



13. TOWNSHIP OF UPPER

This jurisdictional annex to the Cape May County Hazard Mitigation Plan (HMP) provides information to assist public and private sectors in the Township of Upper with reducing losses from future hazard events. This annex is not guidance of what to do when a disaster occurs; its focus is on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex presents a general overview of Upper, describes who participated in the planning process, assesses Upper's risk, vulnerability, and capabilities, and outlines a strategy for achieving a more resilient community.

13.1 HAZARD MITIGATION PLANNING TEAM

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

Table 13-1 summarizes Township officials who participated in the development of the annex and in what capacity. Additional documentation of the Township's planning activities through Planning Partnership meetings is included in Volume I.

Table 13-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Frank Donato, CFO, OEM Coordinator Address: 2100 Tuckahoe Road, Petersburg NJ 08270 Phone Number: (609) 628-2011 Email: fdonato@ocnj.us	Name/Title: Mike Jones, Deputy OEM Coordinator Address: 2100 Tuckahoe Road, Petersburg NJ 08270 Phone Number: (609) 628-2011 Email: mjones@uppertownship.com
National Flood Insurance Program Floodplain Administrator	
Name/Title: Ryan MacNeill, PE, Floodplain Administrator, Office of Township Engineer Address: 2100 Tuckahoe Road, Petersburg NJ 08270 Phone Number: N/A Email: N/A	
Additional Contributors	
Name/Title: Ryan MacNeill, PE, Floodplain Administrator, Office of Township Engineer Method of Participation: Provided information on Township capabilities and code and ordinances. Also provided information on NFIP requirements for the Township and building permits. Provided status updates on previous mitigation actions and new mitigation action development.	

13.2 COMMUNITY PROFILE

The Township of Upper is located on the northernmost portion of Cape May County, New Jersey. It is bounded north by Atlantic County, New Jersey, on the east by the City of Ocean City, on the southeast by City of Sea Isle City and the





Atlantic Ocean, on the south-southwest by the Borough of Woodbine and Township of Dennis and the west by portions of the Township of Dennis and Cumberland County, New Jersey. It is part of the Ocean City Metropolitan Statistical Area. The Township is made up of 10 small villages or towns: Beesleys Point, Marmora, Palermo, Seaville, Tuckahoe, Greenfield, Marshallville, Steelmantown, Petersburg and Strathmere. Strathmere, which includes ~1.3 miles of Atlantic beachfront, adjoins with the city of Sea Isle City on its south end.

13.2.1 GOVERNING BODY FORMAT

The governing body of Upper Township, New Jersey, is the Township Committee, which is composed of five members elected at-large by the residents. These committee members serve staggered three-year terms to ensure continuity and stability in governance. Each year, the committee selects one of its members to serve as the mayor, providing leadership and representing the township in various capacities. This structure allows for a balanced and democratic approach to local government, ensuring that the needs and interests of the community are effectively addressed.

13.2.2 POPULATION AND SOCIAL VULNERABILITY

According to the U.S. Census, the 2020 population for Upper Township was 12,593, a 13.2 percent of the County population.

Research has shown that some populations are at greater risk from hazard events because of decreased resources or physical abilities. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. Data from the 2020 U.S. Census indicates that 5.7 percent of the population is 5 years of age or younger, 24.2 percent is 65 years of age or older, 0.5 percent is non-English speaking, 1.8 percent is below the poverty threshold, and 9.4 percent is considered disabled.

13.2.2.1 ALICE IN CAPE MAY COUNTY

ALICE is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the County. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold – ALICE households plus those in poverty – can't afford the essentials.

According to 2021 Point-in-Time-Data from ALICE, 26% of the 48,860 households in Cape May County are ALICE households (on par with the state average of 26%). The median household income in Cape May is \$78,657, and the County sees a labor force participation rate of 57%. Cape May County faces low household income compared to the state average of \$89,296, along with a low labor participation rate of 57% compared to the state average of 66%. 8% of Cape May households live in poverty, which falls below the state average of 10%.



13.3 JURISDICTIONAL CAPABILITY ASSESSMENT AND INTEGRATION

Upper performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume I describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment for this annex includes analyses of the following:

- Planning and regulatory capabilities
- Development and permitting capabilities
- Administrative and technical capabilities
- Fiscal capabilities
- Education and outreach capabilities
- Classification under various community mitigation programs
- Adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into day-to-day local government operations. As part of the hazard mitigation analysis, planning and /policy documents were reviewed and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. Development of an updated mitigation strategy provided an opportunity for Upper to identify opportunities for integrating mitigation concepts into ongoing Township procedures.

