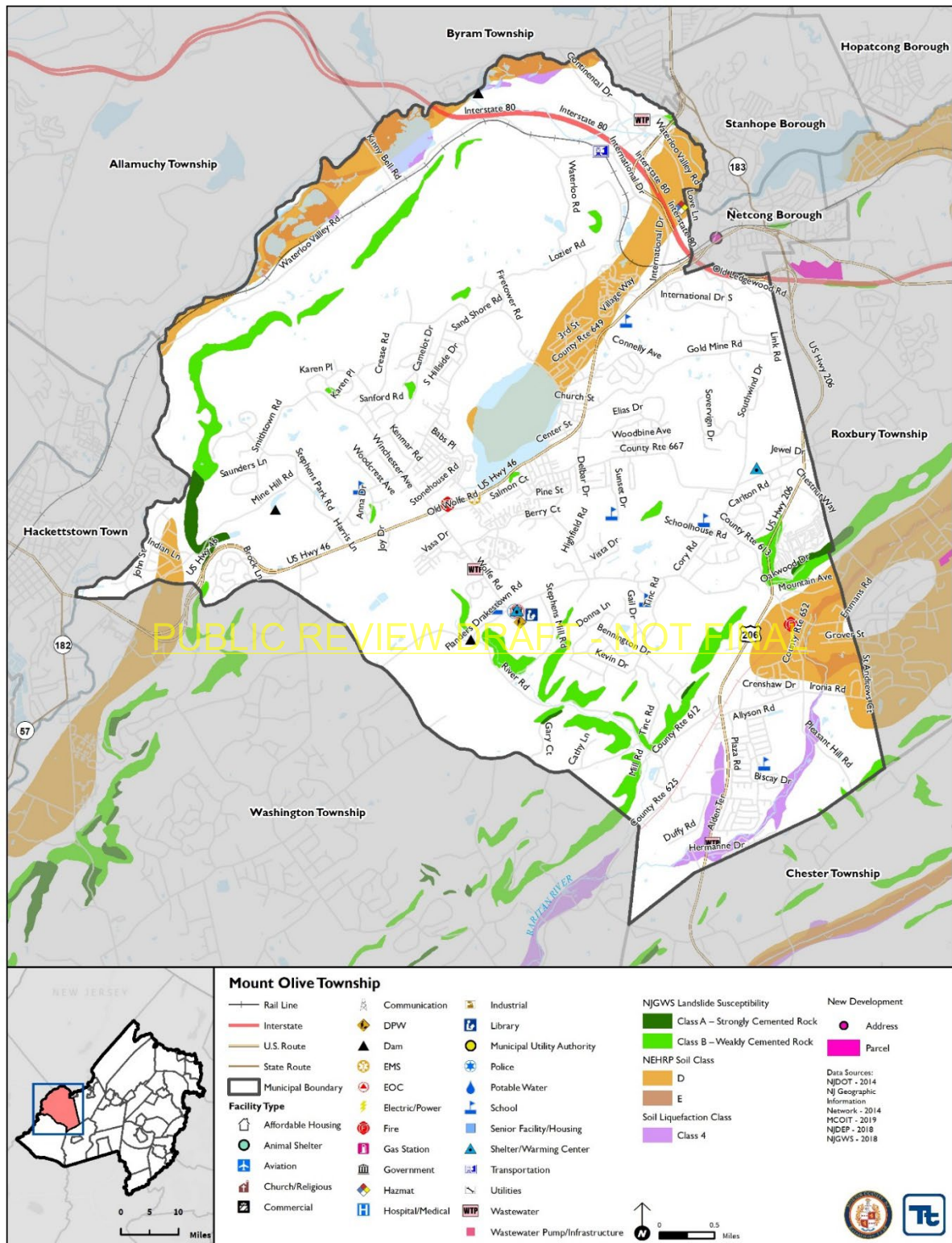


Figure 2: Township of Mount Olive Hazard Area Extent and Location Map 2



APPENDIX 31: TOWNSHIP OF PARSIPPANY-TROY HILLS COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township ParsIPPany-Troy Hills and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Re- gional, County, Lo- cal)	State Man- dated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Administered by the Building Department.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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 code, Chapter 430 of the municipal code. Administered by Planning/Zoning.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 430 of the municipal code. Administered by Planning/Zoning.					
Stormwater Management	Yes	Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 225 of the municipal code. Administered by the Engineer.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No	-	Yes	-	-
Comment: State mandated at local level;					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	No	No	-
Comment: Chapter 225 of the municipal code. Administered by the Engineer.					
Environmental Protection	Yes	State, Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Environmentally Critical Areas, Chapter 225-64L of the municipal code. Administered by the Engineer.					
Flood Damage Prevention	Yes	Federal, State, Local	Yes	No	-
Comment: Flood Hazard Protection, Chapter 175 of the municipal code. Administered by the Planning/Zoning and Engineer.					
Wellhead Protection	Yes	Local	-	No	-
Comment: Article XLIII of the municipal code.					
Emergency Management	No	-	-	-	-
Comment:					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	No	-
Comment: Comprehensive Plan was adopted in 1976. Most recent reexamination took place in December 2014. The Township is currently working on an update. The Plan is administered by the Planning/Zoning departments.					
Capital Improvement Plan	Yes	Local	Allowed	No	-
Comment: 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. The Capital Improvement Plan is administered by the Planning Board.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local, County	No		
Comment: Flood Acquisition Plan (with Morris County). Administered by OEM through collaboration with all departments.					
Stormwater Management Plan	Yes/No	Local and State	Yes	No	-
Comment: 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). Chapter 357 of the municipal code, dated 12/20/05. Administered by Engineering.					
Stormwater Pollution Prevention Plan	Yes/		Yes	Yes/No	Yes/No
Comment:					
Urban Water Management Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Habitat Conservation Plan	Yes/No		No	Yes/No	Yes/No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Re- gional, County, Lo- cal)	State Man- dated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Community Wildfire Protection Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Community Forest Management Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Climate Action Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Tourism Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Business Development Plan	Yes/No		No	Yes/No	Yes/No
Comment:					
Findings Related to the Lake Hiawatha Flooding of August 2011	Yes	Local	No	No	-
Comment: Study to determine causes and solutions of flooding of Lake Hiawatha. Recommendations include: Make sure all residents are connected to Reverse 911, Monitor and clean all storm drains; study condition of all streams and rivers; inspect Lake Hiawatha retaining wall; Rebuild Passaic River Flood Tunnel.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	Local	Yes	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
(CEMP) / Emergency Operations Plan (EOP)					
Comment: 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. Emergency Operations Plan (November 2009). Administered by OEM.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No				
Comment:					
Post-Disaster Recovery Plan	No		No	No	-
Comment:					
Continuity of Operations Plan	Yes		No	No	-
Comment: Located in the EOP, administered by OEM.					
Public Health Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? If no, who does? If yes, which department?	Yes, Engineering
Does your jurisdiction have the ability to track permits by hazard area?	Yes, starting to use GIS
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, in Master Plan and COA reporting

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

- **Planning Board:** The Planning Board is made up of 15 members and includes the Minor Site Plan and Subdivision Committee.
- **Zoning Board of Adjustment:** The Zoning Board of Adjustment reviews all applications for relief from provisions of the Zoning Ordinance. The Board's principal duties are to hear appeals, grant variances and rule on "use" applications. The Zoning Board is comprised of seven regular members and two alternates appointed by the Township Council. All Board Members are Township residents. The Board reviews subdivisions and site plans with variances.
- **Zoning Division:** Staffed with a full time zoning officer, the Zoning Division is responsible for overseeing the administration and enforcement of all zoning regulations and ordinances. The Zoning Officer is required to review each application for proposed projects to assure that the project is in compliance with those laws.
- **Economic Development Advisory Committee:** The purpose of the Economic Development Advisory Committee is to serve in an advisory capacity and provide information, advice and recommendations relating to the promotion of Economic Development in the Township of Parsippany-Troy Hills. The Committee consists of 11 members; five appointed by the Mayor and six appointed by the Council. Members are Township residents who have knowledge of or have demonstrated an interest in the economic well-being of the Township.
- **Environmental Advisory Committee:** The Environmental Advisory Committee is comprised of eight members including a council liaison and a chairperson. The Committee assisted in the study of the cause of the 2011 Lake Hiawatha flood event.
- **Historical Preservation Advisory Committee:** The Parsippany Historical and Preservation Society is a seven-member advisory body of local citizens formed in 2003 by appointment of the Mayor and Township Council. The purpose of this committee is to educate and advocate for historic preservation in the Township of Parsippany-Troy Hills.
- **Open Space Committee:** The Open Space Committee makes an initial determination of which parcels of land should be acquired in fee and/or those parcels of land from which the Township should acquire development rights.
- **Recreation Advisory Committee:** The role of the Recreation Advisory Committee is to advise and assist the Recreation Department in the planning and development of public recreational programs and facilities and to promote coordination of such within the Township.
- **Traffic Advisory Committee:** The Traffic Advisory Committee is composed of nine township residents, five of whom are appointed by the Township Council, and four of whom are appointed by the Mayor. Their purpose is to serve in an advisory capacity to the Township Council, providing information, advice and recommendations relating to traffic management and safety issues.
- **Streets & Roads Division:** Planning Board: The Planning Board is made up of 15 members and includes the Minor Site Plan and Subdivision Committee.
- **Zoning Board of Adjustment:** The Zoning Board of Adjustment reviews all applications for relief from provisions of the Zoning Ordinance. The Board's principal duties are to hear appeals, grant variances and rule on "use" applications. The Zoning Board is comprised of seven regular members and two alternates appointed by the Township Council. All Board Members are Township residents. The Board reviews subdivisions and site plans with variances.
- **Parks & Forestry:** Parsippany has 31 parks throughout the township. The park system has preserved over 800 acres ranging from the 0.32 acre Lake Hiawatha Park to the 352-acre Knoll Park. This total surpasses the nationally recognized standard of having one acre of park land for every 100 residents. The goal has been to provide recreation within walking distance for every resident.
- **Building & Construction:** The Building and Construction Office serves to assist Parsippany residents and commercial contractors wishing to initiate construction within the Township of Parsippany-Troy Hills. The responsibilities of this office include compliance with all State rules and regulations regarding construction. It is the duty of this office to issue permits and conduct inspections for new construction, repairs and renovations, additions, electric and gas service upgrades, demolition, roofing, siding, swimming pools, sheds, replacement of hot water heaters and removal of tanks, etc.

- **Fire Prevention:** The Parsippany Division of Fire Prevention is tasked with enforcing the New Jersey Uniform Fire Code in all commercial properties located within the Township of Parsippany. In addition, the Division is responsible for issuing appropriate permits, certificates for home sales and/or rentals, planning for events, assisting with emergency response, and public education in conjunction with the township's six Fire Districts, three EMS agencies, Police, and many other stakeholders. In order to accomplish these tasks, the Division is staffed by one (1) full time Fire Official, four (4) full time Fire Inspectors, and one (1) full time Administrative Assistant. The Fire Official and Fire Inspectors are state certified to requirements set forth by the State of New Jersey Division of Fire and Safety and completed required continuing education yearly.

In 2017, the Division started an aggressive education program that branched out from just the township schools. Inspectors now present Fire Safety to businesses including a variety of topics that encompass fire safety in the workplace, home, school, as well as time of year specific events. In addition to presentations, the Division owns and operates a Fire Safety Trailer and Fire Extinguisher prop that allows the user to practice extinguishing a real fire under a controlled environment. In 2018, the Division adopted "Prevention Through Education" as the standard to which all actions are measured to. Whether inspections in commercial settings or education at schools, the Division believes that Prevention is much more than code enforcement.
- **Emergency Management:** The Office of Emergency Management's mission is to protect the community from large-scale emergencies and disasters and to coordinate and respond to disasters, coordinate recovery efforts following a disaster, identify and mitigate potential threats, and prepare plans to deal with various disasters. The Office provides the following services:

 - CERT refers to the Community Emergency Response Team. The team is comprised of residents trained to be better prepared to deal with emergency situations for themselves and their families. CERT members can also give critical support to first responders, provide immediate assistance to victims, and organize spontaneous volunteers at a disaster site. CERT is part of a nationwide Citizens Corp program.
 - RACES refers to Radio Amateur Civil Emergency Service. Its' mission is to operate and maintain Amateur, Public Safety, and other communication systems, to assist government officials in the protection of life and property during emergencies.
 - Hazardous materials incident response
 - Planning for emergencies
 - Preparedness efforts for safety
- **Flood Acquisition Plan:** The Township has participated in the County's Flood Mitigation Program (FMP) and has an approved Flood Acquisition Plan (FLAP). The Morris County FMP is the first dedicated, county-level flood acquisition program in the State of New Jersey. The FMP allows Morris County to assist municipalities in moving people out of harm's way, lowering municipal costs due to intense flooding episodes, and create natural flood capture and storage areas which protect the remaining homes and businesses. The FMP is funded by the Morris County Open Space tax and provides grant monies for municipalities to purchase flood-prone residential properties.

The table below summarizes potential staff and personnel resources available to the Township Parsippany-Troy Hills.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	Engineer, OEM, Administration
Environmental Board / Commission	Yes	Environmental Advisory Committee

Staff/Personnel Resource	Available?	Department/Agency/Position
Open Space Board / Committee	Yes	Open Space Committee
Economic Development Commission / Committee	Yes	Economic Development Committee
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Rave, Social Media, Reverse 911, Variable message boards
Maintenance program to reduce risk	No	DWP
Mutual aid agreements	Yes	Fire Departments and First Aid
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planner and Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Building Department and Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planning and Engineering
Staff with training in benefit/cost analysis	No	Engineering
Staff with training in green infrastructure	No	Engineering
Staff with education/knowledge/training in low impact development	Yes	Stormwater regulations
Surveyor	No	-
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Engineering
Local or state water quality professional		
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Grant writers	No	-
Resilience Officer	No	-
Watershed planner	No	-
Environmental specialist	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township Parsippany-Troy Hills.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	

Financial Resource	Accessible or Eligible to Use?
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township Parsippany-Troy Hills.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Public Information Officer
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, Hazard Mitigation Plan is linked on the website
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes; Facebook, Twitter, etc.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes, Local Emergency Planning Committee
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	No
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes; Rave, Social Media, Reverse 911, Variable message boards

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township Parsippany-Troy Hills.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No. The Township was last a member of the CRS program in 2007. Would be interested in returning.	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes		
Public Protection (Fire ISO Protection Class)	Yes	5 at Class 4, 1 at Class 3	???
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	5/19/2009

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Justin Lizza, Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	7/19/2022
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets Requirements
When was the most recent Community Assistance Visit or Community Assistance Contact?	March 20, 2017
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	Training to become certified
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No, interested in rejoining.
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Policies: 332 Insurance in force: \$92,365,500 Premium in force: \$595,082
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 642 Claims open or closed without payment: 108 Total payments for losses: \$13,693,195
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Parsippany-Troy Hills that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Parsippany-Troy Hills has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Parsippany-Troy Hills.

- Number of repetitive loss (RL) properties: 45
- Number of severe repetitive loss (SRL) properties: 5
- Number of RL/SRL properties that have been mitigated: 15

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Rockaway Meadow Elementary School	School		x
Arlington Plaza	Bus		x
WXMC 1310	Communication	x	x
Takeout Dam	Dam	x	x
Parsippany Dike	Dam	x	x
Powder Mill Pond Dam	Dam	x	x
Lake Parsippany Dam	Dam	x	x
Littleton Well Property		x	x

**Identified lifeline*

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and bounce back after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Parsippany-Troy Hills. The Township of Parsippany-Troy Hills has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect 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 of Parsippany-Troy Hills changed the hazard ranking for geological hazards from low to medium.

Table 9: Township Parsippany-Troy Hills Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High

Hazard	Ranking	Hazard	Ranking
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	High	Wildfire	Medium
Geological Hazards	Medium		

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2.5 COMPLETED ACTIONS

Township of Parsippany-Troy Hills reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Parsippany-Troy Hills reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Parsippany-Troy Hills Township	Flood study for flood prone streets.	Flooding occurs on New Road, Vail Road between Carlson Place and Montville, Chesterfield Drive, Holmdel Drive, Sandalwood Drive, Larkspur Drive, and Sagamore Road.	Conduct an engineering study to determine appropriate mitigation action. Implement selected action. New Road flooding has major impact from Interstate Highway traffic; roadway is used by motorists traveling from I-80 W/B to I-280 E/B and I-280 W/B to I-80 E/B.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				New Road flooding also has impact on emergency response to critical infrastructure (Parsippany Sewer Plant) and high hazard Hazmat location (Mane, 259 New Rd).		
2	Parsippany-Troy Hills Township	Flood wall along river Sagamore Street.	Sagamore Street is flood prone	Construct flood wall along river along Sagamore Street	Yes	Not Started
3	Parsippany-Troy Hills Township	Floodwall extension on Cayuga Road and Hoffman Avenue.	The floodwall on Cayuga Road and Hoffman Avenue needs to be extended to provide proper flood protection	Construct and extend current floodwall that runs between Cayuga Road and Hoffman Avenue.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
4	Parsippany-Troy Hills Township	Support elevation/acquisition of SRL, RL and NFIP insured properties within the Township	The Township has 45 repetitive loss properties and 5 severe repetitive loss (SRL) properties	Support elevation/acquisition of SRL, RL and NFIP insured properties within the Township	yes	In Progress
5	Parsippany-Troy Hills Township	Backup pump for Rockaway Boulevard Pump Station	The Rockaway Boulevard Pump Station lacks a backup pump. Pump is required to prevent residential flooding in lower Lake Hiawatha area.	Construct a backup pump system for pumping station on Rockaway Boulevard between Lakeshore Drive and Wilbur Avenue.	Yes	In Progress
6	Parsippany-Troy Hills Township	Dams in flood zone	The Township has numerous dams located in the flood zone. It is already known that Forge Pond Dam on Springfield Court and Mirror Lake Dam on Elmwood Drive is in need of replacement or upgrade.	Conduct an engineering study to determine status of dams and level of flood protection. Upgrade dams or replace dams if upgrades are not possible.	Yes	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
7	Parsippany-Troy Hills Township	Increase capacity of undersized culvert in Jefferson Road	The culvert in Jefferson Road is undersized.	Upgrade the culvert with an upsized culvert.	Yes	In Progress
8	Parsippany-Troy Hills Township	Drainage pipe inspection	Drainage pipe from Lake Hiawatha School to Rockaway River needs to be inspected to ensure it is still functional. Fear of collapse due to age.	Engineering will inspect the pipe and make any necessary improvements	Yes	Not Started
9	Parsippany-Troy Hills Township	Survey of water infrastructure	Aging water infrastructure is leading to many water main breaks, specifically during extreme temperature events.	Engineering will complete a survey of water infrastructure system and complete necessary upgrades.	No	New
10	Parsippany-Troy Hills Township	Flood protection for New Road	New Road: municipal road links 246 and 280. Main cut through for travels from 280 to 80. Local cut through.	Conduct flood study to determine possible mitigation actions. Implement selected action.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			When Rockaway River over-tops, the road is flooded.			
11	Parsippany-Troy Hills Township	Backup power for Police Athletic Building on Baldwin Road.	The facility lacks backup power	Purchase and install backup generators and necessary electrical components.	Yes	Not Started
12	Parsippany-Troy Hills Township	Backup power for Community Center (shelter) on Knoll Road.	The facility lacks backup power	Purchase and install backup generators and necessary electrical components.	Yes	Not Started
13	Parsippany-Troy Hills Township	Alert system downstream of Boonton Dam	There is no alert system downstream of Boonton Dam.	Establish alert system downstream of Boonton Dam in conjunction with Boonton Town and Montville.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
14	Parsippany-Troy Hills Township	Parsippany-Troy Hills Township School District generators	Parsippany-Troy Hills Township School District lacks backup generator	Purchase and installation of generators	Yes	Not Started

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2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1		<u>Engineering</u>		HMGP, Municipal Budget	Reduction in flood risk in selected areas

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
2	Flood		Goal 1		<u>Engineering</u>		HMGP, PDM, FMA, Municipal budget	Reduction in flooding of streets and residential properties
3	Flood		Goal 1		<u>Engineering</u>		HMGP, PDM, FMA, Municipal budget	Increased flood protection and reduction of risk to residential properties
4	Flood		Goal 1		<u>Engineering</u>		HMGP, HMA Grants	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
5	Geological Hazards		Goal 4		<u>Engineering</u>		Municipal budget	Continuity of operations. Replaces 35-year-old pump and provides for redundancy.
6	Flood		Goal 1		<u>Engineering</u>		HMGP, PDM, FMA, Municipal budget	Prevent dam failure
7	Flood		Goal 1		<u>Engineering</u>		Municipal budget, HMGP	Reduce flood risk to roadways and flooding of commercial buildings.
8	Flood		Goal 1		<u>Engineering</u>		Municipal Budget	Prevent collapse and blockages resulting in

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
								flooding of residential properties
9	Extreme Temperature		Goal 1		<u>Engineering</u>		Municipal Budget	Reduction in water breaks
10	Flood		Goal 1		<u>Engineering</u>		Municipal budget, HMGP	Reduction in flooding to vital transportation link between 2 interstate highways and 1 US highway and flooding to garden apartment complexes.
11	Severe Weather	Severe Winter Weather	Goal 1		<u>OEM</u>		FEMA HMGP and PDM, USDA Community Facilities	Continuity of operations

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
							Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	
12	Severe Weather	Severe Winter Weather	Goal 1		<u>OEM</u>		FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Continuity of operations

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
13	Flood		Goal 1		<u>OEM, Boonton Town, Montville</u>		Municipal budgets of Parsippany, Boonton, Montville	Increase emergency notifications.
14	Severe Weather	Severe Winter Weather, Flood	Goal 1		<u>Parsippany-Troy Hills Township School District, OEM</u>		FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Continuity of operation maintained

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-250k	3-5 years	2	2	2	2	1	9	Medium
2	Over \$1M	3-5 years	2	3	2	2	1	10	Medium
3	Over \$1M	3-5 years	2	3	2	2	1	10	Medium
4	\$750k-\$1M	1-3 years	2	3	3	2	3	13	High
5	Over \$1M	1-3 years	3	3	3	3	3	15	High
6	\$500k-\$750k	1-3 years	2	2	2	2	2	10	Medium
7	\$250k-\$500k	Under 1 year	2	3	3	2	3	13	High
8	Under \$50k	Under 1 year	1	2	1	2	2	8	Low
9	\$500k-\$750k	3-5 years	1	1	2	1	2	7	Low

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
10	Over \$1M	3-5 years	2	3	3	2	3	13	High
11	\$250k-\$500k	3-5 years	1	1	1	1	2	6	Low
12	\$250k-\$500k	3-5 years	1	1	1	1	2	6	Low
13	\$50k-250k	3-5 years	2	1	1	1	2	7	Low
14	\$250k-\$500k	1-3 years	2	1	1	1	2	7	Low

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Figure 1: Township Parsippany-Troy Hills Hazard Area Extent and Location Map 1

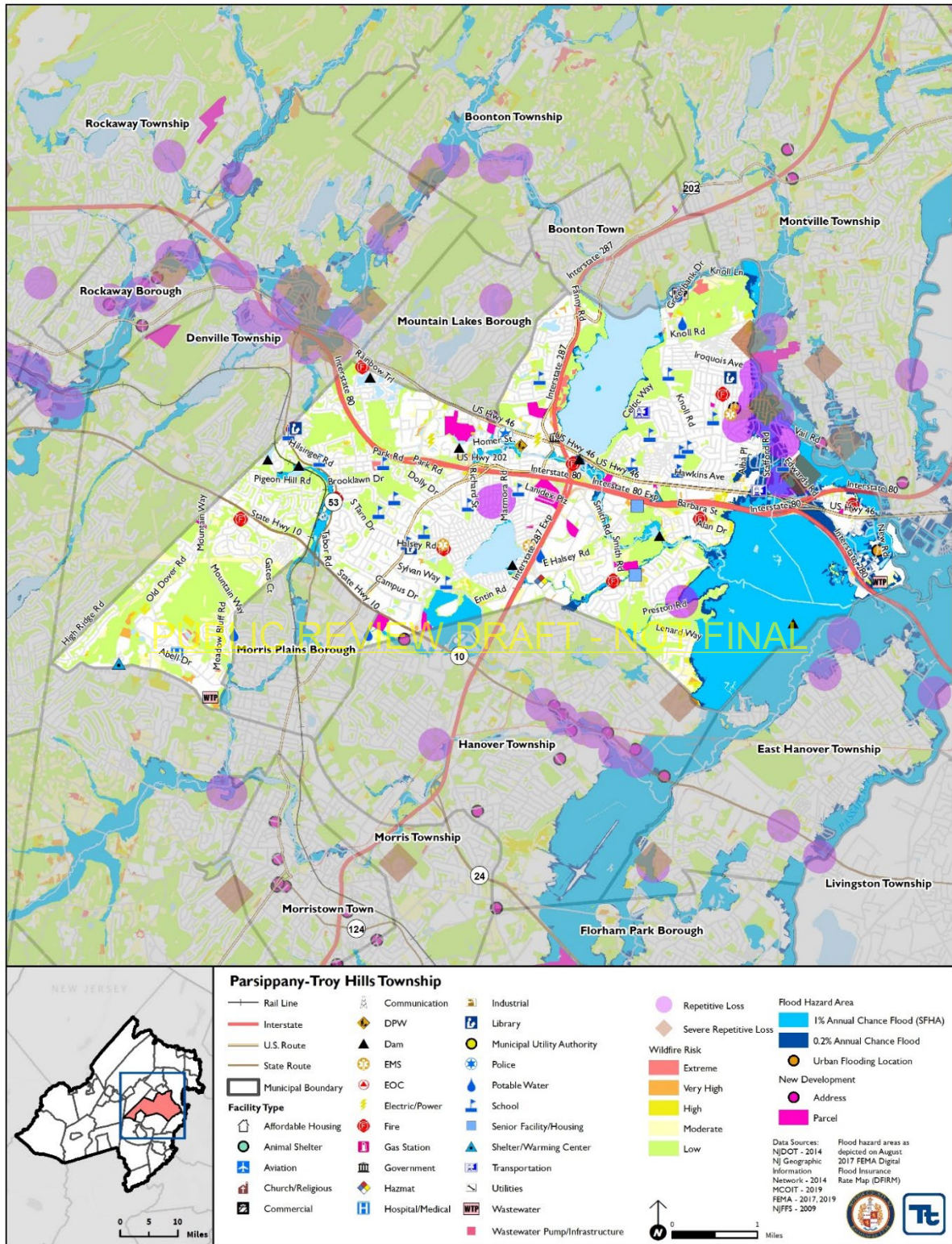
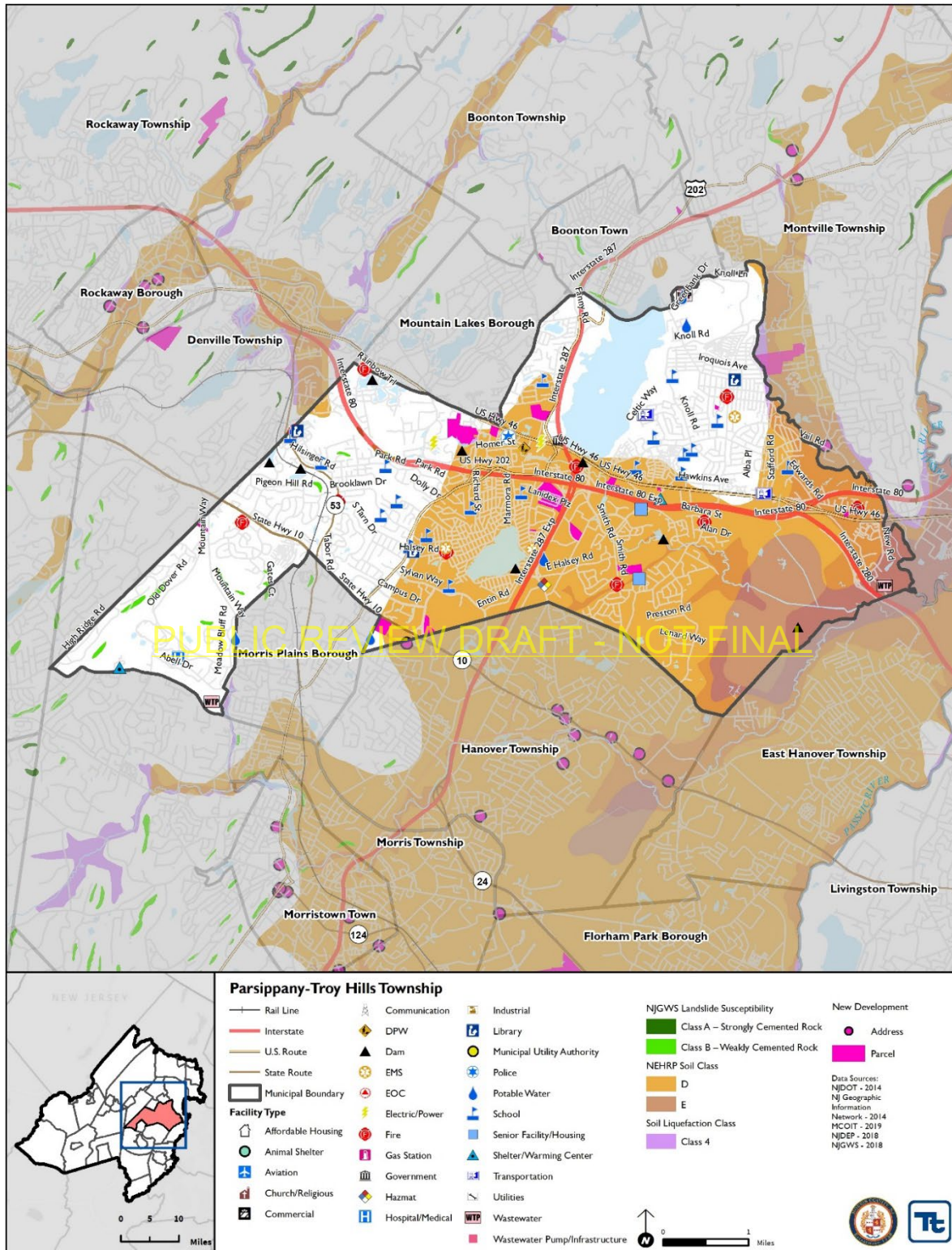


Figure 2: Township Parsippany-Troy Hills Hazard Area Extent and Location Map 2



APPENDIX 32: TOWNSHIP OF PEQUANNOCK COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Pequannock and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State, Local	Yes	No	-
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Chapter 64 of the municipal code. Uniform Construction Codes. Administered by the Construction official.					
Zoning Code	Yes	Local	Yes	No	-
Comment: Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Chapter 189 of the municipal code. Zoning. Administered by the Zoning Officer. The Zoning Ordinance) was adopted to:					
<ul style="list-style-type: none">• To secure safety from fire, flood, panic and other natural and man-made disasters.• To provide adequate light, air and open space.• To ensure that the development of Pequannock Township does not conflict with the development and general welfare of neighboring municipalities, the county and the state as a whole.• To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and the preservation of the environment.• To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open spaces, both public and private, according to their respective environmental requirements in order to meet the needs of Township residents and the region of which the Township is a part.• To promote a desirable visual environment through creative development techniques and good civic design and arrangements.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">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.					
Subdivisions	Yes	Local	Yes	No	-
Comment: Chapter 316 of the municipal code: Subdivision of land. Administered by the Planning Department.					
Stormwater Management	Yes	State, Local	Yes	No	-
Comment: Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 308 of the municipal code; Stormwater Management Regulations; Rev. February 20221. .					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1; Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	Local	Yes	Yes	No
Comment: State mandated at local level; Incorporated into Flood Damage Prevention Ordinance; June 2014. Administered by the Planning Department.					
Shoreline Development	No	-	-	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	No	No	-
Comment: Chapter 360 of the municipal code, Zoning. Updated periodically. Administered by the Engineering Department.					
Environmental Protection	Yes	State, Local	Yes	No	-
Comment: The rules that are utilized by the NJDEP and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. Chapter 88 Air Pollution, Chapter 144 Environmental Impact.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Flood Damage Prevention	Yes	Local	Yes	-	-
Comment: Chapter 171 of the municipal code, Flood Damage Prevention. Administered by the Manager. Ordinance includes 3 feet of freeboard for residential construction, 2 feet of freeboard for non-residential construction.					
Wellhead Protection	No	-	-	-	-
Comment:					
Emergency Management	Yes	Local	No	-	-
Comment: Chapter 166, Emergency Medical Service. Chapter 83, Fire Prevention					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment: Reexamined in 2003, 2009, and 2019. Administered by the Planning department. The plan includes goals to preserve lakes and wetlands, clean up refuse, limit development, promote clean air, promote vegetative buffers, preserve and protect area of confluence along Pequannock and Wanaque Rivers, protect aquifer recharge areas, protect groundwater quality, and preserve Pio Costa tract's floodwater retention capability. The December 9, 2019 Master Plan Reexamination includes new categories in the Land Use Element – Storm Resiliency, Smart Growth, Environmental Sustainability.					
Capital Improvement Plan	Yes	Local	Allowed	Yes	No
Comment: 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. The Township's plan is updated annually and is administered by the Township Manager.					
Disaster Debris Management Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Floodplain or Watershed Plan	Yes	Local, County	No	No	
Comment: Elements of Master Plan and 2012 Flood Acquisition Plan (with Morris County),are administered by the Engineer and Flood Resilience Officer. Pequannock Township is developing a Watershed Management Plan with the USACE for the Pompton River Watershed in 2023/2024. Additionally, a new Floodplain Management Plan that meets CRS requirements will be developed in 2024/2025.					
Stormwater Management Plan	Yes	Local and State	Yes	Yes	-
Comment: 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). The Stormwater Management Plan is incorporated in the Master Plan and Ordinances, 2009 and PEQ 2019 Master Plan. The Plan is administered by the Township Engineer.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	-	-
Comment: <u>Required as part of NJDEP Stormwater Discharge Permit, updated periodically; last revision May 2022</u>					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	Yes	Local	No	Yes	No
Comment: part of 2019 Master Plan					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	Yes	Local	No	Yes	No
Comment: Circulation Element is a part of 2019 Master Plan					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	No
Comment: Storm Resiliency, Smart Growth, Environmental Sustainability Element were adopted as part of 2019 Master Plan/Land Use Element					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	Yes	Local	No	Yes	-
Comment: Economic Development Element, part of 2019 Master Plan					
Open Space Plan	Yes	Local	No	No	-
Comment: The Open Space Plan (2012) has a goal to maintain a balance between preserving its natural and historic places and redeveloping its landscape to both protect its residents from the flood risk inherent to the rivers, while also furthering the enjoyment of those sites. The Plan includes a recommended action to use land acquisition to create buffers and seek financial assistance for buyouts. A map of hazard areas is included.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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. The Township’s Emergency Operations Plan has Hazardous Materials and Hazardous Weather annexes. The Hazardous weather annex includes information in alignment with the Hazard Mitigation Plan. The Plan also has an evacuation annex. Plan last updated in 2012.The plan is administered by the Township Manager/OEM Coordinator.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	No	No
Comment: 2012 Emergency Operations Plan, will update in 2020					
Public Health Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment: PUBLIC REVIEW DRAFT - NOT FINAL					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Planning & Construction Departments
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes, the township has GIS information on buildable lands. A Build-out analysis was performed and included in the Township's 2022 Stormwater Management Plan

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Pequannock.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning, Volunteers, Professionals
Mitigation Planning Committee	Yes	Township Manager, Flood Resilience Officer, OEM, Township Engineer, DPW, Construction Official, Police, Fire, Planning, Zoning and Volunteers
Environmental Board / Commission	Yes	Volunteers
Open Space Board / Committee	Yes	Volunteers
Economic Development Commission / Committee	Yes	Volunteers
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Smart 911, Nixle, Pequannock Flood App (phone), Reverse 911, radio station 1620 AM, dedicated Public Information phone line, website: Notify Me, Announcements, News Flash, Severe Weather Alert, Flood Information page, (USGS) Pompton River Hydrograph & Inundation mapping
Maintenance program to reduce risk	Yes	Flood Resilience Officer, Township Engineer, Department of Public Works
Mutual aid agreements	Yes	Verbal agreement with Lincoln Park
Flood Control Advisory Committee	Yes	Volunteers, Twp Council liaison, Flood Resilience Officer (staff liaison)
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Professional Engineer, Planners and Staff
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Official, Township Engineer, multiple Construction Subcode, Officials
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer, Planners, Flood Resilience Officer and Staff
Staff with training in benefit/cost analysis	Yes	Flood Resilience Officer
Staff with training in green infrastructure	Yes	Township Engineer
Staff with education/knowledge/training in low impact development	Yes	Township Engineer
Surveyor	Yes	The township retains a contract surveyor
Stormwater engineer	Yes	Township retains a consulting stormwater Professional Engineer
Personnel skilled or trained in GIS applications	Yes	Engineering & Zoning Department staff, Flood Resilience Officer
Local or state water quality professional		Township Engineer, Director of DPW
Scientist familiar with natural hazards in local area	No	Member of Flood Control Advisory Committee
Emergency manager	Yes	OEM Coordinator, (2) Deputy Coordinators
Watershed planner	No	
Environmental specialist	Yes	Flood Resilience Officer
Grant writers	Yes	Township Administrator, Flood Resilience Officer, Township Engineer
Resilience Officer	Yes	Flood Resilience Officer
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Pequannock.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, limited availability based on demographics
Capital Improvements Project Funding	Yes, directed by Township Manager & Council
Authority to Levy Taxes for Specific Purposes	Yes, limited by statute
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	Yes, Morris County Flood Mitigation Program (acquisitions)

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Pequannock.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes: FAQs, Public Alerts, Mitigation Tips & Resources, Flood Maps, Pompton River Hydrograph, and Rain Gages
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes: Facebook page, Shelter Info
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes, Flood Control Advisory Committee meets quarterly
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes: Smart 911, Reverse 911, Nixle, Township website: Notify Me, Announcements, News Flash, Severe Weather Alert
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes; Smart 911, Nixle, Reverse 911, radio station 1620 AM, dedicated Public Information phone line, Township website: Notify Me, Announcements, News Flash, Severe Weather Alert, Flood Information page, (USGS) Pompton River Hydrograph & Inundation mapping

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Pequannock.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	5	February 20, 2019
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4 - Residential, 3 - Non-Residential	April 18, 2012
Public Protection (Fire ISO Protection Class)	Yes	3	December 1, 2011
Storm Ready Certification	Yes	-	2002
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	July 12, 2011

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Dept. Public Works/Engineer
Who is your floodplain administrator? (name, department/position)	Town Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes, four in all
What is the date that your flood damage prevention ordinance was last amended?	June 10, 2014
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Exceeds. The Township has a freeboard requirement of +3 feet.
When was the most recent Community Assistance Visit or Community Assistance Contact?	September 20, 2018.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes, revised preliminary FIRMs
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	No, revised preliminary FIRMs are being corrected by FEMA
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
☐ If so, what type of assistance/training is needed?	Written assistance request was made to USACE-Silver Jackets division on May, 30, 2019
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	Yes and Yes
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	Flood insurance policies: 704 Insurance in force: \$164,198,700 Premium in force: \$1,455,885
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	Total loss claims: 2,223 Claims open or closed without payment: 196 Total payments for losses: \$66,248,514

Criterion	Response
Do you maintain a list of properties that have been damaged by flooding?	Yes - substantially damaged homes
Do you maintain a list of property owners interested in flood mitigation?	Yes

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Pequannock that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Pequannock has significant exposure. A map of the Township of Pequannock hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

Below is a summary of the repetitive and severe repetitive flood losses in the Township of Pequannock.

- Number of repetitive loss (RL) properties: 241
- Number of severe repetitive loss (SRL) properties: 123
- Number of RL/SRL properties that have been mitigated: Total = 93 homes: 57 flood acquisitions and 36 home elevations

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain and presents HAZUS-MH estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Chilton Memorial Hospital*	Hospital	X	X
Netherlands Reformed Christian	School	X	X
Chancellor Academy	School		X

*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Table 9.32-12 (Summary of Risk Assessment). The ranking process involves an assessment of the likelihood of

occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

Each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and bounce back after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Pequannock. The Township of Pequannock has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township changed the municipal ranking for:

- Dam Failure - from low to high.
- Drought - from medium to low.
- Earthquake - from medium to low.
- Temperature - from medium to high.
- Geological Hazards - from medium to low.
- Hazardous Substances - from high to medium.

Table 9: Township of Pequannock Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Low	Hazardous Substances	Medium
Earthquake	Low	Severe Weather	High
Extreme Temperature	High	Severe Winter Storm	High
Flood	High	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

Township of Pequannock reported no completed actions.

2.6 CANCELLED ACTIONS

The following actions were noted as cancelled:

- **Action:** Create a comprehensive evacuation plan for public use. **Reason:** No reason provided.
- **Action:** Organize an Elevation Certification Workshop for homes in the SFHA. **Reason:** No reason provided.
- **Action:** Develop a specific flood mitigation plan to rent pumps when the need arises. **Reason:** No reason provided.
- **Action:** Conduct outreach to church/school ownership and provide mitigation options. **Reason:** No reason provided.
- **Action:** Reduce insect-borne diseases by lowering the mosquito populations. **Reason:** No reason provided.

2.7 HAZARD MITIGATION STRATEGY

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Pequan-nock Township	Develop a CRS-approved Floodplain Management Plan.	Lack of a cohesive, comprehensive Floodplain Management Plan	The Township will write a new Floodplain Management Plan to be fully prepared and earn CRS credit.	Yes - 0012	Not Started
2	Pequan-nock Township	Pompton Dam Failure Protocol	Need a defined, local action plan in the event of the Pompton Dam failing	Work with Pompton Dam officials to develop local protocol	Yes - 018	Not Started
3	Pequan-nock Township	Home Elevation/Acquisition Program	The township has numerous repetitive loss properties.	Elevate/acquire flood-vulnerable properties, including severe repetitive and repetitive loss properties located in the Township.	Yes - 003	In Progress
4	Pequan-nock Township	All-hazards Public Education and	Residents need to be educated on hazards.	Develop/ Enhance all-hazards public education and outreach program for hazard mitigation and preparedness.	Yes - 006	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
		Outreach Program - PPO Program				
5	Pequan-nock Township	Develop Watershed Management Plan	Twp needs a detailed understanding of the effects of various storm/flooding events on our watershed and stormwater mgmt. systems, to prepare for and mitigate future events.	The Township will develop a Watershed Management Plan.	Yes - 013	In Progress
6	Pequan-nock Township	Automated Flood Warning System	No automated Public Alert system for PEQ residents in major flood events	Research, chose and publicly launch an automated Flood Warning System	Yes - 016	In Progress
7	Pequan-nock Township	Pompton River De-snagging and Debris Removal Program	Pompton River (main flooding source) is clogged with debris and silt	Annual de-snagging program to enhance flood attenuation	Yes - 025	In Progress

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
8	Randolph Township	Stormwater flooding - Franklin Rd near Denville border	Stormwater back-up on Franklin Rd along roadway between Rockaway Rd & Denville Twp. Line. This area is composed of wetlands, low-income housing, light industrial for Randolph. For Denville Twp, it contains some of their well fields and pump house.	Coordinate with Denville Twp & County DOT regarding this repetitive flooding issue. The Rockaway River issues are increased by construction completed by NJ Transit drainage changes after bridge construction in 2006. 2023 has brought more severe rains and more flooding. NJ EPA has stopped the county mosquito comm from cleaning channels to allow water to drain	yes, only worse now with the larger rain amounts per storm	NJ Transit has assembled a large grate to keep debris from entering a major drain, and they have also done some clean up. Drain seems to be bringing water from river into neighborhood in-

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
		PUBLIC REVIEW DRAFT - NOT FINAL				stead of taking into the river.
9	Randolph Township	Burnett Brook Dr. retention basin	The pond is almost completely full of silt which greatly reduces its storage capacity. The South Road bridge just downstream on the Chester/Mendham border becomes impassable after heavy rain.	Rehabilitate/restore retention basin		

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
10	Randolph Township	Stormwater Flooding – State Route 10	<p>There is a single grate on either side of the Route 10 underpass and collects stormwater from Sussex Turnpike (1.2 miles) (near 1152 Route 10); pipe installed in 1930's when needs were different (development has increased). The Township DPW has examined the location and determined the pipe is facing the wrong way into the River; drainage ditch and pipe is full of 5-ft of sediment. Black River Pond is going back up into the pipe and flooding Sussex Tpke. This creates a safety issue for cars that drive through the flooding; police/fire are called to assist; eventually drains down but a</p>	<p>Coordinate with the State DOT regarding this repetitive flooding issue. The DOT needs to remove the sediment in the Right of Way and provide maintenance to its infrastructure. Request this project be included in the State of NJ Hazard Mitigation Plan. In the short-term, the Township may install signage to warn vehicles of potential flooding and mark flood depths.</p>	yes, only worse now with the larger rain amounts per storm	not started, NJ DEP told us they have a plan, but are not ready to share it with the township at this time. Planning to start in 2028

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			problem for residents. One police car was lost due to the flood waters; and rescues have been made for stranded residents in vehicles caught in these flood waters			

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 3		<u>Flood Resilience Officer</u>	<u>Flood Resilience Officer</u>	Municipal budget, USACE Silver Jackets	Improved Floodplain management planning
2	Flood		Goal 3		<u>Flood Resilience Officer, OEM Manager, Dam Officials</u>	<u>Flood Resilience Officer, OEM Manager, Dam Officials</u>	Municipal budget	Improved emergency warning
3	Flood		Goal 3	Goal 2	<u>Flood Resilience Officer</u>	<u>Flood Resilience Officer</u>	HMA Grants, FMA	Flood risk reduced
4	Severe Weather		Goal 3		<u>County OEM, Municipal</u>	<u>County OEM, Municipal OEM,</u>	Municipal Budget	Improved education

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
					<u>OEM, Flood Resilience Officer</u>	<u>Flood Resilience Officer</u>		on hazards
5	Flood		Goal 3	Goal 2	<u>Flood Resilience Officer, Township Engineer</u>	<u>Flood Resilience Officer, Township Engineer</u>	Municipal budget, USACE Silver Jackets	Improved watershed planning
6	Flood		Goal 3		<u>Flood Resilience Officer, OEM Manager</u>	<u>Flood Resilience Officer, OEM Manager</u>	Municipal budget	Improved emergency warning
7	Flood		Goal 3	Goal 2	<u>Township Engineer, DPW</u>	<u>Township Engineer, DPW</u>	Municipal budget, PDM	Flood risk reduced

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
8	Flood	More housing in the area.			<u>Township leads outreach to the State DOT and installation of sign; NJDOT</u>	we hope NJ Transit	FEMA HMA	High
9					<u>Township</u>		FEMA HMA	High
10	Flood				<u>Township leads outreach to the State DOT and installation of</u>		State DOT; Township budget	High

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
					sign: NJDOT			

2.7.3 STRATEGY RANKING AND PRIORITIZATION

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	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-250k	3-5 years	1	2	2	1	2	8	Low

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
2	Under \$50k	1-3 years	3	1	2	2	2	10	Medium
3	Over \$1M	1-3 years	2	3	3	3	3	14	High
4	Under \$50k	1-3 years	2	3	3	2	2	12	Medium
5	Under \$50k	3-5 years	2	2	2	2	2	10	Medium
6	Under \$50k	Under 1 year	3	3	3	3	3	15	High
7	Under \$50k	Under 1 year	2	2	2	2	2	10	Medium
8	\$50k-250k	3-5 years	2	3	1	1	2	9	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
9	\$50k-250k	3-5 years	1	3	2	2	2	10	Medium
10	\$50k-250k	3-5 years	2	2	3	3	2	12	Medium

PUBLIC REVIEW DRAFT - NOT FINAL

Figure 1: Township of Pequannock Hazard Area Extent and Location Map 1

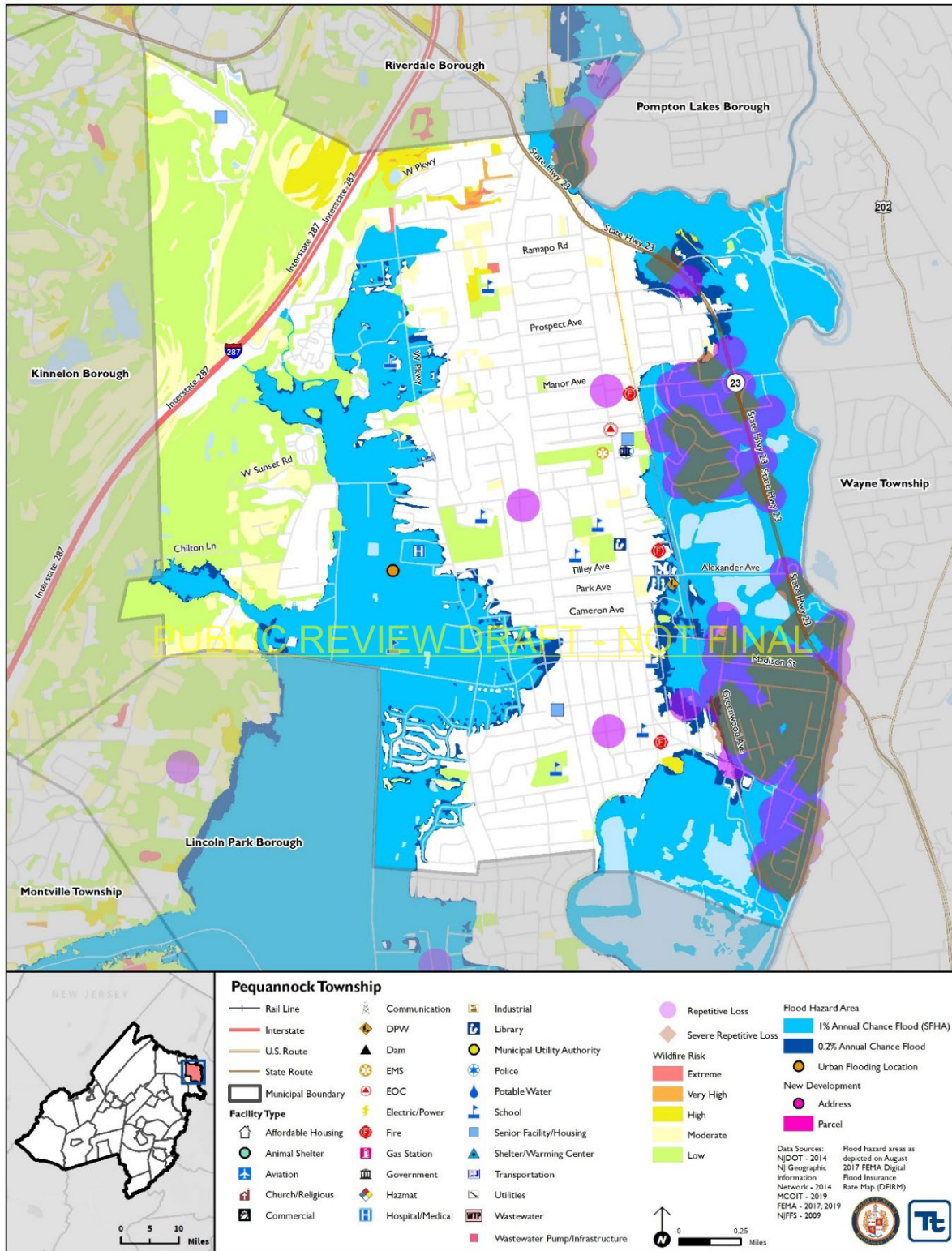
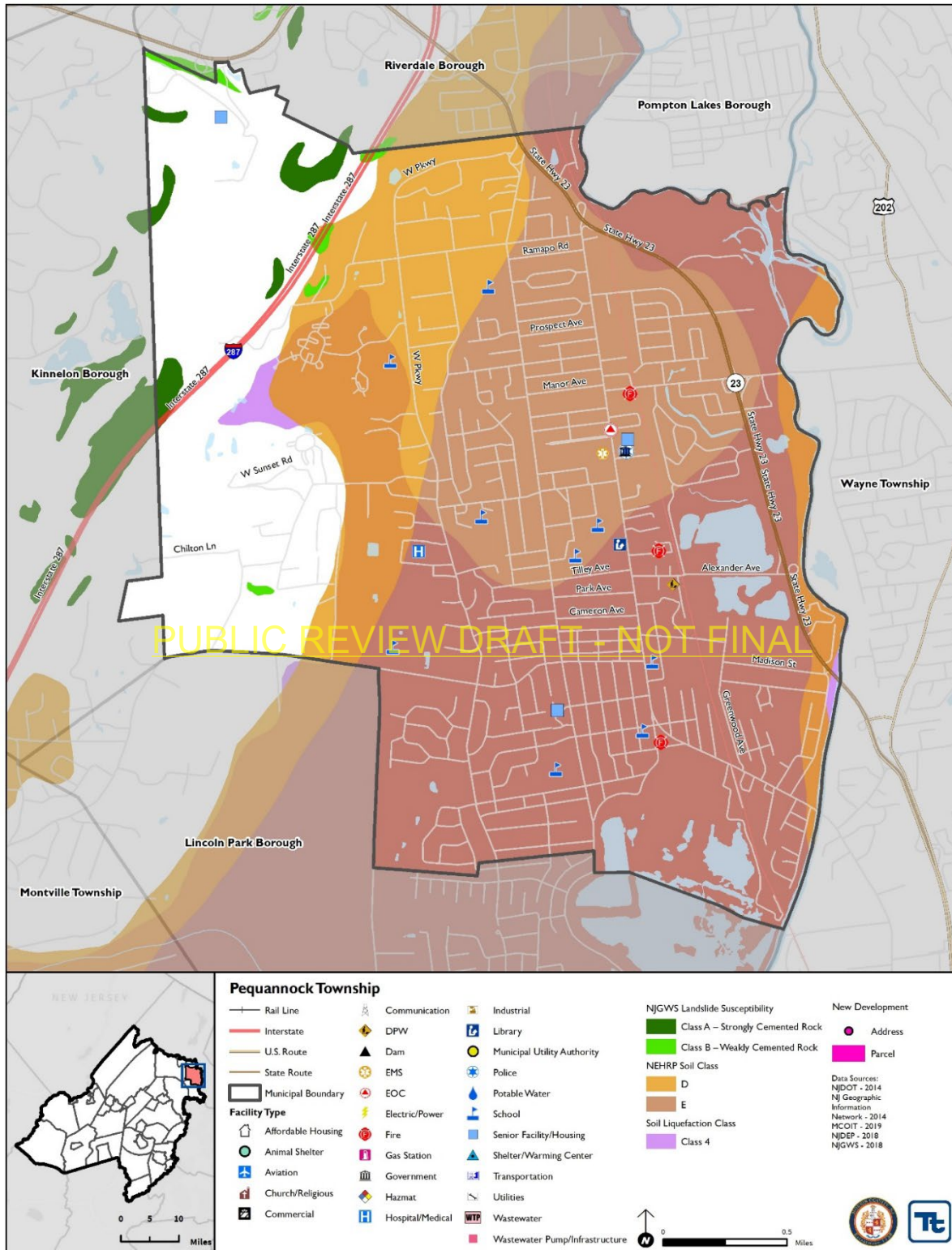