13.3.1 PLANNING AND REGULATORY CAPABILITY AND INTEGRATION

Table 13-2 summarizes the planning and regulatory tools that are available to Upper.

Table 13-2. Planning and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
CODES, ORDINANCES, & REGULATIONS				
Building Code	Yes	Building and Housing, Chapter 10, adopted by the Township Committee in 1976 and amended through 2024	State and Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? There is hereby established in the Township a State Uniform Construction Code enforcing agency to be known as the Township Construction Department consisting of a Construction Official, Building Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, Fire Protection Subcode Official. The Construction Official shall be the chief administrator of the enforcing agency. Risk is reduced by ensuring all construction in the Township is completed in accordance with State Code.				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Zoning/Land Use Code	Yes	Zoning, Chapter 20, adopted by Township Committee in 2002 and amended through 2024	State and Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? A comprehensive Chapter regulating and limiting the uses and development of land and the uses and locations of buildings and structures; regulating and restricting the height and bulk of buildings and structures and determining the area of yards, courts and other open spaces; regulating and restricting the density of population. Risk is reduced by ensuring all land development in the Township is completed in accordance with State and Local Code.				
Subdivision Code	Yes	Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Committee in 2002 and amended through 2024	State, County and Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter shall be to provide rules, regulations and standards to guide land development in the Township of Upper. It shall be administered to ensure orderly growth and development, the conservation, protection and proper use of land, and adequate provisions for circulation, utilities and services in order to assure and promote the comfort, health, safety, convenience and general welfare of the Municipality.				
Site Plan Code	Yes	Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Committee in 2002 and amended through 2024	State, County and Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? The purpose of this chapter shall be to provide rules, regulations and standards to guide land development in the Township of Upper. It shall be administered to insure orderly growth and development, the conservation, protection and proper use of land, and adequate provisions for circulation, utilities and services in order to assure and promote the comfort, health, safety, convenience and general welfare of the Municipality.				
Stormwater Management Code	Yes	Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Committee in 2002 and amended through 2024	State and Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? While not a separate Ordinance, Stormwater controls are covered in a comprehensive manner under Section 19-7.7 of the Township Code. Risk is reduced by ensuring all land development complies with the State stormwater management requirements (NJAC 7:8) to avoid adverse flooding impacts.				
Post-Disaster Recovery/ Reconstruction Code	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Real Estate Disclosure Requirements	Yes	Senate Bill 3110; P. L. 2023, c. 93, July 3, 2023	State	Sellers and Landlords of commercial or residential property
How has or will this be integrated with the HMP and how does this reduce risk? For leases, the law amends the New Jersey Truth-in-Renting Act, N.J.S.A. 46:8-43 et seq., to require every landlord to notify in writing each of the landlord’s tenants, prior to lease signing or renewal, whether the property is located in the Federal Emergency Management Agency (FEMA) Special Flood Hazard Area (“100-year floodplain”) or Moderate Risk Flood Hazard Area (“500-year floodplain”) and if the landlord has actual knowledge that the rental premises or any portion of the parking areas of the real property containing the rental premises has been subjected to flooding. The law does not apply to (1) landlords who lease commercial space or residential dwellings for less than one month, (2) residential dwellings in a premises containing not more than two units, (3) owner-occupied premises containing not more than three units, or (4) hotels, motels, or other guest houses serving transient or seasonal guests for a period of less than 120 days. The model notice is to contain the heading “Flood Risk” and questions for the landlord to answer regarding the landlord’s actual knowledge of past flooding of the property. The questions regarding the property being in a FEMA Special or Moderate Risk Flood Hazard Area shall not contain the option for “unknown.” To determine how the questions are to be answered, FEMA’s current flood insurance rate maps for the leased premises area must be consulted. The landlord will be required to answer whether the rental premises or any portions of the parking areas of the real property containing the rental premises ever experienced any flood damage, water seepage, or pooled water due to a natural flood event and, if so, the number of times that has occurred. The notice to residential tenants must also indicate that flood insurance may be available to renters through FEMA’s National Flood Insurance Program to cover their personal property and contents in the event of a flood and that standard renter’s insurance does not typically cover flood damage. For sales, the law also amends the New Jersey Consumer Fraud Act, N.J.S.A. 56:8-1 et seq., to require sellers of real property to disclose, on the property condition disclosure statement, whether the property is located in the FEMA Special or Moderate Risk Flood Hazard Area and any actual knowledge of the seller concerning flood risks of the property to the purchaser before the purchaser becomes obligated under any contract for the purchase of the property. The disclosure statement must contain the heading “Flood Risk” and ask the seller the following questions: • Is any or all of the property in the Special Flood Hazard Area (“100-year floodplain”) or a Moderate Risk Flood Hazard Area (“500-year floodplain”) according to FEMA’s current flood insurance rate maps? • Is the property subject to any requirement under federal law to obtain and maintain flood insurance on the property? Properties in the Special Flood Hazard Area with mortgages from federally regulated or insured lenders are required to obtain and maintain flood insurance. • Have you ever received assistance from, or are you aware of any previous owners receiving assistance from FEMA, the U.S. Small Business Administration, or any other federal disaster flood assistance for flood damage on the property? For properties that have received flood disaster assistance, the requirement to obtain flood insurance passes down to all future owners. • Is there flood insurance on the property? A standard homeowner’s insurance policy typically does not cover flood damage. • Is there a FEMA elevation certificate available for the property? If so, it must be shared with the buyer. An elevation certificate is a FEMA form, completed by a licensed surveyor or engineer, that provides critical information about the flood risk of the property and is used by flood insurance providers to determine the appropriate insurance rating for the property. • Have you ever filed a claim for flood damage to the property with any insurance provider? If the claim was approved, what was the amount received? • Has the property experienced any flood damage, water seepage, or pooled water due to a natural flood event, such as heavy rainfall, coastal storm surge, tidal inundation, or river overflow? If so, how many times? Not all provisions of this law have become effective at the time of the writing of this plan.				





	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Growth Management How has or will this be integrated with the HMP and how does this reduce risk? Plan Endorsement is the process established by the New Jersey Office of Smart Growth (NJOSG) to review municipal and regional plans for consistency with the New Jersey State Development and Redevelopment Plan. An important part of this study is the reassessment and refinement of the development Centers in the Township. These Centers, which are now regulated through the New Jersey Coastal Zone Management rules, were terminated as Coastal Area Facility Review Area (CAFRA) Centers in February 2005. Through this Plan Endorsement process with the NJOSG, Centers may be established and designated in the State Plan.	Yes	Plan Endorsement Petition, adopted by the Township Planning Board on November 16, 2006	State and Local	Township Committee
Environmental Protection Ordinance(s) How has or will this be integrated with the HMP and how does this reduce risk? Although not a separate Ordinance, Section 19-7.16 of this Chapter requires an Environmental Assessment for development projects. The impact on the environment associated with development projects necessitates a comprehensive analysis of the variety of problems that may result and the measures that can be taken to minimize the adverse impacts. It is recognized that the level of detail required for the variety of development applications will vary depending on the size of the project, the site conditions, the location of the project and the information already in the possession of the Township. As used here, environmental assessment means a written description and analysis of all possible direct and indirect effects the development will have on the site, as well as on the region, with particular attention to the potential effects on public health, safety and welfare, and the preservation and enhancement of the natural environment, and historic, cultural and other sensitive resources.	Yes	Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Council in 2002 and amended through 2024.	Local	Township Committee
Flood Damage Prevention Ordinance How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this section to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed: To protect human life and health; To minimize expenditure of public money for costly flood control projects.; To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.; To minimize prolonged business interruptions; To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, and streets and ;bridges located in areas of special flood hazard.; To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future ;flood blight areas.; To ensure that potential buyers are notified that property is in an area of special flood hazard.; and To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.	Yes	Flood Damage Control, Chapter 18, adopted by the Township Committee in 1987 and amended through 2022	Federal, State, County and Local	Township Committee
Wellhead Protection How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Emergency Management Ordinance How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Climate Change Ordinance How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Other	Yes	Construction of Bulkheads, Chapter 17, adopted by the Township Committee in 2015 and amended through 2018	State and Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? It is the purpose of this Chapter to promote public health, safety and general welfare, and to minimize public and private losses due to flood conditions. Bulkheads are an integral component for Flood Damage Control and are designed to: reduce the extent of flood waters that may flow across public and private property which may cause flood damage and reduce flood wave velocities.				
PLANNING DOCUMENTS				
General/Comprehensive Plan	Yes	Master Plan 1993, adopted by the Township Planning Board January 27, 1994 and 2020 Master Plan Re-examination Report and Master Plan Update	State and Local	Planning Board
How has or will this be integrated with the HMP and how does this reduce risk? In accordance with the New Jersey Municipal Planning Enabling Act, the purpose of Upper Township's Master Plan is to provide a guide to accomplish a coordinated and harmonious development of the municipality. Based on the analyses of present and future needs, the plan is designed to promote health, safety, and general welfare, as well as efficiency and economy in the land development process, and the maintenance of property values. Included in the goals of the 1994 Plan, is the continued provision for the preservation of open space by protecting woodlands, open fields, stream corridors, tidal marsh, wetlands, floodplains, and bodies of water. Use these natural features to organize and separate different types and intensities of land uses where necessary. Establish controls on the permitted disturbance of critical resources during land development.				
Capital Improvement Plan	No	-	-	-
How has or will this be integrated with the HMP and how does this reduce risk?				
Disaster Debris Management Plan	Yes	Upper Township has established two Temporary Debris Management Areas (TDMA) and were approved by the NJDEP on January 16, 2018.	Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? The designated temporary debris management areas provide space for debris collection to avoid adverse impacts to the environment.				
Floodplain Management or Watershed Plan	Yes	Annual Progress Report, Floodplain Management Planning, September 16, 2019	Local	Township Committee
How has or will this be integrated with the HMP and how does this reduce risk? Upper Township participated with the County of Cape May in preparing an All Hazards Mitigation Plan. This plan was completed in May 2016 and Upper Township approved the plan on June 13, 2016 with Resolution No. 146-2016. The plan was submitted and approved by FEMA Region II on June 9, 2016 with an expiration date of June 9, 2021. This plan serves as the Township's Floodplain Management Plan.				