Figure 2: Township of Pequannock Hazard Area Extent and Location Map 2



APPENDIX 33: TOWNSHIP OF RANDOLPH COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Randolph and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
PUBLIC REVIEW DRAFT - NOT FINAL					
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes		
Comment: Building Department, State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) Chapter 12 adopted; 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.					
Zoning Code	Yes	Local	Yes		
Comment: Land Development Code, Ordinance 10-23 adopted) April 20, 2023; Zoning Board of Adjustment is appointed by the Township Council; Article III Zoning - the provisions of this Article shall be held to be minimum requirements adopted for the promotion of the public health, safety, morals and general welfare, consistent with the purposes set forth at N.J.S.A. 40:55D-2. Any deviation proposed from the use and bulk requirements of this Article shall require a variance pursuant to N.J.S.A. 40:55D-70c or d or N.J.S.A. 40:55D-60a.					
Subdivisions	Yes	Local	Yes	Yes	
Comment: Township Council Land Development Ord. Article V. The purpose of good subdivision and site design is to create a functional and attractive development, to minimize adverse impacts, and to ensure a project will be an asset to a community. Development laid out to avoid adversely affecting					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
groundwater and aquifer recharge; reduce cut and fill; avoid unnecessary impervious cover; to prevent flooding.					
Stormwater Management	Yes 03/06/2014	Local	Yes	Yes	
Comment: Township Council Land Development Ord. Article VIII (Stormwater Control) February 18, 2021. Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management measures and proper maintenance plans. Non-structural measures include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated loading 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	No				
Comment:					
Real Estate Disclosure	Yes	State			
Comment: Division of Consumer Affairs N.J.A.C. 13:45A-29.1 Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No				
Comment:					
Site Plan Review	Yes	Local	Yes	Yes	
Comment: Refer to the Township Council Land Development Ord. Article V above					
Environmental Protection	No				
Comment:					
Flood Damage Prevention	Yes	Federal, State, Local	Yes		
Comment: Chapter 22 (Flood Management). It is the purpose of this chapter to promote the public health, safety and general welfare, to qualify the township and its property owners for benefits of the					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
National Flood Insurance Program by fulfilling the standards of 44 CFR 59, section 60.3(d), and to minimize public and private losses due to flood conditions in specific areas.					
Wellhead Protection	No				
Comment: There are wellhead protection areas in the Township according to the Stormwater Management Plan (Figure 6)					
Emergency Management	No				
Comment:					
Climate Change	No				
Comment:					
Disaster Recovery Ordinance	No				
Comment:					
Disaster Reconstruction Ordinance	No				
Comment:					
Other					
Comment: <ul style="list-style-type: none">• Municipal Separate Storm Sewer System (MS4) – Yes, State and Local, DPW, Ordinance 13-10• Article IV (Regulations for Development Within Steep Slope Areas) Local Township Council, Land Development Ord. Article IV					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	
Comment: Planning Board, 2006 Master Plan; Master Plan Re-exam in July 2016. General goal is to permit development in a manner to protect environmentally sensitive areas and features.					
Capital Improvement Plan	Yes	Local			
Comment: Township Council Capital Improvement Plan; Supplemental 6 Year Plan to be included with Municipal Budget					
Disaster Debris Management Plan	Yes	Local			

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Permanent site identified for debris collection; mulch and distribute; curb-side collection program; written plan from the State to store vegetative material; health dept got the certificate and health dept manages it; three alternate sites for major storms					
Floodplain or Watershed Plan	No				
Comment:					
Stormwater Management Plan	Yes	Local			
Comment: Planning Board Storm Water Management Plan 2005 Plan, part of NJDEP Permit (03/21/2005)					
Stormwater Pollution Prevention Plan	Yes	Local	Yes		
Comment: 2008; process of updating the plan and updating under the NJDEP-required format; outlines responsibilities for maintenance of Township owned facilities and outreach to private owned facilities					
Urban Water Management Plan	No				
Comment:					
Habitat Conservation Plan	No				
Comment:					
Economic Development Plan	No				
Comment:					
Shoreline Management Plan	N/A				
Comment:					
Community Wildfire Protection Plan	No				
Comment:					
Community Forest Management Plan	No				
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Transportation Plan	Yes 01/16/2006	Local			
Comment: Planning Board 2006 Master Plan Circulation Element					
Agriculture Plan	No				
Comment:					
Climate Action Plan	No				
Comment:					
Tourism Plan	No				
Comment:					
Business Development Plan	No				
Comment:					
Other					
Comment:					
<ul style="list-style-type: none"> Open Space Plan – Yes 1/03/14, Local Environmental Committee, Open Space Program Acquisition and Trail Plan 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	
Comment: OEM EOP 2018; includes many of the hazards included in the hazard mitigation plan (i.e., flood, earthquake, landslide, hurricane, storm, epidemic, hazardous materials)					
Threat & Hazard Identification & Risk Assessment (THIRA)	No				
Comment: Informal Risk Assessment Planning (County/Local Emergency Training)					
Post-Disaster Recovery Plan	No				
Comment:					
Continuity of Operations Plan	Yes				

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Refer to the EOP annex					
Public Health Plan	Yes				
Comment: Refer to annex in the EOP; recently updated					
Other					
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Building/Zoning
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No _____ Significantly Built Out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Randolph.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board/Zoning Board of Appeals
Mitigation Planning Committee	No	Insert appropriate information
Environmental Board / Commission	Yes	Environmental & Landmark Committee, advisory to Township Council
Open Space Board / Committee	No	Function of Environmental & Landmark Committee
Economic Development Commission / Committee	Yes	Yes, Advisory to Council

Staff/Personnel Resource	Available?	Department/Agency/Position
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE Alert
Maintenance program to reduce risk	Yes	Vegetation Management, Culvert Cleaning
Mutual aid agreements	Yes	Surrounding Communities, Morris County, Surrounding Counties
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Land Use Administrator/Township Consulting Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Consulting Engineer
Planners or engineers with an understanding of natural hazards	Yes	Township Consulting Engineer
Staff with training in benefit/cost analysis	Yes	Township Consulting Engineer
Staff with training in green infrastructure	Yes	Consulting Engineer
Staff with education/knowledge/training in low impact development	Yes	Consulting Engineer
Surveyor	Yes	Township Consulting Engineer
Stormwater engineer		
Personnel skilled or trained in GIS applications	Yes	Land Use Administrator/Township Consulting Engineer
Local or state water quality professional		
Scientist familiar with natural hazards in local area	Yes	Township Consulting Engineer
Emergency manager	Yes	Managers Office
Watershed planner	Yes	Consulting Engineer
Environmental specialist	Yes	Health Department, Engineering
Grant writers	Yes	Managers Office
Resilience Officer	No	
Other	No	

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Randolph.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes – As Applicable
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes - Water and Sewer
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No

Financial Resource	Accessible or Eligible to Use?
Other	

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Randolph.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes- Manager's Office
Do you have personnel skilled or trained in website development?	Yes - Manager's Office, IT, Consultant
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes Links to Stormwater Information, and information for citizens
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook, Twitter
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Traffic Advisory, Environmental and Landmark Committee
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes Quarterly Newsletter, Weekly "E-Blast", Special Mailings
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes RAVE Alert, Social Media

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Randolph.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (Fire ISO Protection Class)	Yes	Class 4	Dec-2017

Program	Participating?	Classification	Date Classified
Storm Ready Certification	No		
Firewise Community Classification	No		
Sustainable Jersey	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Consulting Engineer
Who is your floodplain administrator? (name, department/position)	Consulting Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	1979
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	Not listed in NJDEP's database
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes 10 years in the Municipality
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
☐ If so, what type of assistance/training is needed?	
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No Not enough NFIP Policies in township to make it worth it's while
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	4 NFIP Policies 51 WYO Policies
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	4 NFIP Claims: \$1,764 22 WYO Claims: \$207,610
Do you maintain a list of properties that have been damaged by flooding?	No

Criterion	Response
Do you maintain a list of property owners interested in flood mitigation?	No

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Randolph that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Randolph has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Randolph.

- Number of repetitive loss (RL) properties: 2
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

There are no critical facilities are located in the FEMA 1% and 0.2% Flood Hazard Area

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Randolph. The Township of Randolph has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 8: Township of Randolph Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	Medium
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	Medium
Flood	High	Wildfire	Low
Geological Hazards	Medium		

PUBLIC REVIEW DRAFT - NOT FINAL

2.5 COMPLETED ACTIONS

Township of Randolph reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Randolph reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Randolph Township	Stormwater flooding - Franklin Rd near Denville border	Stormwater back-up on Franklin Rd along roadway between Rockaway Rd & Denville Twp. Line. This area is composed of wetlands, low-income housing, light industrial for Randolph. For Denville Twp, it contains some of their well fields and pump house.	Coordinate with Denville Twp & County DOT regarding this repetitive flooding issue. The Rockaway River issues are increased by construction completed by NJ Transit drainage changes after bridge construction in 2006. 2023 has brought more severe rains and more flooding. NJ EPA has stopped	yes, only worse now with the larger rain amounts per storm	NJ Transit has assembled a large grate to keep debris from entering a major drain, and they have also done some clean up. Drain

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				the county mosquito comm from cleaning channels to allow water to drain		seems to be bringing water from river into neighborhood instead of taking water to the river.
2	Randolph Township	Burnett Brook Dr. retention basin	The pond is almost completely full of silt which greatly reduces its storage capacity. The South Road bridge just downstream on the Chester/Mendham border becomes impassable after heavy rain.	Rehabilitate/restore retention basin		

PUBLIC REVIEW DRAFT - NOT FINAL

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
3	Randolph Township	Stormwater Flooding – State Route 10	There is a single grate on either side of the Route 10 underpass and collects stormwater from Sussex Turnpike (1.2 miles) (near 1152 Route 10); pipe installed in 1930's when needs were different (development has increased). The Township DPW has examined the location and determined the pipe is facing the wrong way into the River; drainage ditch and pipe is full of 5-ft of sediment. Black River Pond is going back up into the pipe and flooding Sussex Tpke. This creates a safety issue for cars that drive through the flooding; police/fire are called to assist; eventually drains down but a	Coordinate with the State DOT regarding this repetitive flooding issue. The DOT needs to remove the sediment in the Right of Way and provide maintenance to its infrastructure. Request this project be included in the State of NJ Hazard Mitigation Plan. In the short-term, the Township may install signage to warn vehicles of potential flooding and mark flood depths.	yes, only worse now with the larger rain amounts per storm	not started, NJ DEP told us they have a plan, but are not ready to share it with the township at this time. Planning to start in 2028

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			problem for residents. One police car was lost due to the flood waters; and rescues have been made for stranded residents in vehicles caught in these flood waters			

PUBLIC REVIEW DRAFT - NOT FINAL

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
4	Randolph Township	Shongum Lake	Shongum Lake is a recreational waterbody with multiple stormwater facilities directly discharging to the lake from various roads and surrounding properties. The lake has been experiencing serious water quality problems that impair its recreational use and aesthetics and has resulted in restrictions on its use to the heavy stormwater runoff from the surrounding properties and roadways. Significant sediment accumulation has occurred in the lake and resulted in reduced water depths due to the erosion of the stormwater discharge channels by the stormwater runoff.	Submit a proposal to NJDEP 2019 Water Quality Restoration Grant to target improving the water quality conditions within Shongum Lake and eliminate algal growth through implementing best management practices (BMPs) to prevent and minimize contaminants from entering directly into the waterbody and the on-going, operation and long term maintenance of sediment management systems and conditions within the watershed and the lake itself through the committed efforts and resources of the Township of Randolph and the SLPOA.	Yes	

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood	More housing in the area.			<u>Township leads outreach to the State DOT and installation of sign; NJDOT</u>	we hope NJ Transit	FEMA HMA	High
2	Flood				<u>Township</u>		FEMA HMA	High
3	Flood				<u>Township leads outreach to the State DOT and installation of sign; NJDOT</u>		State DOT; Township budget	High

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
4	Flood				<u>TOWNSHIP FOR PERMITS</u>	SHONGUM LAKE PROPERTY OWNERS ASSOC.	NJDEP Water Quality Restoration Grant	High

2.7.3 STRATEGY RANKING AND PRIORITIZATION

PUBLIC REVIEW DRAFT - NOT FINAL

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-250k	3-5 years	2	3	1	1	2	9	Medium

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
2	\$50k-250k	3-5 years	1	3	2	2	2	10	Medium
3	\$50k-250k	3-5 years	2	2	3	3	2	12	Medium
4									

Figure 1: Township of Randolph Hazard Area Extent and Location Map 1

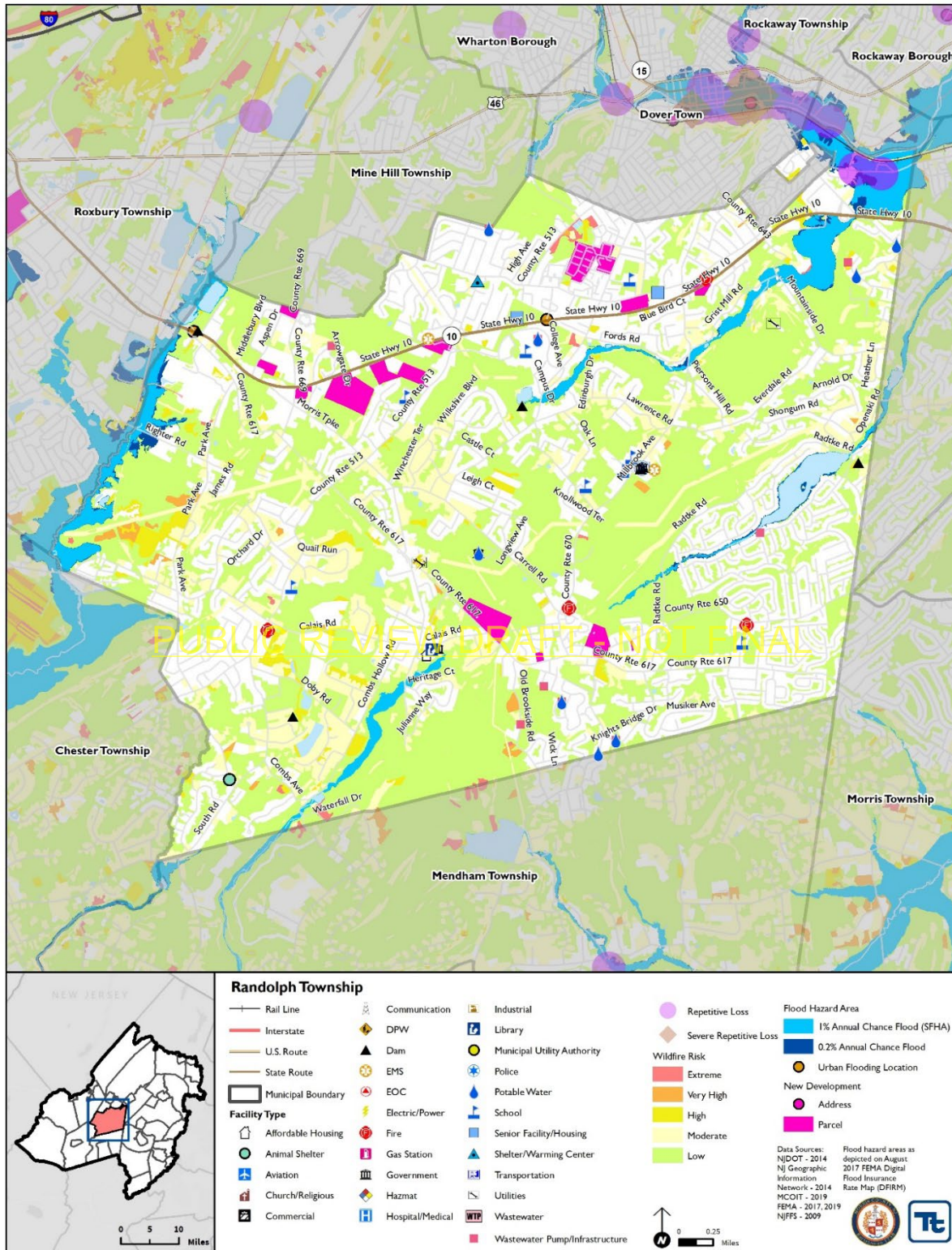
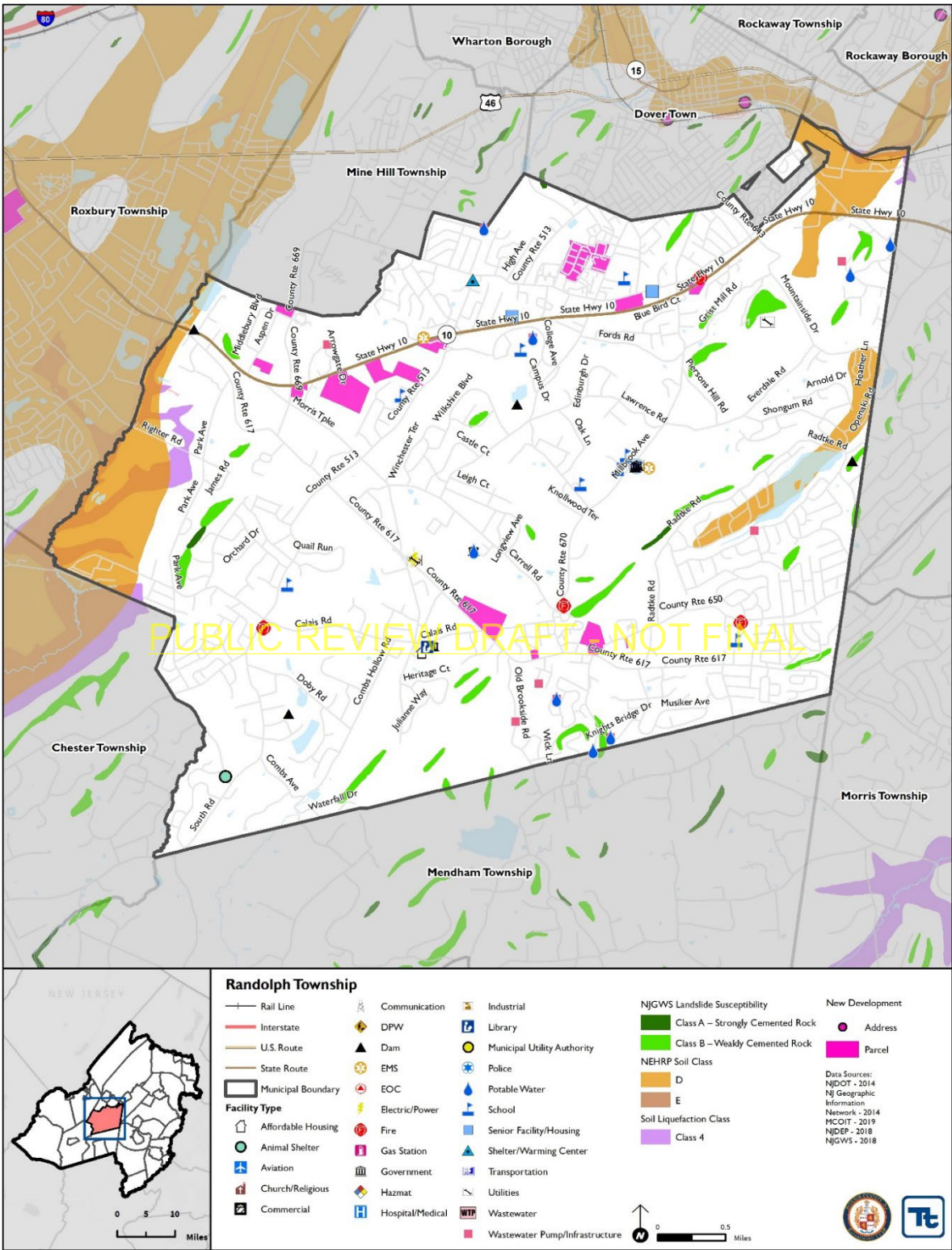


Figure 2: Township of Randolph Hazard Area Extent and Location Map 2



APPENDIX 34: TOWNSHIP OF ROCKAWAY COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Rockaway and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.					
Zoning Code	Yes	Local	Yes	No	No
Comment: State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by Planning Board, Zoning Board of Adjustment, Zoning Officer and Engineering Department, Local Ordinance Chapter 54-30 – Zoning Regulations.					
Subdivisions	Yes	Local	Yes,	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. 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. Enforced by Planning Board, Local Ordinance 54-21 – Site Plan and Sub Division Review Procedures.					
Stormwater Management	Yes	Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Engineering Department, Local Ordinance Chapter 25-Stormwater Control -25, 2021.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Enforced by the Division of Consumer Affairs, N.J.A.C. 13:45A-29.1.					
Growth Management	No	Local and State	Yes,	-	-
Comment: State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	NA	-	NA	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	No	No
Comment: 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 freeholders 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. Enforced by Planning Board, Local Ordinance 54-21.					
Environmental Protection	Yes	Local and State	Yes	Yes	No
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Flood Damage Prevention	Yes	Local and State	Yes	Yes	2020-Rockaway T-009
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. Local Ordinance Chapter 22 designates the Construction Code Official as administrator of the flood damage prevention program, yet the Township Engineer currently is serving this role and is a CFM. Recommend ordinance update to clarify roles.					
Wellhead Protection	Yes	Local and State	Yes	No	No
Comment: 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)). Local Ordinance Chapter 25-2 Environmentally Critical Area and Chapter 54-32 Submission Requirements for Development Applications: Highlands Area.					
Emergency Management	Yes	Local and State	Yes	No	No
Comment: 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. Local Ordinance Chapter 2-30 Office of Emergency Management.					
Climate Change	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Master Plan	Yes	Local	Yes	No	No-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1). Enforced by Planning; Reexamination Report of the Master Plan adopted 11/18/19.					
Capital Improvement Plan	Yes, 2014	Local	Yes	No	No
Comment: 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. Enforced by Administration, Capital Improvement Program.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	Yes, 1995	Local and State	Yes	No	No
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Enforced by Engineering, Local Ordinance Chapter 22, Flood Damage Prevention					
Stormwater Management Plan	Yes	Local and State	Yes	No	No
Comment: 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). Municipal Stormwater Management Plan Township of Rockaway March 2005.					
Stormwater Pollution Prevention Plan	Yes	-	Yes	-	-
Comment: 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). Stormwater pollution prevention plan Rockaway Township October 21, 2019.					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.)					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	Local and State	Yes	No	No
Comment: Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF). Local Ordinance Chapter 18 Trees and Chapter 2-31 Shade Tree Commission.					
Transportation Plan	Yes	Local	Yes	No	No
Comment: May develop a circulation plan element in master plan per NJSA 40:55D-28b. (4). Circulation Plan Element is contained within the Township's Mater Plan.					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Shade Tree commission	Yes	Local	Yes	No	No
Comment: 40:37-5. Powers; regulations; trees on highways; parks: Except as hereinafter provided, the shade tree commission may exercise exclusive control over the regulation, planting and care of shade and ornamental trees and shrubbery now situate or which may hereafter be planted in any public highway, park or parkway of the county, including: a. The planting, trimming, spraying, care and protection thereof; b. The regulation and control of the use of the ground surrounding the same so far as may be necessary for their proper growth, care and protection; c. The moving or requiring the removal of any tree or part thereof, dangerous to public safety; d. The care and control of the parks and parkways; e. The encouragement of arboriculture. Amended by L.1958, c. 41, p. 132, s. 2, eff. May 20, 1958. Local Ordinance Chapter 2-31.					
Other - Historic Preservation	Yes	Local and State	Yes	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest. Local Ordinance Chapter 54-4.1 Historic Site and Chapter 22 Flood Damage Prevention.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Rockaway Township Office of Emergency Management	Yes	No	No
Comment: 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Enforced by OEM, Emergency Management					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Construction Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes A vacant land assessment was performed in 2019.

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Rockaway.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning
Mitigation Planning Committee	Yes	OEM
Environmental Board / Commission	Yes	Administration
Open Space Board / Committee	Yes	Administration
Economic Development Commission / Committee	Yes	Administration
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	AlertMorris, AlertRockawayTownship

Staff/Personnel Resource	Available?	Department/Agency/Position
Maintenance program to reduce risk	Yes	Administration
Mutual aid agreements	Yes	Police/Fire/OEM
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 training in benefit/cost analysis	Yes	Finance
Staff with training in green infrastructure	Yes	Engineering
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	No	-
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Planning
Local or state water quality professional	Yes	Highlands Coalition
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Watershed planner	Yes	Highlands Coalition, Engineering, Administration
Environmental specialist	Yes	Engineering Consultant
Grant writers	Yes	Administration/Contractor
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Rockaway.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Open Space Acquisition Funding Programs	Yes – Morris County Flood Mitigation Program (acquisitions)
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Rockaway.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Business Administrator or Assistant Administrator
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes. Website provides link to Morris County OEM.
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes. Facebook.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes. Shade Tree. Environmental Protection Committee.
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes. Township newsletter, water and sewer mailing, tax mailing
Do you have any established warning systems for hazard events? • If yes, briefly describe.	AlertMorris, Alert Rockaway Township

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Rockaway.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	004/Residential /03 Commercial	July 6, 2023
Public Protection (Fire ISO Protection Class)	Yes	04/4X	2017
Storm Ready Certification	No		
Firewise Community Classification	No		

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering, Planning & Construction Department
Who is your floodplain administrator? (name, department/position)	The FDPO designates the Construction Official. Currently, the Township Engineer serves this role.

Criterion	Response
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2022
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	None
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes County FIRM map adoption on hold.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	48 \$20,222,100 \$84,280
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	79 23 \$676,538
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Rockaway that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Rockaway has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Rockaway.