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Stormwater Management Plan How has or will this be integrated with the HMP and how does this reduce risk? The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations. This plan 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. A "build-out" analysis has been included in this plan based upon existing zoning and land available for development. The plan also addresses the review and update of existing ordinances, the Township Master Plan, and other planning documents to allow for project designs that include low impact development techniques.	Yes	Township of Upper Stormwater Management Plan, dated January 12, 2005, revised November 16, 2006	State and Local	Township Committee
Open Space Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Urban Water Management Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Habitat Conservation Plan How has or will this be integrated with the HMP and how does this reduce risk? This Conservation Plan is adopted as an Element of the Upper Township Master Plan and constitutes an update and replacement of the current Conservation Plan Element prepared as part of the 1994 Master Plan. The Master Plan reflects the overall vision for the future of Upper Township and the Conservation Plan Element provides the structure for the protection, preservation, conservation and utilization of natural and cultural resources, including energy, open space, water supply, forests, soils, marshes, wetlands, rivers, fisheries, endangered or threatened wildlife species and other resources.	Yes	Conservation Plan Update, adopted by the Township Planning Board, February 17, 2011	Local	Township Committee
Economic Development Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Community Wildfire Protection Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Community Forest Management Plan How has or will this be integrated with the HMP and how does this reduce risk? Forest conservation provides protection of wildlife habitat and water supplies as well as maintain biological diversity.	Yes	Community Forestry Plan adopted in 2016	Local	Township Committee
Transportation Plan How has or will this be integrated with the HMP and how does this reduce risk? This plan provides an overview of the existing conditions and recommendations for bicyclists in Upper Township. It includes an analysis of crash data; identification of key bicycle traffic generators; review of key corridors for non-motorized traffic; and an assessment of the roadway network's bicycle Level of Traffic Stress (LTS). This report also highlights the recommendations developed by the project team to improve conditions for bicyclists in Upper Township.	Yes	Complete Streets, 2019 Bicycle Plan, 2019	Local	Township Committee