- Number of repetitive loss (RL) properties: 6
- Number of severe repetitive loss (SRL) properties: 0

- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Agilent Techs. Inc.	Hazmat	X	X
Chestnut Sewer Station*	Wastewater Pump	X	X
Hibernia Volunteer Fire Company 1*	Fire		X
Lake Ames Dam	Dam	X	X
Mount Hope	Dam	X	X
White Meadow Lake Dam	Dam	X	X

* Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

PUBLIC REVIEW DRAFT - NOT FINAL

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Rockaway. The Township of Rockaway has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township of Rockaway agreed with the risk assessment results.

Table 9: Township of Rockaway Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

Township of Rockaway reported no completed actions.

2.6 CANCELLED ACTIONS

Township of Rockaway reported no cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Rockaway Township	Rockaway River Analysis: Blackwell St./ Carol St. Flooding-RL Properties	Properties in the East Blackwell St/ Carol St. area are prone to flooding from the Rockaway River, including 4 homes, businesses, and a bus line.	Track multijurisdictional flood-prone facilities, conduct outreach to educate owners of the RL status, and provide them with mitigation options. Township will compile a list of mitigation actions that homeowners and the Township would like to pursue, including buy-	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				outs, elevations, and river dewatering, and then develop a FEMA HMA grant to obtain funding.		
2	Rockaway Township	Generator for Copeland School Facility	Copeland School needs a generator as shelter. Has kitchen, showers, holds 250-300 residents.	Design, purchase, and install generator for Copeland School.		
3	Rockaway Township	Chestnut Sewer Station	Chestnut Sewer Station is a critical facility in the floodplain.	Determine extent of flooding expected to the facility and plan mitigation. Can be integrated into the existing Wastewater Management Plan for Morris County.		
4	Rockaway Township	Agilent Techs, Inc.	Agilent Techs, Inc. is a facility with Hazardous Materials in the floodplain.	The Township will educate the owner of the facility that the property is identified as a critical facility in the floodplain and	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
				provide them with mitigation options.		
5	Rockaway Township	McKeel Brook flood analysis	Properties in the McKeel Brook area are prone to flooding from the McKeel Brook, including 2 homes.	Track flood-prone facilities, conduct outreach to educate owners of the RL status, and provide them with mitigation options. Township will compile a list of mitigation actions that homeowners and the Township would like to pursue, including buyouts, elevations, and infrastructure recommendations, and then develop a FEMA HMA grant to obtain funding.	Yes	Not Started
6	Rockaway Township	Swede Mine Road flood analysis	Drainage system on Swede Mine Road is prone to backup.	No progress. Continue.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
7	Rockaway Township	Municipal Dam repair/reconstruction	Lake Ames Dam, Mount Hope Pond Dam, and Lake Hudsonia Dam are owned by the Township and considered Class II Significant Hazard.	Update EOP to include review of EAPs from owners of the dams. Complete dam failure studies, where necessary.	Yes	EOPs and EAPs were updated in 2019. Lake Hudsonia Dam removed in 2020 in accordance with NJDEP Dam Safety Regulations. Lake Hudsonia Dam no longer exists. Lake Ames Rehabilitation Permit Design is under review by the NJDEP. Mt Hope Pond Dam Conceptual Design for Rehabilitation in accordance with NJDEP Dam Safety is in progress.

PUBLIC REVIEW DRAFT - NOT FINAL

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
8	Rockaway Township	Hibernia Fire Station #1	Hibernia Fire Station #1 is a lifeline facility in the 500-year floodplain.	Determine extent of flooding expected to the facility and plan mitigation.	Yes	In Progress. This impact to this structure is considered during the conceptual design of Mt Hope Pond Dam Rehabilitation.
9	Rockaway Township	FDPO Update	The FDPO designates the Construction Official to administer the program.	Update the FDPO to reflect engineer as FPA.	Yes	Planned for 2024

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood		Goal 1		<u>Engineering, Construction Officer</u>	Administration	Operating Budget	Medium
2	Severe Weather		Goal 2		<u>OEM, Schools Buildings Administrator</u>	Engineering, DPW	HMGP, PDM	High
3	Flood		Goal 2		<u>Engineering, RT Municipal Utility</u>	DPW, Utilities, Administration	HMGP, PDM, Operating Budget	High
4	Hazardous Substances		Goal 4		<u>Administration</u>	Engineering, Construction	Operating budget	Medium
5	Flood		Goal 1		<u>Engineering</u>	Administration, Dover, ACOE	HMGP, PDM, capital budget	Medium
6	Flood		Goal 2		<u>Engineering</u>	Administration, DPW	HMGP, PDM, capital budget	Medium

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
7			Goal 2		<u>OEM, Engineering</u>	Administration	Operating budget	High
8	Flood		Goal 2		<u>Engineering, Fire</u>	Administration	Operating budget	Low
9	Flood		Goal 1		<u>Engineering, Construction</u> <u>Official, Planning Board</u>	Administration	Municipal budget	Medium

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Over \$1M	3-5 years	2	3	3	1	2	11	Medium
2	\$50k-250k	1-3 years	2	1	2	2	1	8	Low
3	Over \$1M	3-5 years	1	2	2	1	2	8	Low
4	Under \$50k	1-3 years	1	2	2	1	1	7	Low
5	Over \$1M	3-5 years	2	2	2	1	2	9	Medium
6	\$750k-\$1M	3-5 years	1	1	1	1	1	5	Low
7	Over \$1M	1-3 years	3	3	3	3	3	15	High

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 1 - BCA equal 2 - Minor Exceedance 3 - Major Exceedance	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
8	Over \$1M	1-3 years	1	2	2	2	3	10	Medium
9	Under \$50k	Under 1 year	2	2	2	2	3	11	Medium

Figure 1: Township of Rockaway Hazard Area Extent and Location Map 1

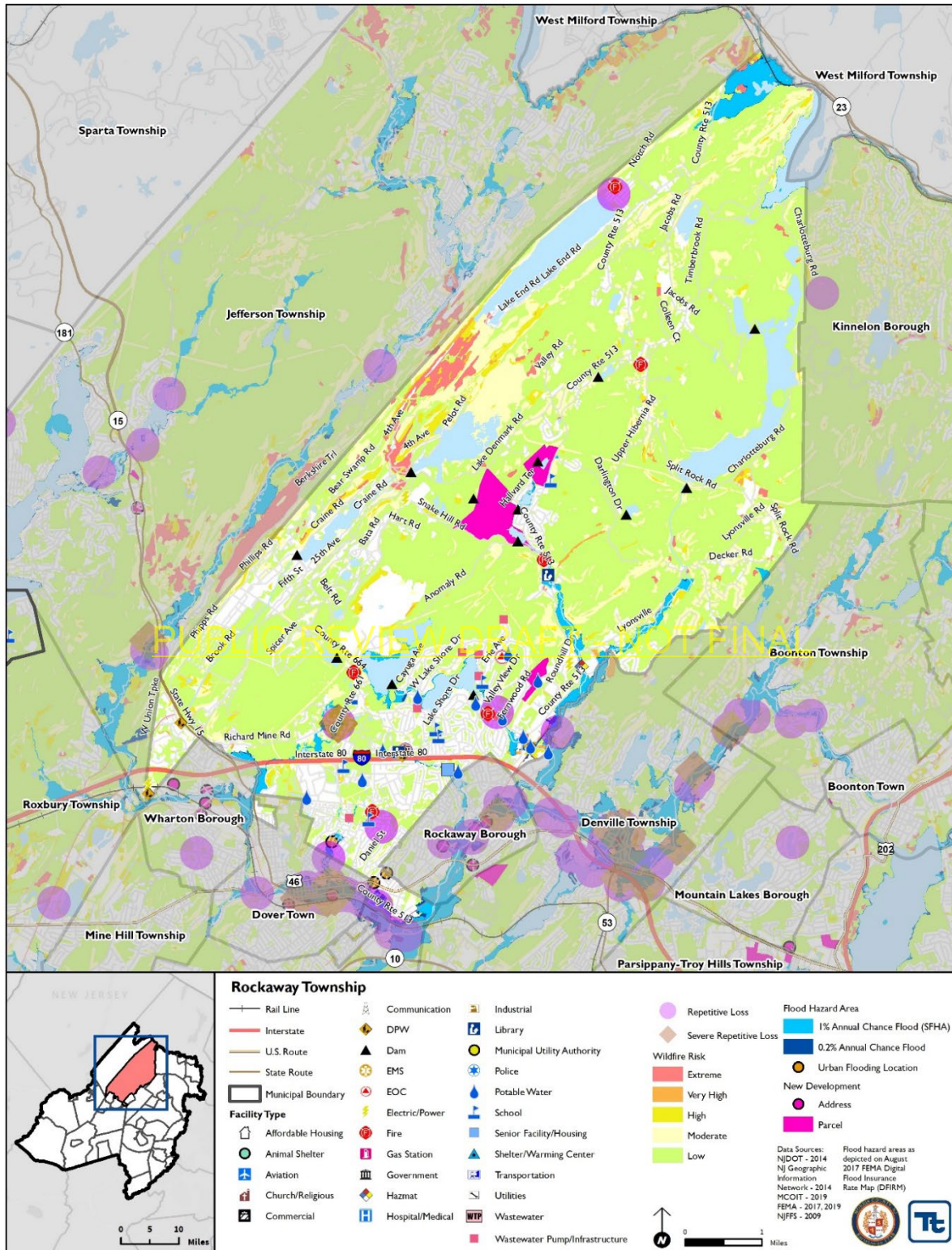
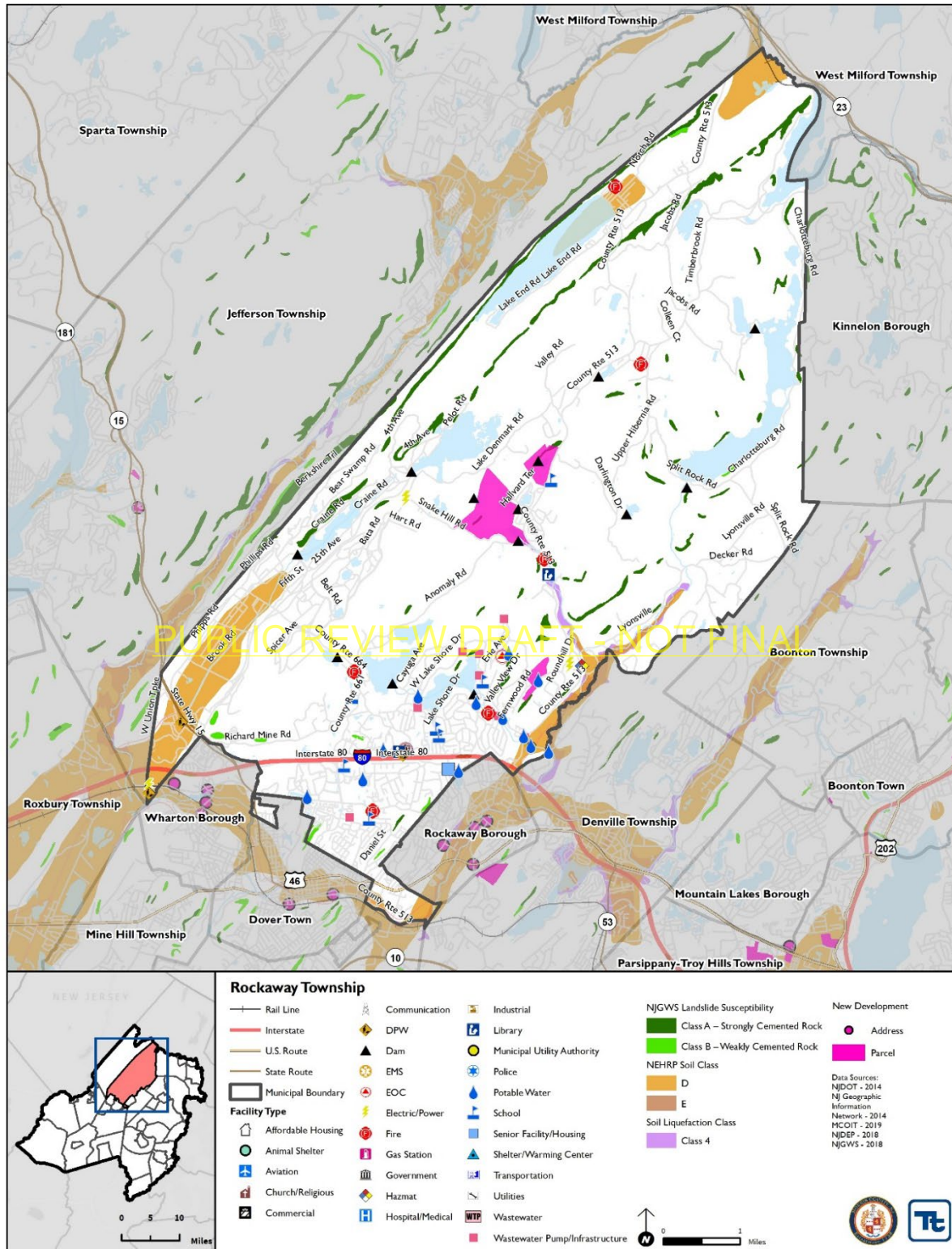


Figure 2: Township of Rockaway Hazard Area Extent and Location Map 2



APPENDIX 35: TOWNSHIP OF ROXBURY COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Roxbury and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
				PUBLIC REVIEW DRAFT - NOT FOR COMMENT	
Codes, Ordinances, & Requirements					
Building Code	Yes	State, Local, Building Code Official	Yes	No	-
Comment: The Township follows the State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.), Chapter IX of Revised General Ordinance					
Zoning Code	Yes	Local, Zoning Board	Yes	Yes	-
Comment: Chapter 13 (Land Development) – Section 7 outlines the zoning regulations for the Township. The provisions of this section must be held to be minimum requirements adopted for the promotion of public health, safety, morals, and general welfare. Any development in the Township should be laid out to avoid adversely affecting ground water and aquifer recharge; to reduce cut and fill; to avoid unnecessary impervious cover; to prevent flooding; to provide adequate access to lots and sites; to protect scenic views; and to mitigate adverse effects of shadow, noise, odor, traffic, drainage, and utilities on neighboring properties. All applications for zoning permits must provide documentation of compliance with all applicable requirements of local, County, State and Federal governmental ordinances, statutes and regulations, pertaining to the proposed use, structure and/or building, including without limitation the Highlands Act and its implementing regulations.					
Subdivisions	Yes	Local	Yes	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Chapter XIII of Revised General Ordinance, Article III, Section 13-3.1 – subdivision plat shall be designed to encourage good planning concepts and quality development patterns within the municipality and conform to the Master Plan and Official Map					
Stormwater Management	Yes	Local, Engineer	Yes	Yes	-
Comment: Chapter XIII of Revised General Ordinances, Section 13-8.4 <ul style="list-style-type: none">• Municipal Separate Storm Sewer System (MS4): Chapter III of Revised General Ordinances, Section 3-25, Chapter XXII of Revised General Ordinances, Section 22-7.10• The Planning and Zoning Boards review projects to ensure compliance with stormwater regulations before issuing preliminary or final subdivision or site plan approvals. All new residential developments or redevelopments that are subject to the Residential Site Improvement Standards for stormwater management are in compliance with those standards. All new non-residential projects that are not subject to the Residential Site Improvement Standards are required to be in compliance with the Township’s Stormwater Management section of the Land Development Ordinance.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	-	-
Comment: N.J.A.C. 13:45A-29.1					
Growth Management	No	-	-	-	-
Comment:					
Site Plan Review	Yes	Local, Zoning Board	Yes	-	-
Comment: Chapter XIII of Revised General Ordinance, Article III, Section 13-7.824; the Planning Board and Zoning Board of Adjustment have the power to grant waivers from a design standard requirements for site plan approvals. The Planning Board conducts the site plan reviews and approves or denies the plan.					
Environmental Protection	Yes	Federal, State and Local	Yes	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Flood Damage Prevention	Yes	Federal, State, Local, Construction Code Official	Yes	Yes	-
Comment: Chapter XIII of Revised General Ordinance, Article III, Section 13-7.823 <ul style="list-style-type: none"> NFIP: Freeboard, Chapter XIII of Revised General Ordinance, Article III, Section 13-7.824 States that no development can take place or no structure can be built or substantially improved with any flood hazard area unless and until a development plan is submitted to the Planning Board for approval. Lands in the floodplain shall be preserved to the maximum extent consistent with the reasonable utilization of land. 					
Wellhead Protection	Yes	Local	No	No	-
Comment: Chapter 13 (Land Development) Section 7 (Protection of Critical Aquifer Recharge Areas) – these areas include those areas identified by the USGS in its "Alamontong Wellhead Protection Study" as areas of 12 years or less travel time of recharge to actual or potential public water supply wellheads. Category 1 Areas are those identified in the USGS Study as having a recharge travel time to such wellheads of 5 years or less. Category 2 Areas include all other Critical Aquifer Recharge Areas with recharge-to-wellhead travel time of greater than 5 years but not greater than 12 years.					
Emergency Management	Yes	Local	No	-	-
Comment:					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Planning Documents					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comprehensive / Master Plan	Yes	Local, Planning Board	Yes	Yes	-
Comment: 7-11-2000, 2017 Periodic Reexamination Report of the Master Plan and Development Regulations of the Township of Roxbury; adopted August 2, 2017; Planning Board is responsible for maintaining and updating. <ul style="list-style-type: none"> One of the goals of the plan is to implement the requirements of Highland Plan Conformance for the Preservation Area portion of the Township. Land use restrictions in the Preservation Area are governed by the Highlands Act and rezoning at the municipal level for these areas is not necessary. The plan also references the stormwater ordinance and plan. In the 2009 Land Use Element Update, several of the goals pertain to alleviating flooding from storm drainage and discouraging development in the flood hazard areas. The Land Use Plan also recognizes the adoption of the Highlands Master Plan and the requirement of conformance of the Township's land located in the Preservation Area (over 30% of the Township is located in the Preservation Area). Lastly, the Land Use Plan Element is consistent with the Morris County Future Land Use Plan, and the Solid Waste Management Plan utilizing environmental considerations in land use decisions and promoting clustering to preserve environmentally sensitive lands are consistent with the municipal plans. 					
Capital Improvement Plan	Yes	Local, Manager	No	-	-
Comment: Capital Improvement is included in the Township's annual budget. The budget includes line items for equipment for snow removal, fire equipment, and money put aside for capital improvement projects.					
Disaster Debris Management Plan	No	-	-	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Federal, State, Local	Yes	-	-
Comment:					
Stormwater Management Plan	Yes	Local, Planning Board	Yes	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Township of Roxbury Municipal Stormwater Management Plan, 12/2006; the Township has stormwater management information available on their website that informs the public what stormwater is and how to conserve water.					
Stormwater Pollution Prevention Plan	Yes	Local, State	Yes	No	No
Comment: Township of Roxbury Stormwater Pollution Prevention Plan, revised April 29, 2022 – includes information on the Township’s NJPDES permits. The Plan outlines the responsibilities the Township has with regards to stormwater pollution prevention. This includes public outreach and education and maintenance programs to reduce pollution and runoff.					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	No	-	-	-	-
Comment:					
Economic Development Plan	Yes	Local	No	-	-
Comment:					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	No	No
Comment: 2016-2020 Community Forestry Management Plan. The purpose of the plan is to improve the quality of life in the Township by maximizing the environmental, social, and economic benefits of trees to the community while minimizing the associated costs and liabilities.					
Transportation Plan	No	-	-	-	-
Comment:					
Agriculture Plan	No	-	-	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Climate Action Plan	No	-	-	-	-
Comment:					
Tourism Plan	No	-	-	-	-
Comment:					
Business Development Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local, OEM, Engineer	Yes	-	-
Comment: Municipal EOP and includes post-disaster recovery plan and a continuity of operations plan					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	Yes	Local, OEM, Engineer	No	-	-
Comment: Municipal EOP					
Continuity of Operations Plan	Yes	Local	No	-	-
Comment:					
Public Health Plan	No	-	-	-	-
Comment:					
Other	Yes	Local, OEM, Engineer	No	-	-
Comment:					
<ul style="list-style-type: none"> Emergency Response Plan, Municipal EOP 					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
• Strategic Recovery Planning Report, Municipal EOP					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes – Planning and Zoning
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes – Part of the Highlands work that the Township conducted, did a property-by-property

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Roxbury.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Roxbury Township Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	The Roxbury Environmental Commission (REC) is comprised of volunteer Roxbury residents, appointed by the Mayor. The commission advises the Mayor and Council, as well as Township officials, including the Planning and Zoning Boards regarding environmental issues and actions that can affect the inhabitants and natural resources of the community. The REC holds information meetings with the general public on various environmental topics including illicit connections and improper waste disposal.
Open Space Board / Committee	Yes	Open Space Advisory Committee

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Staff/Personnel Resource	Available?	Department/Agency/Position
Economic Development Commission / Committee	Yes	Roxbury Township Economic Development Committee - serves as an ally for companies seeking a new location and those already operating in Roxbury. Their mission is to create a more vibrant and cultivated community by developing and providing data and information to assist businesses in their expansion in and/or relocation to Roxbury Township
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Morris County reverse 911 (RAVE), social media and municipal website
Maintenance program to reduce risk	Yes	Tree trimming through the DPW; rehabilitation of sanitary manholes and mains to decrease storm water infiltration; street sweeping; catch basin cleaning program
Mutual aid agreements	Yes	Surrounding municipalities
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning/Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction / Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planner
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	No	-
Stormwater engineer	Yes	Planning Board Engineer
Personnel skilled or trained in GIS applications	Yes	Engineering Dept. staff
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM Director
Grant writers	Yes	Township staff
Resilience Officer	No	-
Watershed planner	No	-
Environmental specialist	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Roxbury.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes

Financial Resource	Accessible or Eligible to Use?
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Roxbury.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – Township traffic alerts, emergency alerts, no parking alerts
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Municipal website, Facebook, Twitter, Reverse 911
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes – Municipal newsletter, tax bills can both be used to include hazard-related information
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes - Morris County reverse 911 (RAVE), social media and municipal website are all used to provide emergency notifications and other information to the Township

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Roxbury.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	No	N/A	N/A
Public Protection (Fire ISO Protection Class)	Yes	04/4Y	May 11, 2022
Storm Ready Certification	No	N/A	N/A
Firewise Community Classification	No	N/A	N/A
Sustainable Jersey	No	N/A	N/A

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering Department
Who is your floodplain administrator? (name, department/position)	Municipal Engineer
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2001 – part of the Township’s Land Development ordinance
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets the minimum
When was the most recent Community Assistance Visit or Community Assistance Contact?	According to data provided by FEMA, a CAV or CAC has not been conducted for the Township
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	No – Outdated (~1980s) and show too many areas that are flood prone that really are not flood prone or questionable
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 - Continuing education and/or certification training on floodplain management
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No, has considered joining
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	52 Policies In-Force. \$15,759,000 Insurance In-Force. \$32,986 Premium In-Force.
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	32 total Claims. 0 claims still open. 14 claims closed without payment. \$89,403 total claim amount.
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 – No interest within Township

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Roxbury that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Roxbury has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Roxbury.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	0.2% Event
Lake Hopatcong Dam	Dam	X	X

Source:
*Identified lifeline

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and bounce back after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Roxbury. The Township of Roxbury has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community. The Township modified the rankings for the following: dam failure (medium to low), disease outbreak (from high to medium), drought (from medium to low), extreme temperature (from medium to low), geological hazards (from medium to low), harmful algal bloom (from low to medium), hazardous substances (from high to medium), infestation (from medium to low), severe weather and severe winter weather (from high to medium), and wildfire (from medium to low). These adjustments are based on the history of occurrences and the Township's ability to bounce back after a hazard impacts the municipality.

Table 9 Township of Roxbury Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Low	Hazardous Substances	Medium
Earthquake	Medium	Severe Weather	Medium
Extreme Temperature	Low	Severe Winter Storm	Medium

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Hazard	Ranking	Hazard	Ranking
Flood	Low	Wildfire	Low
Geological Hazards	Medium		

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2.5 COMPLETED ACTIONS

2.6 CANCELLED ACTIONS

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Roxbury Township	Upgrade of Culvert at Hillside Avenue and Route 46	The culvert located at Hillside Avenue and Route 46 is inadequate in size. This leads to periodic roadway flooding	Replace the culvert at Hillside Avenue and Route 46.	Yes	Not Started
2	Roxbury Township	Detention basin upgrade located at	Downstream from the detention basin on Whitegate Road is	Reconstruct the detention basin outlet on Whitegate Road and reconstruct the berm.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
		Whitegate Road	need of repair. It causes flooding downstream which leads to erosion.			
3	Roxbury Township	Conduct an inundation study of the Lake Hopatcong Dam	An inundation study is needed on the dam.	The Lake Hopatcong Dam is a state-owned dam	Yes	Not Started
4	Roxbury Township	Waterbody Maintenance and Sediment Removal	The Lamington River, Drakes Brook, and Succasunna Brook all flow through the Township. The Township does not have jurisdiction over these bodies of water and cannot perform the proper maintenance needed to reduce flooding and closed roadways. Debris and sediment need to be	The Township will work with the NJDEP to develop a stream maintenance program to reduce the buildup of debris and sediment. This will reduce the potential for flooding and road closures and will also reduce the amount of overtime for police and DPW.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			removed on a routine basis to allow the natural flow of water during heavy rain events. Township police and DPW staff are needed for traffic control and detour assistance.			
5	Roxbury Township	Emergency Generator for Township Senior Center	The Township's Senior Center is used as a shelter during an emergency. However, the center does not have a source of backup power. In the event of a utility outage, the center cannot serve as a proper shelter	Working with the engineer, determine the appropriate size generator to power the Senior Center. Once determined, purchase the generator and install it.	Yes	Not Started
6	Roxbury Township	Feasibility Study of Floodprone Roadways in the Township	There are many roadways that are susceptible to flooding in the Township. This leads to road closures, police and DPW	Conduct a feasibility study to determine the source (or sources) of flooding in the Township and identify mitigation options to reduce or alleviate the problem. The Township	Yes	Not Started

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Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			overtime, creates driving hazards, and damages infrastructure.	will review the findings and determine the appropriate project(s) to implement and begin implementation.		

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2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather		Goal 1		<u>County Engineer, Township Engineer</u>		EPA Clean Water Act Section 319, Township Budget	Allows drainage to flow through; reduces roadway flooding during heavy rain; allows road to remain open
2	Severe Weather		Goal 1		<u>Township Engineer with support from NJDEP</u>		NJDEP Dam Restoration Loan Program	Dam will meet NJDEP standards and provide protection
3	Severe Weather		Goal 1		<u>Township Engineer</u>		NJDEP Water Quality Restoration Grants, CDBG-DR	Reduce flooding; increase integrity of the detention basin

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
4	Severe Weather		Goal 4		<u>NJDEP, Morris County and Sussex County, Local Municipalities</u>		NJDEP Dam Restoration Loan Program	Identifies floodprone areas in and around the dam
5	Severe Weather		Goal 1		<u>NJDEP with support from Township Administration</u>		FEMA FMA and HMGP, NJDEP flood Hazard Risk Reduction and Resiliency Grant Program	Reduce manpower needed for detouring traffic, reduce or eliminate roadway flooding and road closures
6	Severe Weather		Goal 1		<u>Township Engineer</u>		FEMA HMGP, Township Budget	Continuity of operations, shelter for residents

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$250k-\$500k	3-5 years	1	2	2	2	2	9	Medium
2	\$250k-\$500k	3-5 years	1	2	1	2	2	8	Low
3	\$250k-\$500k	3-5 years	1	2	1	2	2	8	Low
4	\$250k-\$500k	3-5 years	1	1	3	2	2	9	Medium
5	\$250k-\$500k	3-5 years	2	1	1	2	2	8	Low
6	\$250k-\$500k	3-5 years	1	1	2	2	2	8	Low

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Figure 1: Township of Roxbury Hazard Area Extent and Location Map 1

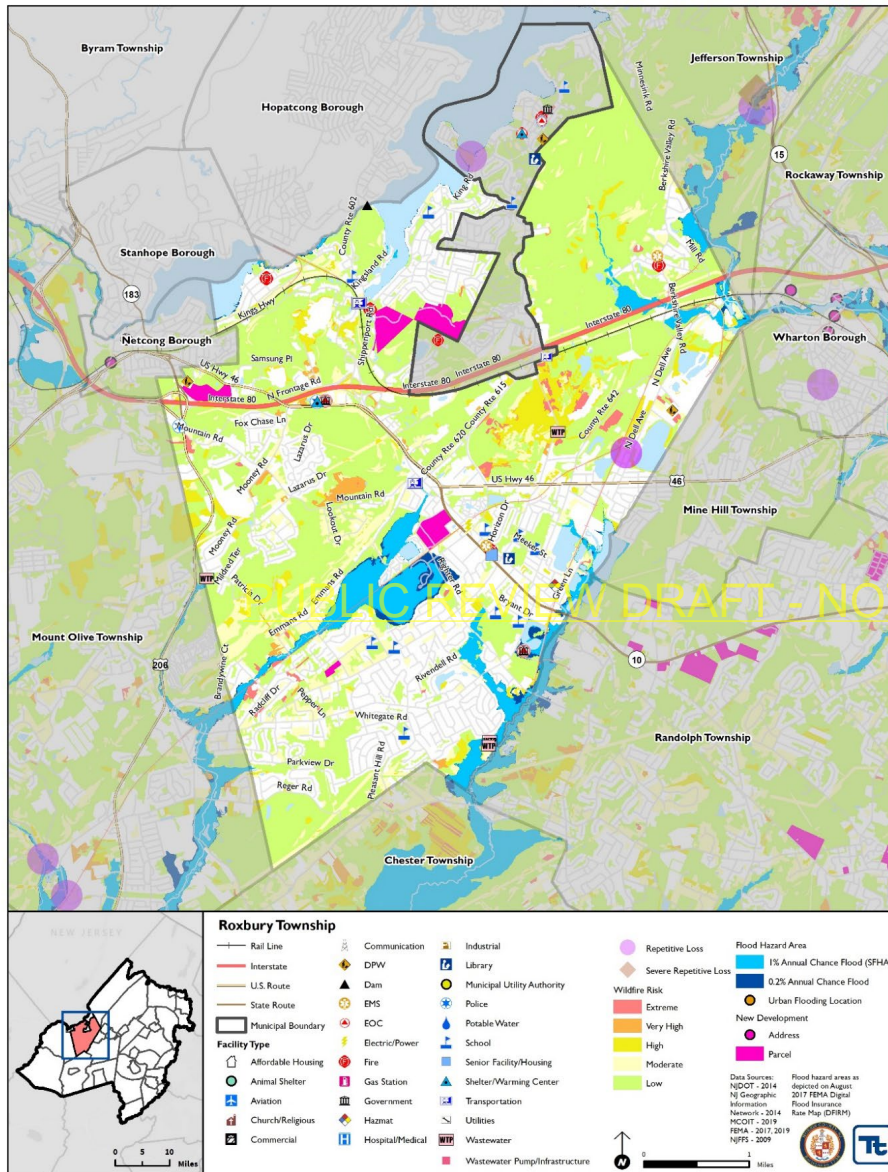
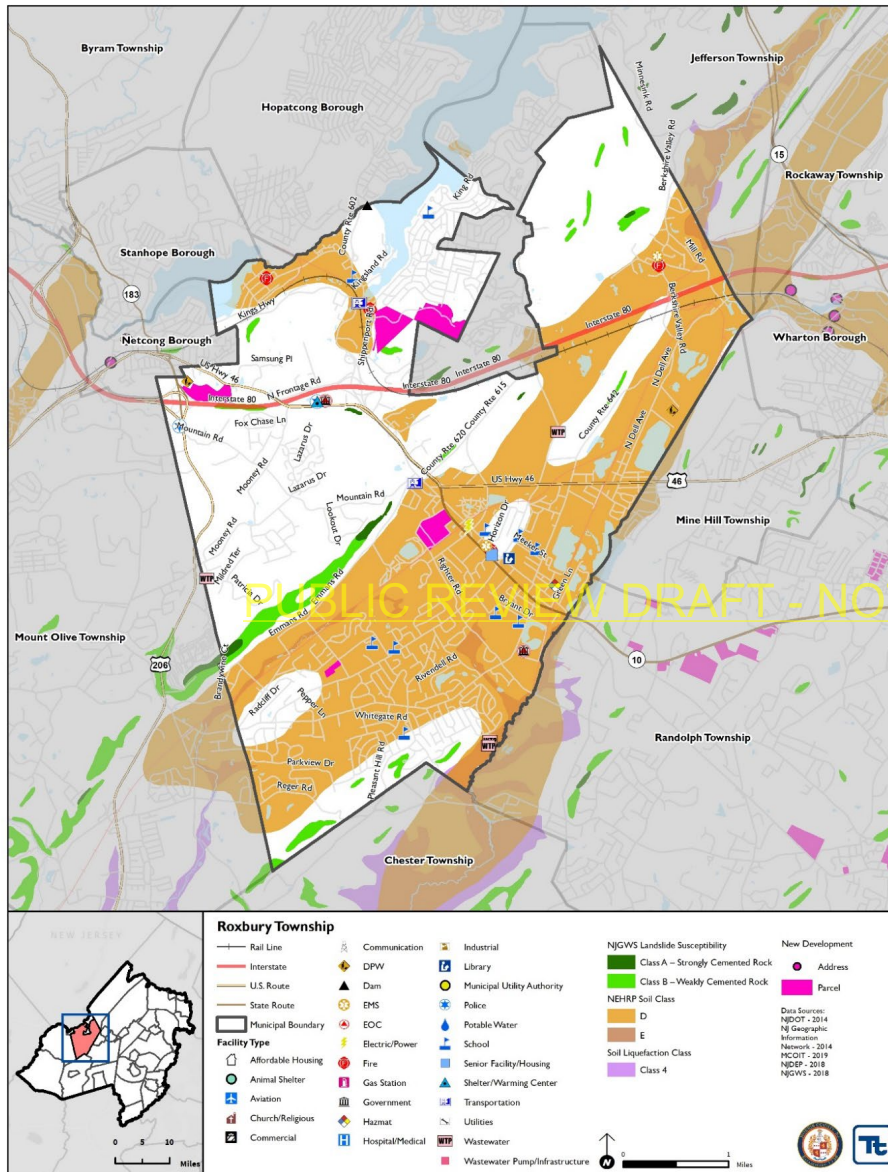


Figure 2: Township of Roxbury Hazard Area Extent and Location Map 2



APPENDIX 36: TOWNSHIP OF WASHINGTON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Washington and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Man- dated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State and Local	Yes	No	-
Comment: Chapter 56 (Building Construction); the Township uses the State Uniform Construction Code					
Zoning Code	Yes	Local	No	Yes	-
Comment: Chapter 217 (Zoning); adopted on 5/26/1983 - The purpose of this chapter is to guide the appropriate use or development of land in the Township in which it will promote the public health, safety, morals, and general welfare. The Township contains zoning overlay zones which includes a carbonate area district. The code refers to the floodplain management code (Chapter 92) and restricts development adjacent to a C1 or other stream or state open waters except in conformance with Chapter 92.					
Subdivisions	Yes	Local	Yes	Yes	-
Comment: Chapter 175 (Subdivision of Land); adopted by the Township Committee on 9/26/1978; the purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision in the Township of Washington in order to promote the public health, safety, convenience and general welfare of said Township and to carry out the objective of the Municipal Land Use Law. It is administered to ensure the orderly growth and development, the conservation, protection, and proper use of land and adequate provisions for circulation, utilities and services and the conservation and environmental protection of all land, water and air resources within the jurisdiction of Washington Township. The Planning Board is the approving agency for subdivision applications. The Township requires a					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
sketch plat be presented when a subdivision is being requested. The plat must include the location of existing houses, buildings and other structures, with accurate dimensions from all existing and proposed lot lines, topography, delineated flood hazard areas, buffer zones, wetlands and transition areas, ridgelines, minimum improvable lot areas and soils information within the portion to be subdivided and within 200 feet. This chapter refers to the Master Plan as the subdivision should conform to the Circulation Element and the overlay zones part of the zoning code.					
Stormwater Management	Yes	Local	Yes	Yes	-
Comment: Chapter 170 of the municipal code relates to Stormwater Control. Stormwater management is included in Article 1 of the code. The purpose of stormwater management is to establish minimum stormwater management requirements and controls for major development. The policy statement is: flood control, groundwater recharge and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural best management practices (BMPs). For major development, if structural stormwater management measures are needed, they must be designed to take into account the existing site conditions, including, for example, environmentally critical areas; wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage area and drainage patterns; and the presence of solution-prone carbonate rocks (limestone).					
The Planning and Zoning Boards review municipal projects and ensures compliance with the Stormwater Control Ordinance before issuing preliminary or final subdivision or site plan approvals under the Municipal Land Use Law. All new residential and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management.					
Post-Disaster Recovery	No	-	-	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	-	-
Comment: Division of Consumer Affairs - N.J.A.C. 13:45A-29.1					
Growth Management	No	-	-	-	-
Comment:					
Site Plan Review	Yes	Local	Yes	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Chapter 168 (Site Plan Review); adopted 5/18/1992. The purpose of this chapter is to establish rules, regulations, standards and procedures for approval of all developments in order to: preserve existing natural resources and give proper consideration to the physical constraints of the land; provide for safe and efficient vehicular and pedestrian circulation; provide for screening, landscaping, signing and lighting; ensure efficient, safe and aesthetic land development; provide for compliance with appropriate design standards to ensure adequate light and air, proper building arrangements and minimum adverse effect on surrounding property; develop proper safeguards to minimize the impact on the environment, including but not limited to soil erosion and sedimentation and air and water pollution; and ensure the provision of adequate water supply, drainage and stormwater management, sanitary facilities and other utilities and services; and provide for recreation, open space and public use areas. All site plans must include all existing and proposed buildings and structures, streets, easements, driveways, entrances and exits, delineated flood hazard areas and riparian zones, wetlands and transition areas, ridgelines, stream corridor and open water buffers on the site and within 200 feet of the site.					
Environmental Protection	No	-	-	-	-
Comment:					
Flood Damage Prevention	Yes	Local	Yes	Yes	-
Comment: Chapter 92 (Floodplain Management); the purpose of the Floodplain Management code is 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; Minimize expenditure of public money for costly flood control projects; Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; Minimize prolonged business interruptions; Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines and streets and bridges located in areas of special flood hazard; 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; Ensure that potential buyers are notified that property is in an area of special flood hazard; Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. The Planning Board is appointed the floodplain administrator for the Township. The code requires new construction and substantial improvement in the floodplain to have their lowest floor, including basement, elevated to or above the base flood elevation.					
Wellhead Protection	No	-	-	-	-

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	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: While there is no adopted wellhead protection code, it is discussed in Section 255 (Water), Section 170 (Stormwater Control), and Chapter 111 (Land Use Procedures).					
Emergency Management	No	-	-	-	-
Comment:					
Climate Change	No	-	-	-	-
Comment:					
Disaster Recovery Ordinance	No	-	-	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	-	-	-
Comment:					
Other	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none">Green Building Practices for Civic, Commercial, and Residential Buildings – this resolution was adopted on May 20, 2019 by the Township Committee. This resolution states that the Township will train its planning and construction code enforcement staff through programs offered by the Affordable Green Academy and the New Jersey Department of Community Affairs in how to incorporate green building measures into the design, construction, operation, and maintenance of municipal buildings and facilities and will encourage green design for commercial and residential buildings. The resolution also states that the Township will support green building in the private sector through various actions (e.g. green building scorecard as a discussion item in the Site Plan approval process), actions that might be required in the future (e.g. amended the Site Plan checklist to incorporate green building standards), and educational actions (e.g. information on website, guidelines, etc.).Chapter 98 (Geologic Hazards) - Geologic hazards may exist in developments which received approvals prior to the adoption of this chapter regulating development in limestone areas. Those hazards may be discovered during or after construction. In such cases it shall be unlawful for the developer and/or the owner to continue construction activities which would impact the geologic hazard until the following have occurred: The occurrence of the hazard has been					

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	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>reported to the Township Clerk and Engineer within 24 hours of discovery; A report on the geologic hazard which analyzes the impact of the hazard and details a remediation plan has been prepared and submitted to the township for review and approval by the Township Geotechnical Consultant (TGC); After obtaining approval of the remediation plan from the municipality, necessary remediation of the hazard to prevent or minimize damage to buildings, structures, utilities, driveways, parking areas, roadways and other site improvements and to minimize pollution of the groundwater has been performed; Any damage to improvements has been repaired and restoration of ground cover and landscaping has been accomplished; and The township has been reimbursed for the cost of inspection or other costs incurred in connection with the geologic hazard.</p> <ul style="list-style-type: none">Chapter 103 (Highlands Area Exemptions) - The purpose of this chapter is to set forth the procedural and substantive requirements by which the municipality will issue Highlands Act Exemption Determinations.Chapter 111 (Land Use Procedures) – Establishes the Planning Board and Zoning Board of AdjustmentChapter 155 (Sewers)– Article I of the code states that an owner of any house, building or property used for human occupancy, employment, recreation or any other purpose situated within the Township abutting on or having easement or right-of-way access to any street, easement or right-of-way in which there is now located a public sewerage system is required, at the owner's expense, to install suitable sanitary sewer facilities and to connect such facilities directly with the proper public sewer in accordance with the provisions of this article and with the rules and regulations of the Washington Township Municipal Utilities Authority or the Hackettstown Municipal Utilities Authority, as the case may be, and the Washington Township Board of Health. Article II of the code refers to illicit connections to the storm sewer system. The purpose of this section is to prohibit illicit connections to the municipal separate storm sewer system operated by the Township of Washington so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">2009 Master Plan and Development Regulations Reexamination Report (adopted September 23, 2009); The Master Plan includes the following elements: land use, circulation, community facilities, utility service, open space and recreation, recycling, conservation, economic, historic					

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	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
preservation, farmland preservation, housing element and fair share, implementation, and natural resource inventory. Several goals of the plan relate to those included in the County's HMP, including secure safety from fire, flood, panic, and other natural and man-made disasters. The Open Space and Recreation Plan was re-examined as part of the 2003 and 2009 Master Plan Re-examination. It was originally adopted in 2001 and was prepared so the Township could receive Green Acres preferential open space funding.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: The Capital Improvement Plan is part of the annual budget. The Township Committee is responsible for maintaining and updating. The annual budget includes line items for DPW equipment, road improvements, emergency services equipment, and facility improvements.					
Disaster Debris Management Plan	No	-	No	-	-
Comment: The Township is currently developing a debris management plan.					
Floodplain or Watershed Plan	Yes	Local	No	Yes	-
Comment: This is part of the Natural Resource Inventory completed in 2003. The Planning Board is responsible for maintaining and updating.					
Stormwater Management Plan	Yes	Local	Yes	Yes	-
Comment: The Stormwater Management Plan was completed in 12/19/2005. This plan documents the strategy for the Township to address stormwater-related impacts. Several goals of this plan coincide with the County's HMP, including: reduce flood damage, including damage to life and property. Other goals include reducing soil erosion from any development or construction and maintaining the integrity of stream channels for their biological functions, as well as for drainage. This plan also refers to the Township's Master Plan. The Stormwater Management Plan addresses the review and update of existing ordinances and the Master Plan to allow for project designs that include low impact development techniques.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	-	-

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Stormwater Compliance Solutions LLC prepared the 2020 Stormwater Pollution Prevention Plan for the Township.					
Urban Water Management Plan	No	-	-	-	-
Comment:					
Habitat Conservation Plan	Yes	Local/County	-	-	-
Comment:					
Economic Development Plan	No	-	-	-	-
Comment:					
Shoreline Management Plan	No	-	-	-	-
Comment:					
Community Wildfire Protection Plan	No	-	-	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	-	-
Comment:					
Transportation Plan	No	-	-	-	-
Comment:					
Agriculture Plan	Yes	Local/County	-	-	-
Comment:					
Climate Action Plan	No	-	-	-	-
Comment:					

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Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Man-dated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Tourism Plan	No	-	-	-	-
Comment:					
Business Development Plan	No	-	-	-	-
Comment:					
Other	No	-	-	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	-	-
Comment: The Township's EOP was adopted on April 25, 2014. The OEM is responsible for maintaining and updating.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	-	-	-
Comment:					
Continuity of Operations Plan	No	-	-	-	-
Comment:					
Public Health Plan	Yes	Local	-	-	-
Comment: This is included in the Township's Emergency Operations Plan					

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other	No	-	-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes – the Zoning Department issues development permits
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No

PUBLIC REVIEW DRAFT - NOT FINAL

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Washington.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Washington Township Planning Board
Mitigation Planning Committee	Yes	Township OEM
Environmental Board / Commission	Yes	Washington Township Environmental Commission was established in 1979. It currently has nine active members and meets once a month. Some key initiatives in 2019 included local river and stream sampling /testing twice per year, and hosting a high school student stream sampling education workshop. The Environmental Commission also routinely performs monthly reviews of all township development plans and advises on any environmental concerns.
Open Space Board / Committee	Yes	Washington Township Open Space Committee
Economic Development Commission / Committee	Yes	Economic Development Committee was recently formed to help promote the township, and encourage tourism, and consumerism
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Reverse 911 (Rave), Social Media (Facebook and Twitter), municipal website, email

Staff/Personnel Resource	Available?	Department/Agency/Position
Maintenance program to reduce risk	Yes	Safety Committee; the Township DPW has an annual catch basin cleaning program that helps maintain catch basin function and efficiency. For areas that experience recurring problems, the Township cleans those inlets twice a year.
Mutual aid agreements	Yes	Surrounding communities
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Professional Contractors (Engineer & Planner)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Professional Contractors
Planners or engineers with an understanding of natural hazards	Yes	Professional Contractors
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	No	-
Staff with education/ knowledge/ training in low impact development	No	-
Surveyor	No	-
Stormwater engineer	Yes	Professional Contractor
Personnel skilled or trained in GIS applications	Yes	Professional Contractors (Engineer & Planner)
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Township OEM
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	No	-
Resilience Officer	No	-
Other	Yes	Yes, we have others

PUBLIC REVIEW DRAFT - NOT FINAL

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Washington.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, via Morris County
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes (MUA) Water + Sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes, Tax Anticipation
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Yes – Open Space Acquisition Funding through the Township and Morris County

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Washington.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, the Township has a Public Information Officer
Do you have personnel skilled or trained in website development?	Yes, the Township uses a consultant to build the website and the Township updates and maintains it
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes, the Township's website has information about the Hazard Mitigation Plan with a link to the take the citizen survey
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes, the Township uses Facebook and Twitter for hazard mitigation education and outreach
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes, LEPC
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes, Digital/non digital sign boards, Rave
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, The Township uses Reverse 911 (Rave), Social Media (Facebook and Twitter), municipal website, and email for warning systems

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Washington.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	Class 1 DCA	2008
Public Protection (Fire ISO Protection Class)	Yes	5/8B	2012
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	October 2013

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering (hired consultant)
Who is your floodplain administrator? (name, department/position)	Township Engineer

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Criterion	Response
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	4-16-2007
Does your floodplain management program meet or exceed minimum requirements? If exceeds, in what ways?	Overall, meets the minimum; however, it does not meet the minimum state requirement for new development and substantial improvements in the floodplain which requires a minimum of one foot above the base flood elevation. Refer to 2020-WASHINGTON-005
When was the most recent Community Assistance Visit or Community Assistance Contact?	According to the FEMA CRS and CAV History, dated March 18, 2020, the Township has not had a CAV or CAC conducted.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	There are currently no RiskMAP projects underway in the Township.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	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
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No – however, the Township is interested in joining the CRS program
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	64 policies in-force \$97,583 premiums in-force
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	97 claims filed 79 closed, 0 open, 18 closed without payment \$1,904,161 total payments
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Washington that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Washington has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Washington.

- Number of repetitive loss (RL) properties: 13
- Number of severe repetitive loss (SRL) properties: 2
- Number of RL/SRL properties that have been mitigated: 1

2.3 CRITICAL FACILITIES

There are no identified facilities located in the 1-percent and 0.2-percent floodplain.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Morris County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Washington. The Township of Washington has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

The Township is in agreement with the calculated risk of each hazard as presented in the table below.

Table 8: Township of Washington Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Medium	Wildfire	Low
Geological Hazards	High		

2.5 COMPLETED ACTIONS

Commented [KS1]: No mitigation actions in the associated file

2.6 CANCELLED ACTIONS

2.7 HAZARD MITIGATION STRATEGY

2.7.1 BACKGROUND INFORMATION

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Washington Township	Drainage Improvements	During severe storms and weather drainage systems backup flooding on Bartley, Middle Valley, Naught-right, and Zellars Roads	Perform engineering design studies aided at redirecting run off and or raising elevations with the purpose of eliminating and/or reducing flooding during severe storms and weather.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
2	Washington Township	Mitigation of Vulnerable Structures	There are 15 repetitive loss and severe repetitive loss properties in the Township. These structures are vulnerable to flooding and have sustained repeat flood damage.	The ultimate action would be to purchase the properties or raise the elevation of the buildings above the maximum 100 year level. However, before that decision is made each property should be researched in detail to determine the appropriate action, i.e. do nothing, raise the elevation or purchase and destroy the property. Project 2020- WASHINGTON-001 requests funding to complete a detailed study on each of the properties by a certified engineering company to determine the appropriate action.	Yes	Not Started
3	Washington Township	Bury Utility Wires and Cables	Primary power wires, telephone trunk cables and cable television distribution wires hang in front of fire station bay doors approximately six feet above and three feet out of	Bury power lines, telephone trunk, and television cables in front of Long Valley Fire Company on Fairview Avenue.	Yes	Not Started

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
			area where vehicles exit. In times of high winds, large storms, or hurricane conditions wires could come down blocking vehicles from exiting the station.			
4	Washington Township	Portable Generators	The Township Fire Department does not have a portable source of backup power.	Purchase 3 portable generators for Fire Department	Yes	Not Started
5	Washington Township	Update Floodplain Management (Chapter 92) Code	The current flood damage prevention ordinance (Chapter 92) 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.	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.	Yes	Not Started

2.7.2 IMPLEMENTATION INFORMATION

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood, Severe Weather, Severe Winter Weather		Goal 1		<u>Township DPW, Township Engineer</u>		EPA Clean Water State Fund, CDBG, FEMA HMGP	Reduce flooded roads and allow roads to remain open; better access for emergency and vehicle access
2	Flood, Severe Weather		Goal 5		<u>Township OEM, Floodplain Administrator</u>		Municipal budget for study; once project identified, funding sources will depend on the type of mitigation	Reduce risk to floods, reduce damages to floods

	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
3	Severe Winter Weather, Severe Weather		Goal 1		<u>Township Administration</u>		Transportation Enhancement Program, CDBG	Reduce utility outages
4	All Hazards		Goal 1		<u>Township Fire Department</u>		FEMA HMGP and FMA, Township Budget, FEMA	Continuity of operations, power source during outage
							Fire Assistance	
5	Flood		Goal 4		<u>Planning Board</u>		Township Budget	Increase protection of development in the floodplain

2.7.3 STRATEGY RANKING AND PRIORITIZATION

	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	\$50k-\$250k	Under 1 year	1	2	2	2	2	9	Medium
2	\$50k-\$250k	1-3 years	1	3	1	2	3	10	Medium
3	\$250k-\$500k	1-3 years	2	2	3	2	2	11	Medium
4	Under \$50k	Under 1 year	1	1	1	1	2	6	Low
5	\$250k-\$500k	1-3 years	1	2	1	3	2	9	Medium