	Jurisdiction has this? (Yes/No)	Citation and Date (code chapter or name of plan, date of enactment or plan adoption)	Authority (local, county, state, federal)	Responsible Person, Department or Agency
Agriculture Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Climate Action/ Resilience/Sustainability Plan How has or will this be integrated with the HMP and how does this reduce risk? The Plan contains 27 recommendations that may have been or can be included as actions in the HMP. Also, many of the recommendations in this report are connected to the CRS program and as the Township had learned through the implementation of a successful CRS Program, it helps communities save money and become better prepared.	Yes	Getting to Resilience, dated April, 2015	Local	Township Committee
Tourism Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Business/ Downtown Development Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Other How has or will this be integrated with the HMP and how does this reduce risk? The Plan includes the development of a municipal stormwater management plan, required maintenance activities, implementing control of solids and floatables, locating stormwater discharge points, and a public education component.	Yes	Stormwater Pollution Prevention Plan, updated April 29, 2020	State and Local	Township Committee
Other How has or will this be integrated with the HMP and how does this reduce risk? The Plan addresses shoreline initiative for the Township such as living shorelines which can attenuate waves in moderate energy environments, lead to a reduction in erosion, enhance sediment accretion, and enhance aquatic habitat benefits for fish and bivalves.	Yes	Article 34, Environmental Conservation Law, Coastal Erosion Hazard Areas 6 NYCRR Part 505, Coastal Erosion Management Regulations	State and Local	Township Committee
RESPONSE/RECOVERY PLANNING				
Emergency Operations Plan How has or will this be integrated with the HMP and how does this reduce risk? The Municipal Emergency Manager, with support from the County OEM and New Jersey OEM, are continuing to develop, enhance, and implement existing emergency plans.	Yes	Emergency Operations Plan, February 24, 2017	Local	Township Committee
Continuity of Operations Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-
Substantial Damage Response Plan How has or will this be integrated with the HMP and how does this reduce risk?	No	-	-	-



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

13.3.2 DEVELOPMENT AND PERMITTING CAPABILITY

Table 13-3 summarizes the capabilities of Upper to oversee and track development.

Table 13-3. Development and Permitting Capability

	Yes/No	Comment
Do you issue development permits? - If you issue development permits, what department is responsible? - If you do not issue development permits, what is your process for tracking new development?	Yes	Construction and Zoning Office are responsible for issuing development permits within the Township.
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Flood Permits are issued for applicable development applications within the Flood Hazard Area
Do you have a buildable land inventory? If you have a buildable land inventory, please describe	Yes	Maintained on GIS. Buildout was prepared as part of the 2019 Wastewater Management Plan Update
Describe the level of buildout in your jurisdiction.	N/A	There is space for development opportunities within the Township.

13.3.3 ADMINISTRATIVE AND TECHNICAL CAPABILITY

Table 13-4 summarizes potential staff and personnel resources available to Upper and their current responsibilities that contribute to hazard mitigation.



Table 13-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
ADMINISTRATIVE CAPABILITY		
Planning Board	Yes	Planning Board Members
Zoning Board of Adjustment	Yes	Zoning Board of Adjustment Members
Planning Department	No	-
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Green Team
Open Space Board/Committee	No	-
Economic Development Commission/Committee	No	-
Public Works/Highway Department	Yes	Public Works
Construction/Building/Code Enforcement Department	Yes	Construction Department and Code Enforcement
Emergency Management/Public Safety Department	Yes	Emergency Management Coordinator
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Public Works/Engineering
Mutual aid agreements	Yes	Ocean City. The Township is creating, enhancing, and maintaining mutual aid agreements with neighboring communities.
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	No	-
Other	No	-
TECHNICAL/STAFFING CAPABILITY		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction/Engineering/Public Works
Planners or engineers with an understanding of natural hazards	Yes	Engineering
Staff with expertise or training in benefit/cost analysis	No	-
Professionals trained in conducting damage assessments	No	-
Personnel skilled or trained in GIS and/or Hazus applications	Yes	Engineering
Staff that work with socially vulnerable populations or underserved communities	No	-
Environmental scientists familiar with natural hazards	Yes	Engineering



Resources	Available? (Yes/No)	Comment (available staff, responsibilities, support of hazard mitigation)
Surveyors	Yes	Consultant on contract for Tax Map & GIS updates
Emergency manager	Yes	OEM
Grant writers	Yes	Consultant – Triad Associates
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

13.3.4 FISCAL CAPABILITY

Table 13-5 summarizes financial resources available to Upper.

Table 13-5. Fiscal Capabilities

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

13.3.5 EDUCATION AND OUTREACH CAPABILITY

Table 13-6 summarizes the education and outreach resources available to Upper.