Figure 1: Township of Washington Hazard Area Extent and Location Map 1

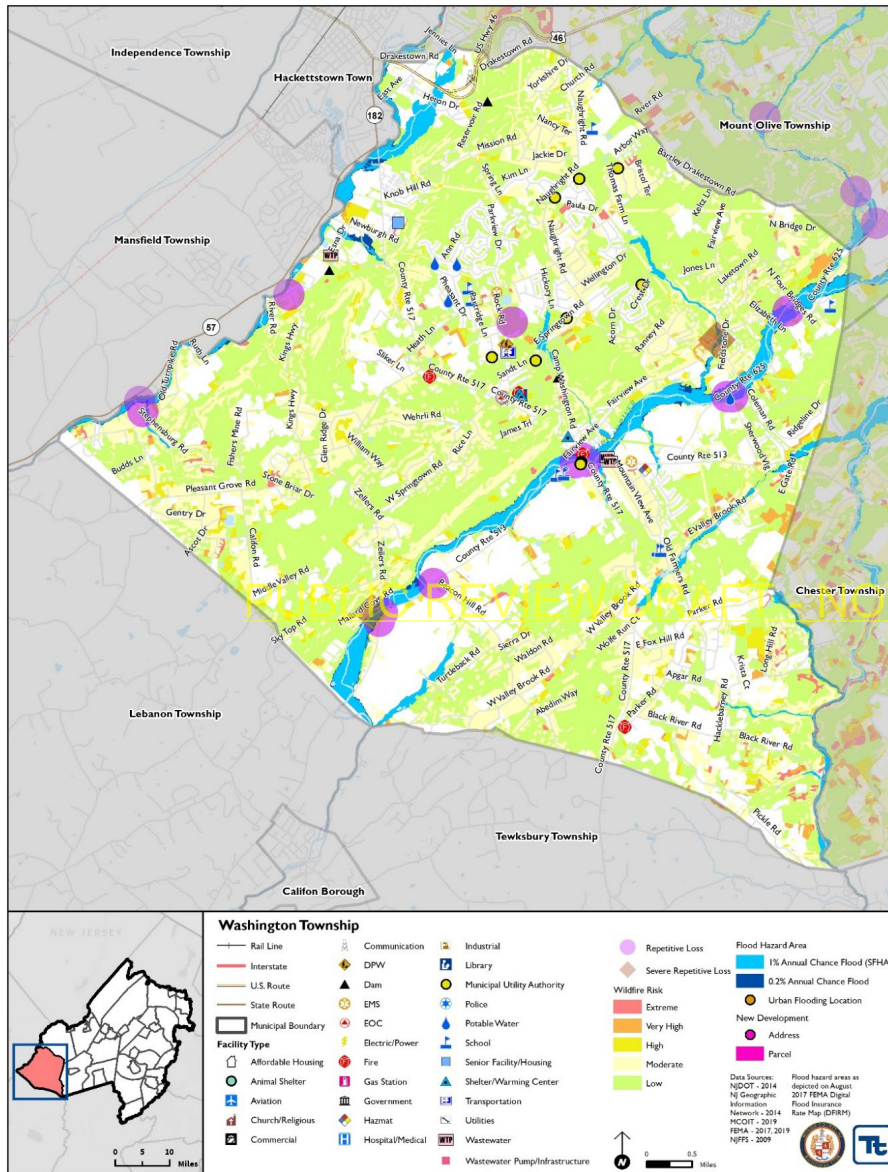
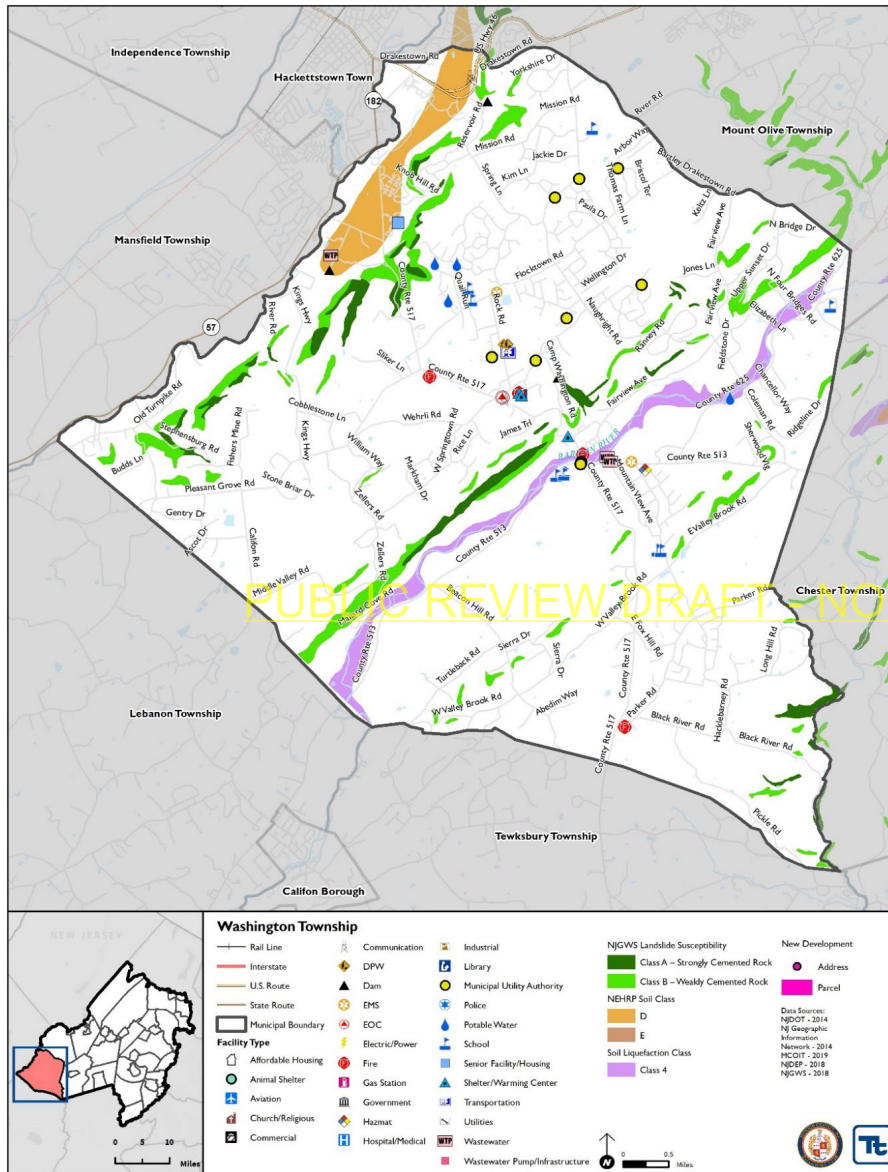


Figure 2: Township of Washington Hazard Area Extent and Location Map 2



APPENDIX 37: TOWNSHIP OF CHESTER COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Chester and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	N/A	-
Comment: State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14. Administered by the Planning Board. Chapter 78 Construction Codes, Uniform. Code adopted by the Township Council of the Township of Chester 6-17-1986 by Ord. No. 1:18-86. Official implements building codes as applicable for included hazards.					
Zoning Code	Yes	Local	Yes, if have planning board	Yes	-
Comment: Updated by the Zoning Office. Chapter 113 (Land Use). Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Reference C. 113 in the municipal code. Adopted 12-2-1997, Amended 4-15-1997). Administered by the Zoning Board. Includes chapters addressing steep slope development (C 113 Pt 3 Art 7) and stormwater management (C 113-309). Zoning Map amended 6-6-2018 by Ord. No. 2018-06.					
Subdivisions	Yes	Local	Yes, if have planning board	Yes	-
Comment: Updated by Planning/Zoning. Chapter 113 (Land Use) Part 4 (Subdivision of Land). Chapter 113-138 Subdivision of Land and Site Plan Requirements. Adopted 4-2-1991 by Ord. No. 2:19Y-91). The enforcing agency for the State Uniform Construction Code 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.					
Stormwater Management	Yes	Local	Yes	Yes	-
Comment: Updated by Planning/Zoning. Chapter 113 (Land Use) Part 8 (Stormwater Control). Title 7 of the NJ Administrative Code (N.J.A.C. 7:8); Chapter 172 Stormwater Control, administered by the DPW. Stormwater Management planning is implemented by the Borough Engineer.					
Post-Disaster Recovery	No		No	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Real Estate Disclosure	Yes	State	Yes	Yes	-
Comment: Updated by the Division of Consumer Affairs. N.J.A.C. 13:45A-29.1. Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	No		Yes, if have planning board	Yes	-
Comment: State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Shoreline Development	No	-	Yes	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes, if have planning board	Yes	-
Comment: Updated by Planning/Zoning. Administered by the Planning Board. Reference Ch 113: Land Use/Ch 113 Pt 2: Site Plan Review/Ch 113 Pt 2 Art 7: Final Approval of municipal code. Allows for the environmental commission and floodplain administrator as a designated official to review site plans.					
Environmental Protection	No		Yes	-	-
Comment: Township has an Environmental Commission created by Chapter 17 of the municipal Code which has have power to conduct research into the use and possible use of the open land areas of the township and may coordinate the activities of unofficial bodies organized for similar purposes, and may advertise, prepare, print and distribute books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its purposes. It shall keep an index of all open areas, publicly or privately owned, including open marsh lands, swamps and other wetlands, in order to obtain information of the proper use of such areas, and may, from time to time, recommend to the Chester Township Planning Board plans and programs for inclusion in a Township Master Plan and the development and use of such areas. Also there is an environmental element in the Master Plan which includes a description of floodplains, areas of environmental concern.					
Flood Damage Prevention	Yes	Federal, State, Local	No	No	Chester Township-008
Comment: Updated by Planning/Zoning. Chapter 113 (Land Use) Part 7 (Flood Damage Prevention) amended 5-19-1987 by Ord. No. 1:15B-87. The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code. The code should be updated to include one foot of freeboard for residential construction.					
Wellhead Protection	Yes	Local	No	No	-
Comment: Updated by Planning/Zoning. Chapter 113 (Land Use) Part 242.2 (Wellhead Protection).					
Emergency Management	No		Yes	No	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: 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	No		No	No	-
Comment:					
Disaster Recovery Ordinance	No		No	No	-
Comment:					
Disaster Reconstruction Ordinance	No		No	-No	-
Comment:					
Hazardous Material Ordinance	Yes	Local	-	-	-
Comment: Chapter 104 Hazardous Materials allows for the liability of cleanup and abatement costs.					
Soil Erosion and Sediment Control	Yes	Local	-	-	-
Comment: Chapter 113-191 Erosions Control Plan. Requires a soil erosion and sediment control plan conforming with the requirements of Part 3, Soil Removal and Land Disturbances, and Part 7, Flood Damage Prevention.					
Other: Steep slopes	Yes	Local	No	Yes	-
Comment: Updated by Planning/Zoning. Chapter 113 (Land Use) Part 118 (Steep Slopes)					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Municipal: Yes/No County: Yes	Yes	-
Comment: Updated by the Planning Board. Highlands Regional Master Plan (2004), Chester Township Master Plan (2000, Reexamination Report 2007). Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); County: Yes (40:27-2). Adopted on October 23, 2001, re-examination in 2013. The Plan includes maps for existing land use, critical wildlife habitat, environmental features, public utilities, community facilities, historic sites, zoning, circulation, and geology.					
Capital Improvement Plan	Yes	Local	Allowed	Yes/No	-
Comment: Updated annually by Township Chief Financial Officer. 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. Administered by the Administration.					
Disaster Debris Management Plan	Yes	Local	No	-	Chester Township-007
Comment: Department of Public Works					
Floodplain or Watershed Plan	Yes	Regional	No	Yes	-
Comment: Highlands Master Plan					
Stormwater Management Plan	Yes	Local	Yes	Yes	-
Comment: Updated by Engineering. Stormwater Management Plan 2005. On website.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Updated by Engineering. Stormwater Pollution Prevention Plan 2019. On website. 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).					
Urban Water Management Plan	No		No	N/A	-
Comment:					
Habitat Conservation Plan	No		No	N/A	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No		No	N/A	-
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.).					
Shoreline Management Plan	No		No	N/A	-
Comment:					
Community Wildfire Protection Plan	No		No	N/A	-
Comment:					
Community Forest Management Plan	Yes	Local	No	Yes	-
Comment: Managed by the Parks consultant. Optional accreditation for county and municipalities for reduction of liability, New Jersey Urban and Community Forestry Program (NJUCF).					
Transportation Plan	Yes	Local	No	Yes	-
Comment: Master Plan Transportation Element. Includes trees along transportation corridors.					
Agriculture Plan	Yes	Local, County, State	No	Yes	-
Comment: Master Plan Agricultural Element					
Climate Action Plan	No	Local	No	N/a	-
Comment:					
Tourism Plan	No	Local	No	N/A	-
Comment:					
Business Development Plan	No	Local	No	N/A	-
Comment:					
Other: Stream Corridor Management Plan	Yes	State	Yes	Yes	-
Comment: Updated by NJDEP					
Other: Open Space Plan	Yes	Local	Yes	Yes	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Updated by Council. Addresses open space requirement of Highlands Regional Master Plan and hazard areas indicated in the mitigation plan. Intended to protect the watershed to ensure safe drinking water for downstream users of the Raritan River.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes/No	-
Comment: EOP updated by the OEM Director. October 2019.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Local	No	No	-
Comment:					
Post-Disaster Recovery Plan	No	Local	No	No	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	Yes/No	-
Comment: Element of the EOP.					
Public Health Plan	Yes	Local	No	Yes	-
Comment: Annex included in the EOP.					
Other	-		-	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Planning and Zoning, Engineer, Construction Official Development goes to Planning Board
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes Buildable Lands Inventory conducted in 2017

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Chester.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	-
Mitigation Planning Committee	No	No
Environmental Board / Commission	Yes	Environmental Commission: Planning & Zoning
Open Space Board / Committee	Yes	The Township has an Open Space Advisory Committee and a Parks and Recreation Committee; Planning & Zoning
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE
Maintenance program to reduce risk	Yes	DPW storm basin maintenance
Mutual aid agreements	Yes	Administration, Police, DPW
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Consultant Planner & Consultant Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Consultant Planner & Consultant Engineer
Planners or engineers with an understanding of natural hazards	Yes	Consultant Planner & Consultant Engineer
Staff with training in benefit/cost analysis	Yes	Chief Financial Officer
Staff with training in green infrastructure	Yes	Consultant Engineer
Staff with education/knowledge/training in low impact development	Yes	Consultant Engineer
Surveyor	No	Consultant Engineer
Stormwater engineer	Yes	Consultant Engineer
Personnel skilled or trained in GIS applications	Yes	Consultant Planner
Local or state water quality professional	Yes	Health Department
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Watershed planner	Yes	Highlands Council
Environmental specialist	Yes	Consultant Engineer
Grant writers	Yes	Chief Financial Officer and Township Administrator
Resilience Officer	No	-
Other	No	-

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Chester.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes, County
Capital Improvements Project Funding	Yes, Governing Body
Authority to Levy Taxes for Specific Purposes	Yes, Governing Body
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes, Governing Body
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	Yes, County, State, and Governing Body

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Chester.

Table 5: Education and Outreach Capabilities

PUBLIC REVIEW DRAFT - NOT FINAL	
Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes, Consultant
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	www.chestertownship.org/ OEM site
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Facebook Twitter
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes, RAVE

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Chester.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	_____	
Building Code Effectiveness Grading Schedule (BCEGS)	No	_____	
Public Protection (Fire ISO Protection Class)	Yes	4	September 2014
Storm Ready Certification	No	_____	
Firewise Community Classification	No	_____	
Sustainable Jersey	Yes	Bronze	

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Department
Who is your floodplain administrator? (department/position)	Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2014
Does your floodplain management program meet or exceed minimum requirements?	Meets
• If exceeds, in what ways?	n/a
When was the most recent Community Assistance Visit or Community Assistance Contact?	Unknown
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
• If so, state what they are.	n/a
Are any RiskMAP projects currently underway in your jurisdiction?	No
• If so, state what they are.	n/a
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes
• If no, state why.	n/a
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
• If so, what type of assistance/training is needed?	n/a
Does your jurisdiction participate in the Community Rating System (CRS)?	No
• If yes, is your jurisdiction interested in improving its CRS Classification?	n/a
• If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?	16
• What is the insurance in force?	\$428,1000
• What is the premium in force?	\$15,808
How many total loss claims have been filed in your jurisdiction?	2

Criterion	Response
<ul style="list-style-type: none"> How many claims are still open or were closed without payment? 	0 open and 1 closed without payment
<ul style="list-style-type: none"> What were the total payments for losses? 	\$,5161.94
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Chester that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Chester has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Chester.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: Not applicable.

2.3 CRITICAL FACILITIES

There are no critical facilities located in the floodplain.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Chester has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township of Chester indicated the following:

- Geologic Hazard has been adjusted to Low, as steep slope issues are isolated in a small portion of the Township and do not present a hazard to roads or structures or life safety.
- Hazardous Substances has been adjusted to Medium as there is limited risk for the industrial release of hazardous substances. In general, the risk of hazardous substances is in transit on Route 206.
- Infestation has been adjusted to High due to the imminent threat of hazards and cascading effects of the emerald ash borer.

Table 8: Township of Chester Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperature	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Chester Township did not report any completed actions.

2.6 CANCELLED ACTIONS

Chester Township did not report any cancelled actions.

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2.7 HAZARD MITIGATION STRATEGY

2.7.1 STRATEGY BACKGROUND

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Not Started In Progress
1	Chester Township	Town-Wide Siren System	Town wide Storm Sirens. Current fire siren barely covers 20% of town and folks are used to hearing it, so it doesn't draw their attention. Need a different type	OEM to specify system requirements for town-wide system, work with Administrator to prepare a request for bid, review bids, and select vendor to install system.	Y	Not Started
2	Chester Township	Back-up Generator for Primary Shelter	Primary Shelter requires adequate back-up power.	Install new generator at Chester Library, a designated shelter for Chester Township and Chester Borough. Joint project with Chester Borough.	N	Not Started
3	Chester Township	Back-up Generator for Primary Shelter	Secondary Shelter requires adequate back-up power.	Upgrade old undersized generator at Black River Middle School, designated shelter	Y	Not Started
4	Chester Township	Ash Tree Removal/Trimming	Infestation of the emerald ash borer is resulting in the die-off of the prolific population of ash trees in the township causing imminent life safety and utility interruption hazards.	Implement Ash tree removal based on Township Tree Inventory	Y	In Progress

2.7.2 STRATEGY IMPLEMENTATION

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Wildfire	Severe Weather; Severe Winter Weather; Flood; Earthquake	Goal 1		<u>OEM</u>		Operating Budget	High
2	Severe Weather	Severe winter weather; Flood	Goal 1		-			
3	Severe Weather	Severe winter weather; Flood	Goal 1		<u>Township Administrator;</u> <u>OEM</u>		Operating Budget, HMGP Grant	High
4	Severe Weather	Severe winter weather; Wildfire	Goal 1		<u>Township Administrator,</u> <u>Township DPW</u>		Operating Budget, NJ Urban and Community Forestry Program (NJUCF)	High

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2.7.3 STRATEGY RANKINGS

Action	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Priority
1	\$250k-\$500k	1-3 years	2	1	2	3	3	11	Medium
2	\$250k-\$500k	1-3 years	2	2	2	3	3	12	High
3	\$250k-\$500k	1-3 years	2	2	2	3	3	12	High
4	Under \$50k	1-3 years	2	3	3	3	3	14	High

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Figure 1: Township of Chester Hazard Area Extent and Location Map 1

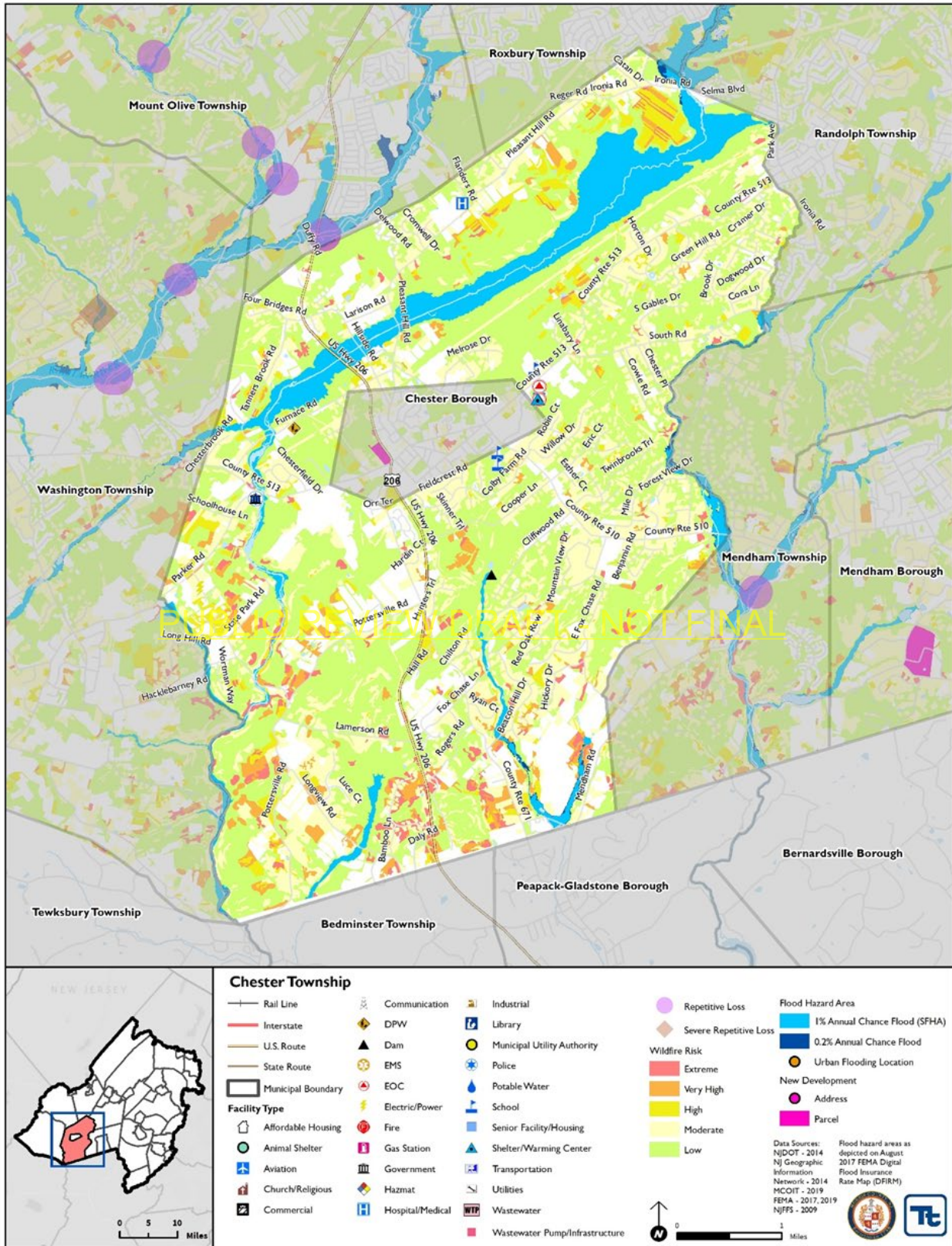
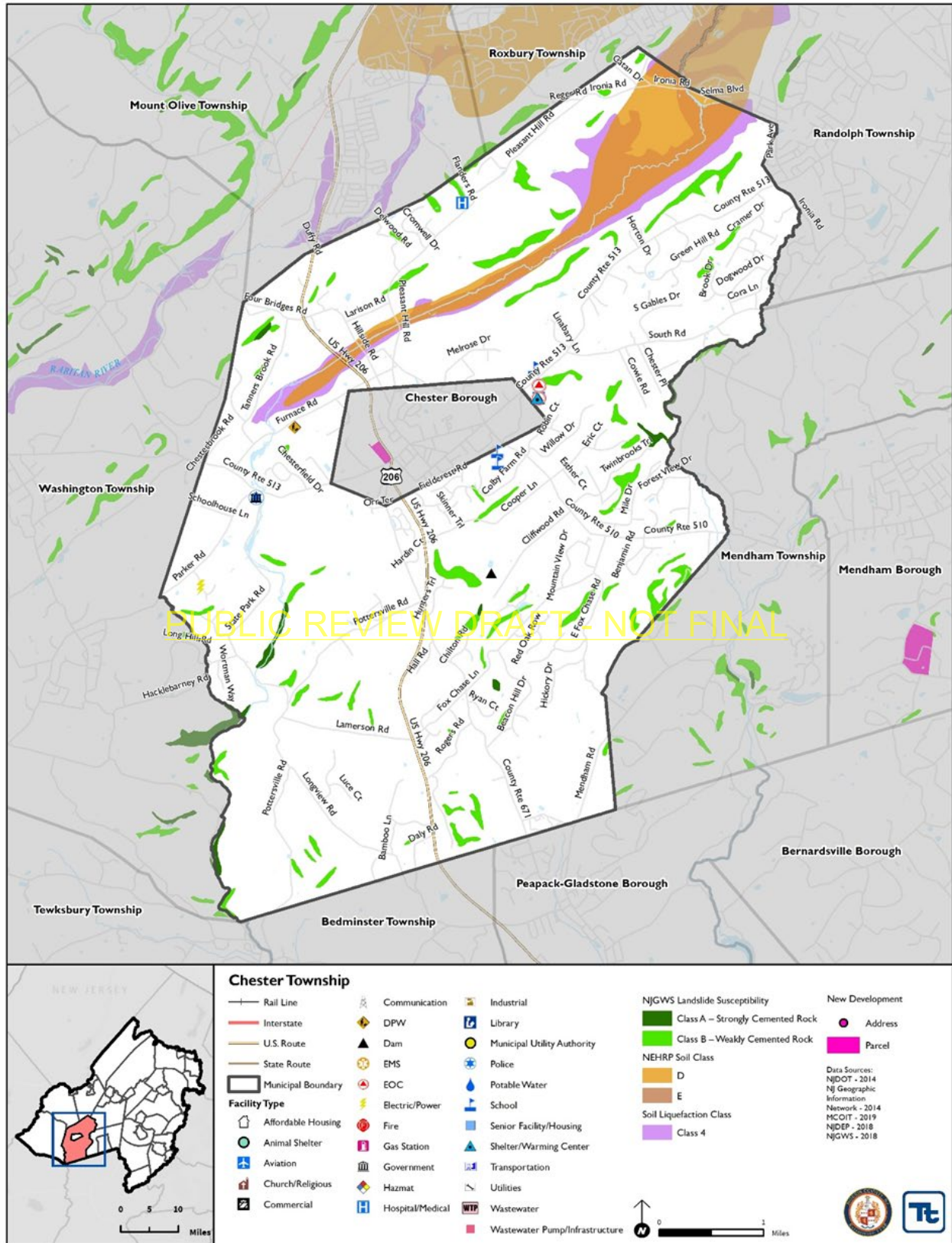


Figure 2: Township of Chester Hazard Area Extent and Location Map 2



APPENDIX 38: TOWNSHIP OF HANOVER COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Township of Hanover and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	Local and State	Yes	No	No
Comment: State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019. Enforced by Building Department, State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)					
Zoning Code	Yes	Local	Yes, if have planning board	No	No
Comment: State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. 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. Enforced by Zoning Officer, Chapter 166. Zoning map updated April 2023.					
Subdivisions	Yes	Local	Yes, if have planning board	No	No
Comment: P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 The 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. Enforced by Zoning Officer, Chapter 166.					
Stormwater Management	Yes	State and Local	Yes	No	No
Comment: See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8. Enforced by Planning Board, March 2005.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State	Yes	No	No
Comment: Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Enforced by Township Administrator. Identifies hazardous areas in Hanover: Underground lines, sewage, airport.					
Growth Management	Yes	Local and State	Yes, if have planning board	No	No

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: State Mandated on a municipal level. See Zoning Ordinance. Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Land Use Element in Master Plan.					
Shoreline Development	No	-	No	-	-
Comment: NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone Management Rules N.J.A.C. 7:7E-1 et seq.					
Site Plan Review	Yes	Local	Yes	No	No
Comment: 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 freeholders 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. Township Engineer and Township Planner perform Zoning Compliance and Development Standards Review.					
Environmental Protection	No	-	Yes	-	-
Comment: The rules that are utilized by the NJ Department of Environmental Protection and other environmental agencies are codified at Title 7 of the NJ Municipal Administrative Code.					
Flood Damage Prevention	Yes	Local	No	No	No
Comment: The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance.					
Wellhead Protection	No	-	No	-	-
Comment: 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)).					
Emergency Management	No	-	No	-	-
Comment: 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	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Master Plan	Yes	Local	Yes	No	No
Comment: Per NJSA: Yes, if planning board (40:55D-28) and must be re-examined every ten years (40:55D-89.1); November 2013. Planning Board, November 2013.					
Capital Improvement Plan	Yes	Local	Allowed	No	No
Comment: 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.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	No	No
Comment: U.S. Army Corps of Engineers Regulatory Program Regulations (33 CFR 320-332). Enforced by Township Engineer, Chapter 141.					
Stormwater Management Plan	Yes	Local	Yes	No	No
Comment: 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). Enforced by Planning Board, Chapter 166-104, March 2005.					
Stormwater Pollution Prevention Plan	Yes	Local, State	Yes	No	No
Comment: 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).					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment: May develop a conservation plan element in master plan per NJSA 40:5D-28b (8).					
Economic Development Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Per NJSA 40:55D-28b. (9) There can be a generic Economic Development Element of the County Comprehensive Plan. Municipality can establish Economic Development Commission that can facilitate incentive programs (façade programs, low-interest loans, etc.).					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	-	-
Comment: This Plan describes existing Township programs, policies, and procedures; establishes manageable goals and sets CSIP objectives are set for the 2016 - 2020 timeframe. New Jersey Urban & community Forestry Program have extended the effective dates of the Management Plan. New guidelines are expected to be adopted October 2023.					
Transportation Plan	Yes	Local	No	No	No
Comment: Circulation plan and Circulation Plan Appendix - Bicycle and Pedestrian Connectivity Framework Plan element in master plan per NJSA 40:55D-28b. (4).					
Agriculture Plan	No	-	No	-	-
Comment: May develop a farmland preservation plan element per NJSA 40:5D-28b (13).					
Climate Action Plan	No	-	No	-	-
Comment: May develop a green building and environmental sustainability plan element per NJSA 40:5D-28b (16).					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment: Have an Economic Development Advisory Committee					
Landmark Commission	Yes	Local	Allowed	No	No
Comment: 40:32-6. Acquisition and preservation of historical buildings and data - Any county may acquire, by gift or purchase, any real estate or any interests therein, together with any and all buildings thereon within the limits of the county for historical purposes, or for the purpose of preserving therein or thereon historical data and objects of historical interest.					
Response/Recovery Planning					
Emergency Operations Plan (EOP)	Yes	Local	Yes	No	No
Comment: 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.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated/Allowed	Has this been integrated? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: The purpose of the Continuity Plan is to assure that there is a process in place to maintain and or quickly resume delivery of critical functions within the township after any event that results in the disruption of normal delivery of services. Last Revised March 2023.					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Township Engineer and Township Planner perform Zoning Compliance and Development Standards Review
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No Township is fully built out

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Township of Hanover.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Township Engineer, Planner, Land Use Attorney
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	Yes	Township Committee Liaison and Planner
Economic Development Commission / Committee	Yes	Township Committee Liaison and Planner
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	OEM NotifyMe
Maintenance program to reduce risk	Yes	Township Engineer/DPW
Mutual aid agreements	Yes	Administrator
Technical/Staffing Capability		

Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Township Engineer and Township Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer, Township Planner, and Construction Office
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer, Township Planner, DPW Superintendent, and Construction Office
Staff with training in benefit/cost analysis	Yes	Municipal Financial Officer
Staff with training in green infrastructure	Yes	Engineer
Staff with education/knowledge/training in low impact development	Yes	Engineer
Surveyor	Yes	Consulting Surveyor
Stormwater engineer	Yes	Engineer, Consulting Engineer
Personnel skilled or trained in GIS applications	Yes	Engineer
Local or state water quality professional	Yes	Engineer
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Director OEM
Grant writers	No	-
Resilience Officer	No	-
Watershed planner	Yes	Whippany River Action Committee
Environmental specialist	No	-
Other professionals trained in conduction damage assessments	Yes	Engineer and Construction Office

PUBLIC REVIEW DRAFT - NOT FINAL

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Township of Hanover.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Yes

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Township of Hanover.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes Website provides link to County HMP on OEM Webpage
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook Twitter TAPinto Hanover
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Environmental Commission, Green Team, School and Park Safety Committee
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	No
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes NotifyMe – both non-emergency and SMART911 And RAVE

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Hanover.

PUBLIC REVIEW DRAFT - NOT FINAL

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	2	2010
Public Protection (Fire ISO Protection Class)	Yes	Fire District No. 2 - Class 4 Fire District No. 3 - Class 4	June 2013
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Engineering
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	12/12/19

Criterion	Response
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	n/a
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	Yes Morris County FEMA maps are preliminary
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
<input checked="" type="checkbox"/> If so, what type of assistance/training is needed?	Engineer needs CFM certification
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No n/a Yes
How many flood insurance policies are in force in your jurisdiction?*	61
• What is the insurance in force?	\$24,140,500
• What is the premium in force?	\$168,851
How many total loss claims have been filed in your jurisdiction?*	81
• How many claims are still open or were closed without payment?	0 Open, 15 Closed without payment
• What were the total payments for losses?	\$3,509,884
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

* Note: Policies and Claims from <https://bsa.nfipstat.fema.gov/reports/1011.htm> and <https://bsa.nfipstat.fema.gov/reports/1040.htm> as of 09/30/2018

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Hanover that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Hanover has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Hanover.

- Number of repetitive loss (RL) properties: 10
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 0

Source: FEMA BureauNet, 2019

Note: RL and SRL as of 04/26/2019; The number of SRL properties excludes RL properties and includes properties that have been verified only (SRL_Indicator = V).

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Status of Mitigation
Texas Eastern Gas Transmission	Natural Gas	x	x	2020-Hanover-001
Whippany - Suburban Energy Services	Natural Gas	x	x	2020-Hanover-002
Lake Parsippany Dike	Dam	x	x	2020-Hanover-003

Source: Morris County, 2019

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The Township of Hanover has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Township of Hanover Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperature	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

Hanover did not report any completed actions.

2.6 CANCELLED ACTIONS

Hanover did not report any cancelled actions.

Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress	Justification
Lake Parsippany Dike	Lake Parsippany Dike on Eastmans Brook is a critical facility in the floodplain.	Ensure EOP includes the Lake Parsippany Dike. Complete dam failure studies, where necessary.	Cancel	Dam not located in Hanover's jurisdiction.
Texas Eastern Gas Transmission	Texas Eastern Gas Transmission is in the floodplain.	Educate the owners of the property that the property is identified in the floodplain.	Cancel	Homeowners know if they are in the floodplain
Whippany - Suburban Energy Services	Whippany - Suburban Energy Services is in the flood plain	Educate the owners of the property that the property is identified in the flood plain.	Cancel	Homeowners know if they are in the floodplain
James Muir Dam	James Muir Dam on the Rockaway River is a critical facility in the floodway.	Ensure EOP includes the James Muir Dam. Complete dam failure studies, where necessary.	Cancel	Dam not located in Hanover's jurisdiction
Parsippany Road and Horsehill Road	Drainage along Parsippany Road and Horsehill Road floods.	Conduct drainage study	Cancel	Revised into new actions in 2025 hazard mitigation strategy
Eden Mill Dam	Eden Mill Dam on the Whippany River is a critical facility in the floodway that is determined as Hazard Class II for Significant Hazard.	Notify the River Park Business Center, LLC that the Eden Mill Dam is a critical facility in floodplain. Ensure EOP includes the dam. Request a copy of their dam failure study.	Cancel	The dam is private and not under Hanover's jurisdiction. Removal of the dam by the private owner is ongoing. The dam has been breached. However recent delays resulting from having to file an amended NJDEP permit application.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 STRATEGY BACKGROUND

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
1	Hanover	New Jersey No Name #56	New Jersey No Name #56 Dam on Malapadis Brook is a critical facility in the flood plain.	Ensure EOP includes the Lake Parsippany Dike (NJ No Name #56). Complete dam failure studies, where necessary.	Not Started
2	Hanover	RL/SRL/Flood prone properties	Ten properties have repetitive losses and one has severe repetitive loss. Many are condos and businesses on Route 10 in Whippany that is in the Passaic River Floodplain.	Track flood-prone facilities and educate the owners of the RL/SRL properties that their property is identified and provide them mitigation options. Determine if they want to participate in a FEMA grant application and apply for funding.	Not Started
3	Hanover/Regional	Parsippany Road and Mt. Pleasant Avenue Flood Mitigation Study	Flood mitigation analysis	Provide strategies to minimize flooding impacts	In Progress
4	Hanover	Horse Hill Road and Saddle Road Drainage Improvement	Replace undersized and failing stormwater infrastructure, which result in flooding and road closures.	Ensure the adequate conveyance of stormwater runoff.	In Progress
5	Hanover/Regional	Whippany River Improvement Initiative	Flooding	Eliminate obstructions within the Whippany River	New
6	Hanover	Flood Warning System (Message Signs) - NJ State Highway Route 10	Reduce response action by Public Alert	Reduce response actions	New

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	2024 Project Status Provided by Respondent (not applicable to any new actions) Not Started In Progress
7	Hanover	Whippany Road Dam - Removal	Removal of a remnant dam	Improve the hydrology and hydraulics of the Whippany River	New

2.7.2 STRATEGY IMPLEMENTATION

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flooding		Ensures the integrity of the structure and identifies ongoing maintenance activities		Engineering, FPA, OEM	NJDEP Bureau of Dam Safety	Operating budget	Medium
2	Flooding		Eliminate Repetitive Losses	Eliminate response Actions	Engineering, FPA	Morris County	Morris County Flood Buy-Out Program (Blueways)	High

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
3	Flooding	Road closure	Minimize disruption of service and losses to local business and to traveling public.		Engineering, FPA	Morris County/Parsippany Road is a County roadway. The region includes Hanover, East Hanover, Morris Plains, Morris Township, Parsippany-Troy Hills, Florham Park, Morristown		High
4	Road Closure due to Flooding	Flooding	Eliminate Road Closures due to Flooding		Engineering, FPA		Capital Budget	High
5	Flooding		Eliminate obstructions within the Whippany River	Reduce flooding impacts	Engineering, FPA	Region Includes: Hanover, East Hanover, Morris Plains, Morris Township, Parsippany-Troy Hills, Florham Park	The Project is funded by a \$1.5 million grant administered thru the U.S. Dept. of Agriculture	High
6	Road Closure due to Flooding		Notification of Road Closures - Route 10		Engineering, FPA	NJ Department of Transportation		Medium

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
7	Removal of remnant dam that collects obstruction and restricts the flow of water		Improve the hydrology and hydraulics of the Whippany River	Potential flood reduction	Engineering, FPA	NJDEP Bureau of Dam Safety		Medium

2.7.3 STRATEGY RANKINGS

Action	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Ranking
1	\$50,000	2025	1	1	2	2	2	8	Low
2	\$750,000 per property /Estimate		2	3	3	1	1	10	Medium
3	0	2025	1	2	2	2	3	10	Medium
4	\$400,000	2024	1	2	3	3	3	12	High
5	\$1,500,000	2024	2	3	3	3	3	14	High
6	\$500,000	2027	1	1	2	2	1	7	Low
7	Over \$1M	2027	1	2	2	2	1	8	Low

Figure 1: Township of Hanover Hazard Area Extent and Location Map 1

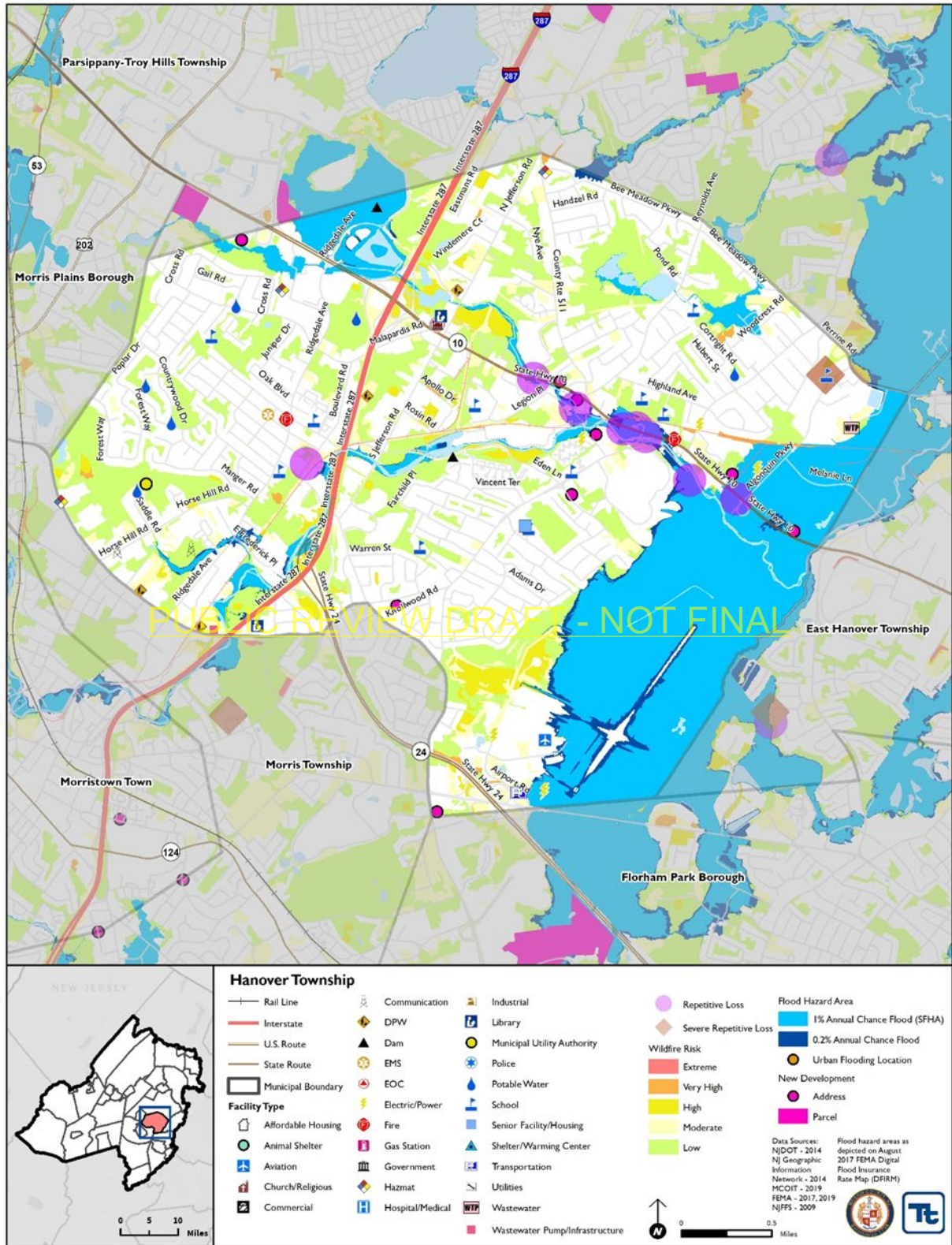
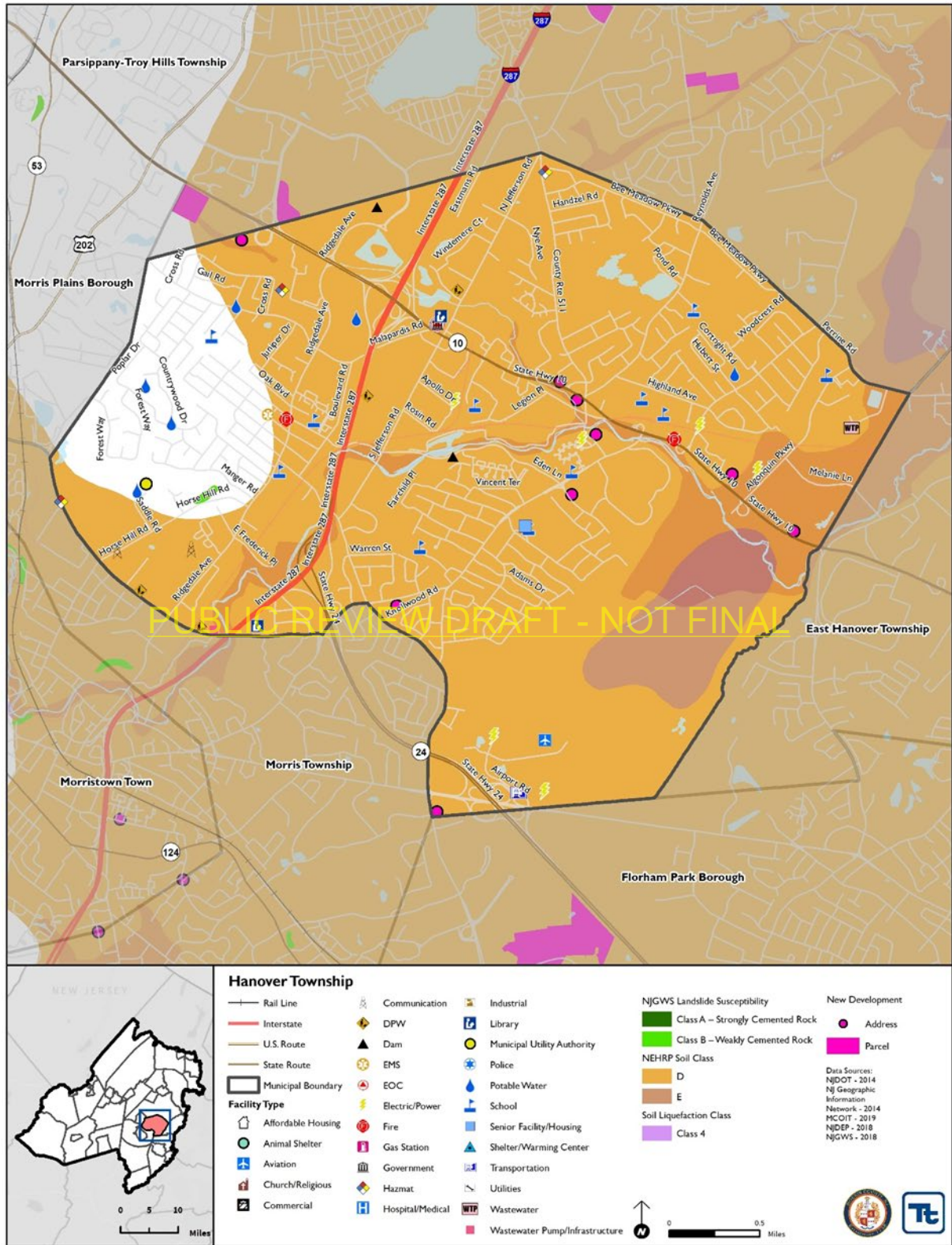


Figure 2: Township of Hanover Hazard Area Extent and Location Map 2



APPENDIX 38: TOWN OF MORRISTOWN COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Town of Morristown and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes		
Comment: State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) Chapter 12 Building and Construction: The Town of Morristown a State Uniform Construction Code Enforcing Agency to be known as the Division of Building and Enforcement of Uniform Construction Code, consisting of a Construction Official, Building Subcode Official, Plumbing 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 or his designee.					
Zoning Code	Yes	Local	Yes		
Comment: Zoning Office Chapter 30 (Land Use Regulations), Part 1 (Zoning); Planning Board On July 10, 2018, the Town Council adopted the new Land Development Ordinance. The Ordinance takes effect as of August 1, 2018 and applies to all applications deemed complete on or after that date. The Zoning Code governs the use and design of buildings in Morristown and standards for the design of improvements such as parking, landscaping, fencing, signage and environmental standards. This new ordinance is the first comprehensive update to the Morristown Land Development Ordinance since the previous ordinance was adopted in 1979, 38 years ago. These concepts are rooted in the 2014 Morristown Moving Forward Master Plan, which focused on circulation and community form, and proposed a form-based land use code that respects the Town’s existing character and its historic assets. This code marks a shift forward in the future of zoning in Morristown. The provisions of this ordinance regulate use, intensity and bulk as in the previous ordinance, but provides further guidelines with respect to ensuring new development strengthens long-established neighborhood character. Further, this code governs development in Morristown, not only by district, but also by street frontage, to ensure that the nature of new uses and buildings are consistent with that of Morristown’s established neighborhoods.					
Subdivisions	Yes	Local	Yes		
Comment: Division of Building and Enforcement Chapter 12 Building and Construction; Refer to Land Development Ordinance, July 10, 2018 (Planning Board)					
Stormwater Management	Yes	Local - Engineer			

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Department of Public Works Chapter 20 and Chapter 27; Ordinance O-4-06 ‘Stormwater Control Regulations’ Chapter 20 Water and Sewer; Chapter 27 Land Disturbance: The purpose of this chapter is to control the disturbance of land and related changes in grades, elevations or surface conditions by requiring adequate provisions for surface water retention and drainage in order to promote the safety, public health, convenience and general welfare of the community.					
Post-Disaster Recovery	No				
Comment:					
Real Estate Disclosure	No (State law only)	State			
Comment: Division of Consumer Affairs N.J.A.C. 13:45A-29.1 Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	Local			
Comment: Planning Board Ord. No. O-31-04					
Site Plan Review	Yes	Local			
Comment: Division of Building and Enforcement Chapter 12					
Environmental Protection	Yes	Local		Yes	
Comment: Chapter 17, Protection of Trees; Chapter 25 Health includes air pollution Town of Morristown Environmental Resource Inventory (ERI) Update 2011 – Environmental Commission – serves as the basis for plan use planning that protects resources; Discusses adverse impacts of increased stormwater runoff; steep slopes discussed (slopes greater than 15 percent, or rise of 1.5 feet or greater over a run of 10 feet and limiting the disturbance of steep slopes in preventing soil loss, erosion, excessive stormwater runoff and degradation of surface water. The ERI also discusses the Special Flood Hazard Areas including a map of the flood hazard areas in Town.					
Flood Damage Prevention	Yes	Local		Yes	
Comment: Division of Building and Enforcement Chapter 30 (Land Use Regulations), Part 3 (Flood Damage Prevention) NFIP: Freeboard – Yes, Local, State Division of Building and Enforcement / NJDEP N.J.A.C. 7:13					
Wellhead Protection	Yes				
Comment: Public water supply, wellhead protection and groundwater recharge areas in Morristown are discussed in the Environmental Resources Inventory					
Emergency Management	Yes	Local			
Comment: Chapter 3: Police Regulations; Chapter 16: Fire Prevention and Protection					
Climate Change					
Comment:					
Disaster Recovery Ordinance	No				
Comment:					
Disaster Reconstruction Ordinance	No				
Comment:					
Other	No				

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">Municipal Separate Storm Sewer System (MS4) – Yes, Local, Dept. of Public Works, Chapter 20Chapter 25: Health which includes communicable diseases, foodborne illness					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	
Comment: Town of Morristown Master Plan Re-Examination, Amended May 31, 2018; Redevelopment areas subject to flooding are identified in the plan. Open Space and Recreation Plan Update October 27, 2011; Environmental Commission – maps high risk flood zones on mapping in the plan					
Capital Improvement Plan	Yes	Local			
Comment: Planning Board, November 2014					
Disaster Debris Management Plan	No				
Comment:					
Floodplain or Watershed Plan	Yes	Local			
Comment: OEM work with all depts, Flood Acquisition Plan (with Morris County); The Environmental Resources Inventory discusses water resources including watershed management areas and watersheds in Morristown, aquifers (bedrock and surficial) in Morristown and groundwater recharge areas in Morristown					
Stormwater Management Plan	Yes	Local			
Comment: Construction Stormwater Management Plan, March 2005					
Stormwater Pollution Prevention Plan	Yes	Local			
Comment:					
Urban Water Management Plan	No				
Comment:					
Habitat Conservation Plan	No				
Comment: The Environmental Resource Inventory (2011) discusses land cover and critical habitat in Morristown, including a habitat rank.					
Economic Development Plan	Yes	Local			
Comment: Planning Board; there are numerous Redevelopment plans available on the Planning Division website. Complete Streets Policy adopted via Resolution R-105-12 in July 2012					
Shoreline Management Plan	N/A				
Comment:					
Community Wildfire Protection Plan					
Comment:					
Community Forest Management Plan	Yes				

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: Community Forestry Management Plan, 2010-2014. The Open Space and Recreation Plan (2011) was created in combination with Morristown's Environmental Resource Inventory and the Community Forestry Plan which together form the basis for the Town's visionary sustainable values, policies and goals.					
Transportation Plan	No				
Comment: In 2012, established and adopted its Complete Streets Policy. The 2014 Moving Morristown Forward - Mobility and Community Form Plan links transportation with the Town's Land Use and Community Form Plan. In 2016, the Town conducted a comprehensive mobility study to evaluate the Town's transportation network and interactions with regional transportation patterns and routes. The Master Plan Re-Examination 2018: Morristown Moving Forward, a Mobility and Community Form Plan) considered development and future land use patters with the Town's transportation capacity and infrastructure. The Morristown Mobility Initiative- Comprehensive Pedestrian, Traffic and Bike Study (2018) was completed including an assessment of traffic patters and volumes to serve as a basis for recommended improvements.					
Agriculture Plan	No				
Comment:					
Climate Action Plan	Yes				
Comment: The Environmental Resource Inventory (2011) discusses climate change. The Office of Sustainability inventories solar panels. Resolution R-138-2014 Resolution endorsing the adoption of green building practices for civic, commercial and residential buildings					
Tourism Plan	No				
Comment:					
Business Development Plan	No				
Comment:					
Other					
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local			
Comment: OEM					
Threat & Hazard Identification & Risk Assessment (THIRA)	No				
Comment:					
Post-Disaster Recovery Plan	No				
Comment:					
Continuity of Operations Plan					
Comment:					
Public Health Plan					
Comment:					

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other					
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes Building Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes, Zoning Board reviews
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes/No Decently built out, mostly redevelopment occurred

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Town of Morristown.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Municipal Planning Board
Mitigation Planning Committee	Yes	For Mitigation Plan Update and maintenance
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	
Economic Development Commission / Committee	No	
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Nixle
Maintenance program to reduce risk	No	
Mutual aid agreements	Yes	Surrounding municipalities and county
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Town Engineer, Town Planner (Consultant), Business Administrator
Engineers or professionals trained in building or infrastructure construction practices	Yes	Town Engineer
Planners or engineers with an understanding of natural hazards	Yes	Town Engineer
Staff with training in benefit/cost analysis	Yes	Town Engineering
Staff with training in green infrastructure	No	Insert appropriate information

Staff/Personnel Resource	Available?	Department/Agency/Position
Staff with education/knowledge/training in low impact development	Yes	Town Planner (Consultant)
Surveyor	Yes	Town Engineer
Stormwater engineer	Yes	Town Engineer
Personnel skilled or trained in GIS applications	Yes	Engineering Department
Local or state water quality professional	No	Contract, as needed
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Fire Department
Watershed planner	No	Insert appropriate information
Environmental specialist	No	Insert appropriate information
Grant writers	Yes	Consultant: Millennium
Resilience Officer	No	
Other		

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Town of Morristown.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Town of Morristown.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes (Police Department)
Do you have personnel skilled or trained in website development?	Yes (Consultant)
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes

Criterion	Response
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes Facebook, Municipal Website, Nixle/Rave, Local Newspaper
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes Shade Tree Commission
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes Municipal Website, Local Newspaper, Nixle/Rave
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes Nixle/Rave

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Town of Morristown.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No		
Building Code Effectiveness Grading Schedule (BCEGS)			
Public Protection (Fire ISO Protection Class)	Yes	3	
Storm Ready Certification	No		
Firewise Community Classification	No		
Sustainable Jersey	Yes	Silver	

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Yes
Who is your floodplain administrator? (name, department/position)	Town Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	Date not available in list provided by NJDEP
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No

Criterion	Response
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	Yes
☐ If so, what type of assistance/training is needed?	CFM Certification
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?*	10 NFIP Policies; 36 Write-Your-Own Policies
How many total loss claims have been filed in your jurisdiction?*	8 NFIP Claims; \$510,072 14 WYO Claims: \$108,123
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Town of Morristown that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Town of Morristown has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Town of Morristown

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 0

The Town Engineer indicated that the updated preliminary DFIRMs reduce the flood hazard area in Town. There are many properties in Morris Township with a Morristown mailing address. The SRL property listed as located in the Town, is physically located in the Township according to the street address provided in BureauNet. The Township Engineer will investigate further and notify the State and FEMA.

Source: FEMA BureauNet, 2024

Note: RL and SRL as of April 2024; The number of SRL properties excludes RL properties and includes properties that have been verified only (SRL_Indicator = V).

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Mitigation Status
		1% Event	0.2% Event	
JCP&L Morristown	Electric Power		X	Enhanced flood wall around the compound; The Town attends quarterly meeting with JCP&L to re-view transformer, responses, weak points in the circuit, outside of day-to-day contact. No further action needed.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented the Risk Assessment. The Town of Morristown has reviewed the Morris County hazard ranking table, as well as its individual results, to reflect the relative risk of the hazards of concern to the community.

Table 9: Town of Morristown Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Moderate	Hazardous Substances	High
Earthquake	Moderate	Severe Weather	High
Extreme Temperature	Moderate	Severe Winter Storm	High
Flood	High	Wildfire	Moderate
Geological Hazards	Moderate		

2.5 COMPLETED ACTIONS

The Town of Morristown did not report any completed actions.

2.6 CANCELLED ACTIONS

The Town of Morristown did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 STRATEGY BACKGROUND

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Not Started In Progress
1	Town of Morristown	Park Facility	George Gramby Memorial Park is located in the floodplain with an old bathroom structure vulnerable to flooding; impacted in 2011.	Construct a new bathroom facility by the street and parking lot outside of the floodplain	Yes	In Progress
2	Town of Morristown	Western Ave – increase stormwater drainage capacity	Western Ave is a long stretch of road with no inlets and water goes down to Searing Ave in the Township	Install seepage pits turning into the storm drain system to catch water earlier, reduce velocity and heavy flow, perc water into ground; mitigate adverse effects of erosion	Yes	In Progress
3	Town of Morristown	Pine Street - Address repetitive flooding on/about #40 at low spot in the road	Low Spot at #40 Pine takes notable water from municipal, state, and county roads, exceeding storm drain and storm line capacity, flooding road and #40 Pine Street building.	Due to difficulty of downstream storm line locations (through various easements and under formidable improvements), re-route drainage flows to different reaches of the storm system, bypassing this point of backup.	Yes	In Progress

2.7.2 STRATEGY IMPLEMENTATION

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Flood	Severe Weather	Goal 1		Engineer	N/A	Local funding; FEMA HMA funding	
2	Flood	Severe Weather	Goal 1		Engineer	N/A	Capital budget	Flood mitigation
3	Flood	Severe Weather	Goal 1		Engineer	N/A	Capital budget	Flood mitigation

2.7.3 STRATEGY RANKINGS

Action	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	PUBLIC REVIEW DRAFT - NOT FINAL					Total	Ranking
			Potential for Lives Saved	Potential for Reduced Property Damages	Potential for Reduced Response Actions	Benefits Exceed Costs	Community Action Priority Ranking		
			1 - Little Potential 2 - Some Potential 3 - Major Potential	1 - Little Potential 2 - Some Potential 3 - Major Potential	1 - Little Potential 2 - Some Potential 3 - Major Potential	0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	1 - Low Priority 2 - Medium Priority 3 - High Priority		
1	\$250k-\$500k	1-3 years	1	2	1		3	7	Low
2	Over \$1M	1-3 years	2	3	2	2	3	12	High
3	\$500k-\$750k	1-3 years	1	3	3	3	3	13	High

Figure 1: **Town of Morristown** Hazard Area Extent and Location Map

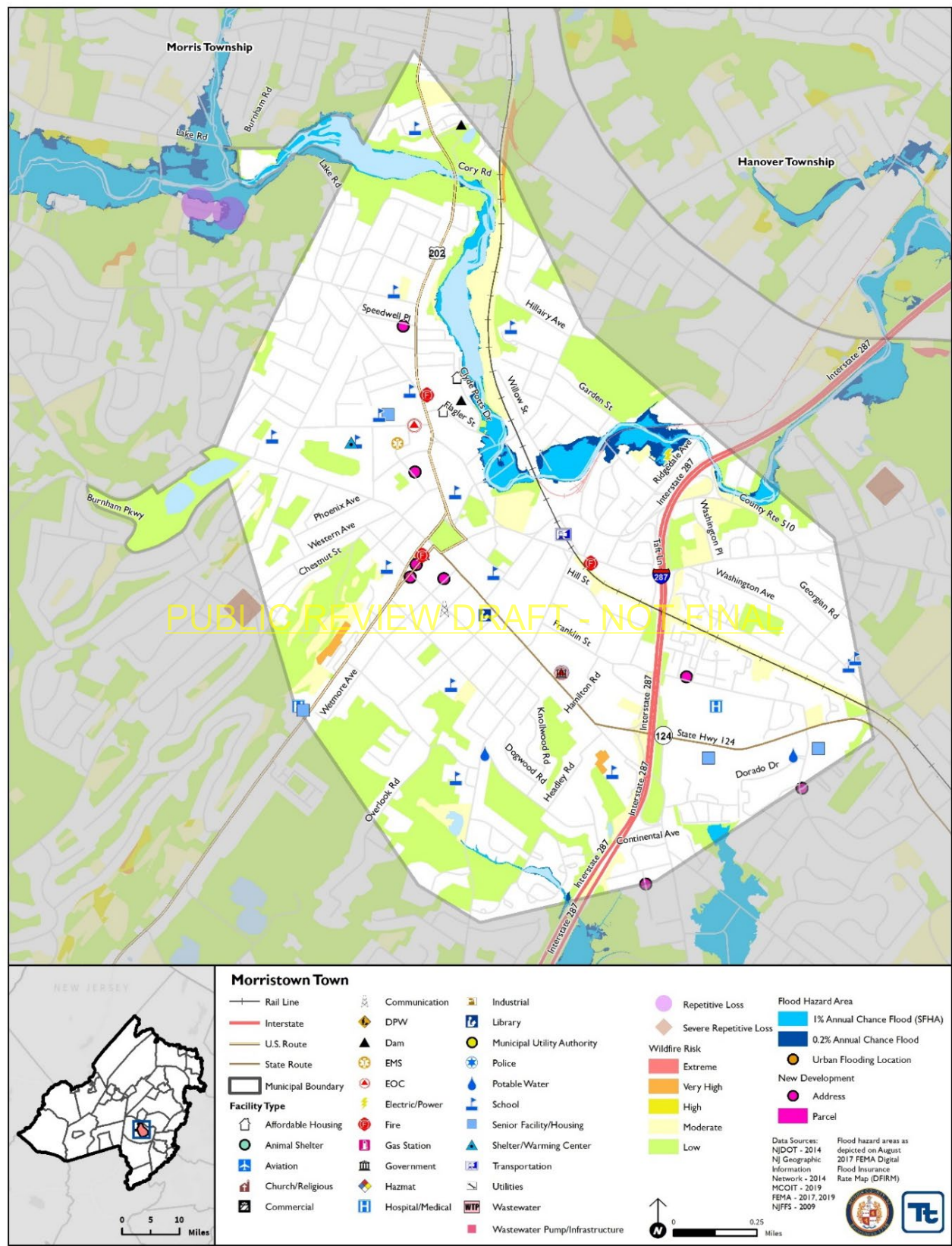
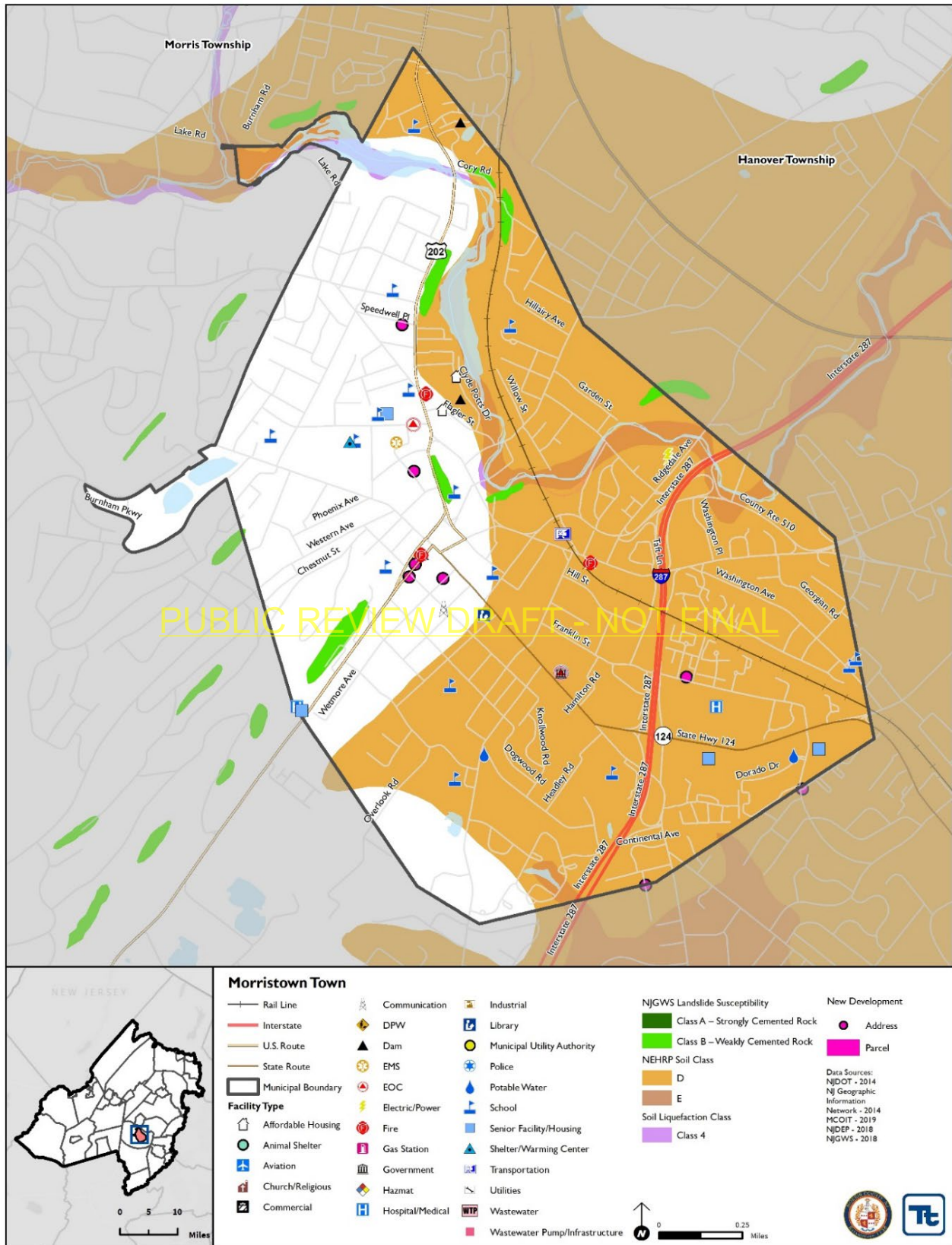


Figure 2: **Town of Morristown** Hazard Area Extent and Location Map



APPENDIX 39: BOROUGH OF MOUNT ARLINGTON COMMUNITY

1 COMMUNITY CAPABILITIES ASSESSMENT

Table 1 through Table 6 summarizes the different community capabilities and tools that are available to the community to potentially assist in mitigating the impacts of hazards.

1.1 PLANNING, LEGAL AND REGULATORY CAPABILITIES

The table below summarizes the legal and regulatory tools that are available to the Borough of Mount Arlington and where hazard mitigation has been integrated.

Table 1: Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State, Local, Construction Department	Yes	No	-
Comment: State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.), Chapter 67 of Borough Code					
Zoning Code	Yes	Local, Zoning Board	Yes	No	-
Comment: Chapter 17 (Land Development) Article 8 (Zoning); the purpose of this article is to establish a precise and detailed plan for the use of land and buildings in the Borough of Mount Arlington, based upon the Borough Master Plan, and any amendments, enacted in order to promote and protect the public health, safety, morals, comfort, convenience and the general welfare of the people.					
Subdivisions	Yes	Local, Land Use Board	Yes	Yes	-
Comment: Chapter 17 (Land Development), Article V (Development Requirements) - When the Borough receives a development permit application or subdivision request, they require sketch plats and sketch site plans to show topography, slopes, flood hazard areas, wetlands, and bodies of water.					
Stormwater Management	Yes	Local, Land Use Board	Yes	Yes	-
Comment: Chapter 17 (Land Development), Article IX (Stormwater and Flood Plain Regulations) – the purpose of this article is to protect people and property and preserve the health, safety, and general welfare of the Borough from uncontrolled stormwater runoff and flooding.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	-	-
Comment: N.J.A.C 13:45A-29.1					
Growth Management	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Site Plan Review	Yes	Local	Yes	-	-
Comment: Chapter 17 (Land Development), Article IV (Development Procedures) – any application that wants to develop in the Borough must apply for and obtain approval of the Planning Board. A subdivision and site plan application must be completed. Building permits are not issued until a site plan is submitted and approved by the Planning Board.					
Environmental Protection	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none">Article XI of the Borough of Mt. Arlington Ordinance contains an Environmental Assessment Ordinance entitled "Environmental Impact and Environmental Impact Statement." This Ordinance section sets forth requirements for the submission of a detailed Environmental Appraisal for all land development applications and for an Environmental Impact Statement (EIS) for those development applications that meet or exceed the threshold criteria set forth in the Borough Code. The EIS must contain detailed inventory, analysis, findings and mitigation measures regarding the potential environmental impact of the proposed project on all environmental resources, including but not limited to freshwater wetlands, surface waterbodies, floodplains, topography, groundwater, geology, air quality, wildlife, vegetation, threatened and endangered species and historic and archaeological resources.Ordinance Section 161, entitled "Trees," sets forth requirements to regulate and control indiscriminate and excessive removal, cutting and destruction of trees in order to prevent conditions which cause increased surface drainage with commensurate loss of groundwater infiltration to replenish subsurface water supplies; siltation, sedimentation, soil erosion and decreased soil fertility; dust conditions and mosquito breeding places; and impairment of the stability and value of real estate; all of which conditions are now and will be in the future a detriment to the public safety, health and general welfare.Chapter 17, Article XII (Critical Area Development Control) – the purpose of this article is to protect the health, safety, and welfare of people and property within the Borough from improper construction, building, and development on steep slope and hillside areas in the Borough and more particularly, but without limitation, to reduce the peculiar hazards which exist in hillside areas by reason of erosion, siltation, flooding, soil slippage, surface water runoff pollution of potable water supplies from nonpoint sources, and destruction of unique and predominant views. When the Borough receives a development permit application, they require sketch plats and sketch site plans to show topography, slopes, flood hazard areas, wetlands, and bodies of water.					
Flood Damage Prevention	Yes	Federal, State, Local, Construction	Yes	Yes	-
Comment: Chapter 17 (Land Development), Article IX (Stormwater and Flood Plain Regulations) – the purpose of this article is to protect people and property and preserve the health, safety, and general welfare of the Borough from uncontrolled stormwater runoff and flooding. Section 41 of Chapter 17 provides specific floodplain requirements for the Borough. The Borough Engineer is responsible for enforcing this chapter. The Borough requires all new residential construction, residential additions, and substantial improvements of residential structures in the floodplain to have their lowest floor, including basement, elevated to at least six inches above the base flood elevation. All new non-residential construction in the floodplain must have their lowest floor (including basement) elevated at least one foot above the base flood elevation or be floodproofed, depending on the type of facility.					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	No	-	No	-	-

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local, Land Use and Planning Board	Yes	No	-
Comment: Last revision was in 2005; updated in December 2015. The 2015 Master Plan is consistent with the Highlands Regional Master Plan, where applicable, and the goals of the Lake Hopatcong Commission to “safeguard Lake Hopatcong as a natural, scenic, and recreational resource to ensure that the lake may be enjoyed to the fullest possible measure by citizens of, and visitors to, the State both now and in the future”. While the Master Plan does not specify the Morris County HMP, some of the goals of the Master Plan align with those of the Morris County HMP including protecting environmentally sensitive areas including streams, wetlands and steep slopes. The land use map of the Borough includes slopes, wetlands, water, and flood hazard areas.					
Capital Improvement Plan	Yes	Local, Administrative	Yes	No	-
Comment: This is incorporated into the annual budget that is approved each year. It includes a line item for capital improvements with funds outlined for road improvements, water utility, and sewer utility.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	Yes	Local, Land Use Board	No	-	-
Comment: This was identified in the 1999 version of the Master Plan and had been addressed through the development of public sanitary sewer service along the Lake Hopatcong area					
Stormwater Management Plan	Yes	Local, Land Use Board	Yes	-	-
Comment: Plan is Consistent with the N.J.A.C 7:8-5.4 Runoff Quantity Standards intended to mitigate flooding impact caused by runoff					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	-	-
Comment:					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					

Morris County, New Jersey, Multijurisdictional Hazard Mitigation Plan 2025

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Economic Development Plan	Yes	Local, Land Use Board	No	-	-
Comment: The Plan is specific in areas currently designated for commercial development which is well suited in location to minimize natural hazard impacts					
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	Yes	Local	No	-	-
Comment: <ul style="list-style-type: none"> Impervious Cover Reduction Action Plan for Mount Arlington Borough – August 10, 2016 – conducted by Rutgers University based on the amount of calculated impervious surfaces in the Borough. The plan provided green infrastructure practices the Borough could implement. 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local, OEM	Yes	-	-
Comment: Emergency Operations Plan					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years ? If yes- how?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Public Health Plan	Yes	Local	No	-	-
Comment: Borough Health Department – share health department with Mount Olive					
Other	No	-	No	-	-
Comment:					

Table 2: Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes - Construction Department and Land Use Board
Does your jurisdiction have the ability to track permits by hazard area?	No – no designated hazard areas in the Borough
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes – but the borough is nearly fully developed

1.2 ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The table below summarizes potential staff and personnel resources available to the Borough of Mount Arlington.

Table 3: Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use Board – combined board handling the business of both the Planning and Zoning Boards
Mitigation Planning Committee	Yes	OEM, Administration, Land Use
Environmental Board / Commission	Yes	Mount Arlington Green Initiatives Committee (MAGIC) - the main focus of the committee is community outreach and organizing events that will introduce and endorse sustainable practices to Borough residents
Open Space Board / Committee	Yes	Land Use Board
Economic Development Commission / Committee	No	
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	RAVE reverse 911 through the County
Maintenance program to reduce risk	No	
Mutual aid agreements	Yes	Surrounding Communities

Staff/Personnel Resource	Available?	Department/Agency/Position
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	J. Caldwell & Associates, LLC, CP Engineers LLC, Matrix New World Engineering Inc.
Engineers or professionals trained in building or infrastructure construction practices	Yes	J. Caldwell & Associates, LLC, CP Engineers LLC, Matrix New World Engineering Inc.
Planners or engineers with an understanding of natural hazards	Yes	J. Caldwell & Associates, LLC, CP Engineers LLC, Matrix New World Engineering Inc.
Staff with training in benefit/cost analysis	Yes	CP Engineers, LLC – Borough Engineering
Staff with training in green infrastructure	Yes	CP Engineers and MAGIC
Staff with education/knowledge/training in low impact development	Yes	J. Caldwells and Associates
Surveyor	Yes	J. Caldwell & Associates, LLC, CP Engineers LLC, Matrix New World Engineering Inc.
Personnel skilled or trained in GIS applications	No	
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	OEM
Watershed planner	No	
Environmental specialist	No	
Grant writers	Yes	Millennium, CP Engineers, and J. Caldwell & Associates
Resilience Officer	No	
Other	No	

PUBLIC REVIEW DRAFT - NOT FINAL

1.3 FISCAL CAPABILITIES

The table below summarizes financial resources available to the Borough of Mount Arlington.

Table 4: Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	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
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

1.4 EDUCATION AND OUTREACH CAPABILITIES

The table below summarizes the education and outreach resources available to the Borough of Mount Arlington.

Table 5: Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – OEM Coordinator/Police Chief
Do you have personnel skilled or trained in website development?	Yes – Borough has contractor to do this
Do you have hazard mitigation information available on your website? • If yes, briefly describe.	Yes – On the municipal website and Facebook page
Do you use social media for hazard mitigation education and outreach? • If yes, briefly describe.	Yes – Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? • If yes, briefly describe.	Yes – LEPC, Lake Hopatcong Foundations
Do you have any other programs already in place that could be used to communicate hazard-related information? • If yes, briefly describe.	Yes – Municipal newsletters, emails
Do you have any established warning systems for hazard events? • If yes, briefly describe.	Yes – reverse 911

1.5 COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Mount Arlington.

Table 6: Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	NP	NP
Building Code Effectiveness Grading Schedule (BCEGS)	-	-	-
Public Protection (Fire ISO Protection Class)	-	-	-
Storm Ready Certification	No	NP	NP
Firewise Community Classification	No	NP	NP
Sustainable Jersey	Yes	Bronze	12/12/2019

1.6 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 7: National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering
Who is your floodplain administrator? (name, department/position)	Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	Chapter 99 (Flood Damage Prevention Ordinance) – Adopted 12/16/1987; Specific conditions is in Chapter 17, Article 41 (2006)

Criterion	Response
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets the minimum
When was the most recent Community Assistance Visit or Community Assistance Contact?	September 14, 2010
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If no, state why.	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
Does your jurisdiction participate in the Community Rating System (CRS)? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction? • What is the insurance in force? • What is the premium in force?	20 Policies in force. \$5,400,000 Insurance In-Force. \$7,107 Premium In-Force.
How many total loss claims have been filed in your jurisdiction? • How many claims are still open or were closed without payment? • What were the total payments for losses?	3 Claims. 0 claims still open. 1 claim closed without payment. Total claim amount \$3,807
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

2 HAZARD ANALYSIS AND RISK ASSESSMENT

2.1 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Mount Arlington that illustrate the probable areas impacted within the municipality. 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 have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Mount Arlington has significant exposure. Refer to Figure 1 and Figure 2.

2.2 REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Borough of Mount Arlington.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

2.3 CRITICAL FACILITIES

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain.

Table 8: Potential Flood Losses to Critical Facilities and Lifelines

There are no critical facilities or lifelines identified in the floodplain at this time.

2.4 HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment).

Table 9: Borough of Mount Arlington Hazard Ranking Input

Hazard	Ranking	Hazard	Ranking
Drought	Medium	Hazardous Substances	High
Earthquake	Medium	Severe Weather	High
Extreme Temperature	Medium	Severe Winter Storm	High
Flood	Low	Wildfire	Low
Geological Hazards	Low		

2.5 COMPLETED ACTIONS

Mount Arlington reported the following completed actions.

Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Justification
Enhance Pandemic Response Operations	While the Borough has some equipment to assist with pandemic response, additional equipment and enhancements are needed.	Enhance the pandemic response operations of the Borough to address current and potential diseases. This will include increasing the stockpile of disinfectants for Borough equipment, purchasing new equipment to allow for social distancing, purchase thermal readers for staff and residents entering municipal buildings, purchase portable UV disinfectant system for shared areas and equipment, and purchase personal protective equipment for staff (e.g. masks, gloves, face shields).	The Borough purchased PPE and enhanced procedures after Covid-19.

2.6 CANCELLED ACTIONS

Mount Arlington did not report any cancelled actions.

2.7 HAZARD MITIGATION STRATEGY

2.7.1 STRATEGY BACKGROUND

Action	Jurisdiction	Mitigation Action Name	What is the problem the action is solving?	How does the action solve the problem?	Is this a continuing action from 2020 plan? Yes/No	2024 Project Status Not Started In Progress
1	Mount Arlington	Generators for Public Schools	Problem: Two public schools in the Borough, Mt. Arlington Public School and Edith M. Decker school are both identified as shelters for the Borough. However, neither school has backup power. In the event of a power outage, the schools cannot function as shelters for residents.	Working with the Borough Engineer, identify the proper size generators for each school. Once identified, purchase and install generators and associated equipment at each school.	Yes	Not Started
2	Mount Arlington	Public Education and Outreach Program	Problem: The Borough maintains a website and social media accounts that provide information to residents. This includes announcements, emergency alerts, forms, and contact information. However, the website does not include hazard-related information.	The Borough will develop and implement a multi-hazard public awareness program. This will include information on the types of hazards that can impact the Borough based on the County's HMP. Topics will include preparedness, mitigation measures, safe generator use, and posting information about the County's HMP on the municipal website.	Yes	In Progress

2.7.2 STRATEGY IMPLEMENTATION

Action	What is the main hazard from the 2025 update that the action mitigates?	List any additional hazards from the 2025 mitigation plan update that the action mitigates	What is the main goal that the action addresses?	List any additional goals that the action addresses	What agencies will lead the implementation of this action?	What agencies will support the implementation of this action?	What are potential sources of funding that can support this mitigation action?	What benefits does this action provide?
1	Severe Weather	All Hazards	Goal 1		Borough Engineer, School Superintendent		FEMA HMGP, BRIC, PDM, CDBG	Provide generator support for critical facilities.
2	Severe Weather	All Hazards	Goal 2		Borough OEM Coordinator, Borough Administrator		Borough Budget	Ensure public is informed of hazards and risks.

PUBLIC REVIEW DRAFT - NOT FINAL

2.7.3 STRATEGY RANKINGS

Action	What is the estimated cost of this action?	What is the estimated timeline for this action to be implemented?	Potential for Lives Saved 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Property Damages 1 - Little Potential 2 - Some Potential 3 - Major Potential	Potential for Reduced Response Actions 1 - Little Potential 2 - Some Potential 3 - Major Potential	Benefits Exceed Costs 0 - BCA equal 2 - Minor Exceedence 3 - Major Exceedence	Community Action Priority Ranking 1 - Low Priority 2 - Medium Priority 3 - High Priority	Total	Action Priority
1	Under \$50k	1-3 years	2	1	1	1	2	7	Low
2	Under \$50k	1-3 years	2	1	1	1	2	7	Low

Mount Arlington Borough

Facility Type

- Affordable Housing
- Animal Shelter
- Aviation
- Church/Religious
- Commercial
- Communication
- DPW
- Dam
- BMS
- Electric/Power
- Fire
- Gas Station
- Government
- Hazmat
- Hospital/Medical
- Industrial
- Library
- Municipal Utility Authority
- Police
- Portable Water
- School
- Senior Facility/Housing
- Shelter/Warming Center
- Transportation
- Utilities
- Wastewater
- Wastewater Pump/Infrastructure

Flood Hazard Area

- 1% Annual Chance Flood (SFHA)
- 0.2% Annual Chance Flood
- Urban Flooding Location
- Address
- Parcel

Wildfire Risk

- Extreme
- Very High
- High
- Moderate
- Low

Repetitive Loss

- Severe Repetitive Loss

Data Sources:

- NIDOT - 2014
- NJ Geographic Information Network - 2014
- MCOT - 2019
- FEMA - 2017/2019
- NIPPS - 2009

Flood hazard areas as depicted on August 2017 FEMA Digital Flood Insurance Rate Map (DFIRM)

Scale: 0 5 10 Miles

North Arrow

Scale: 0 0.5 Miles

Logos: NJ, TC

Figure 2: Borough of Mount Arlington Hazard Area Extent and Location Map 2