Table 13-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment
Public information officer or communications office	No	-
Personnel skilled or trained in website development	No	Consultant is utilized for website maintenance



Outreach Resources	Available? (Yes/No)	Comment
Hazard mitigation information available on your website	Yes	Township website includes dedicated pages for Hazard Mitigation Plan, Stormwater Management and Floodplain Management
Social media for hazard mitigation education and outreach	Yes	Facebook
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Upper Township Green Team
Warning systems for hazard events	Yes	Onsolve/ CodeRED Flood Warning System for Strathmere
Natural disaster/safety programs in place for schools	Yes	OEM
Organizations that conduct outreach to socially vulnerable populations and underserved populations	No	-
Public outreach mechanisms / programs to inform citizens on natural hazards, risk, and ways to protect themselves during such events	Yes	CERT program training

13.3.6 COMMUNITY CLASSIFICATIONS

Table 13-7 summarizes classifications for community programs available to Upper.

Table 13-7. Community Classifications

Program	Participating? (Yes/No)	Classification	Date Classified
Community Rating System (CRS)	Yes	5	May 1, 2017
Building Code Effectiveness Grading Schedule (BCEGS)	Building Code Effectiveness Grading Schedule (BCEGS)	4 Residential 3 Commercial	December 6, 2018
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	District 1 – 6 District 2 – 8B-10 District 3 – 3/3Y District 4 5/5Y	Unknown
National Weather Service StormReady Certification	Yes	StormReady	September 10, 2019
Firewise Communities classification	No	-	-
Other: Organizations with mitigation focus (advocacy group, non-government)	Yes	Bronze	September 19, 2024

N/A = Not applicable

— = Unavailable

13.3.7 ADAPTIVE CAPACITY

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2022). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and



changing risk. Table 13-8 summarizes the adaptive capacity for each identified hazard of concern and the Township's capability to address related actions using the following classifications:

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

Table 13-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak
Dam Failure	Moderate
Drought	Moderate
Earthquake	Moderate
Extreme Temperature	Moderate
Flood	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Wildfire	Moderate

13.4 NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE

This section provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the National Flood Insurance Program (NFIP). The floodplain administrator listed in Table 13-1 is responsible for maintaining this information.

13.4.1 NFIP STATISTICS

Table 13-9 summarizes the NFIP policy and claim statistics for Upper.

Table 13-9. Upper NFIP Summary of Policy and Claim Statistics

# Policies	371
# Claims (Losses)	435
Total Loss Payments	\$9,801,655.87
# Repetitive Loss Properties (NFIP definition)	31
# Repetitive Loss Properties (FMA definition)	1
# Severe Repetitive Loss Properties	6
# Policies Within the 1% Annual Chance Flood Boundary	8

NFIP Definition of Repetitive Loss: The NFIP defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978.



FMA Definition of Repetitive Loss: FEMA's Flood Mitigation Assistance (FMA) program defines a repetitive loss property as any insurable building that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Definition of Severe Repetitive Loss: A residential property covered under an NFIP flood insurance policy and: (a) That has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or (b) For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. At least two of the claims must have occurred within any 10-year period, more than 10 days apart.

Source: FEMA, 2024

13.4.2 FLOOD VULNERABILITY SUMMARY

Table 13-10 provides a summary of the NFIP program in Upper.

Table 13-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction.	Strathmere, eastern inland areas along the Garden State Parkway, and inland areas along the Tuckahoe River, Mill Creek and Cedar Swamp Creek
Do you maintain a list of properties that have been damaged by flooding?	Yes, the Township maintains a list of properties which have been damaged by flooding.
Do you maintain a list of property owners interested in flood mitigation?	Yes, the Township maintains a list of property owners interested in flood mitigation
How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	Unknown, at this time.
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what projects are underway.	No, not at this time.
How do you make Substantial Damage determinations?	Repair cost exceeding 40% of the market value of the structure
How many Substantial Damage determinations were declared for recent flood events in your jurisdiction?	None were recently declared.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction? If there are mitigation properties, how were the projects funded?	None have been mitigated to-date.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? If not, state why.	Yes, the Township flood maps adequately address flood risk in the community.
NFIP Compliance	
What local department is responsible for floodplain management?	Engineering & Construction
Are any certified floodplain managers on staff in your jurisdiction?	Yes, the Township has certified floodplain managers on staff.
Do you have access to resources to determine possible future flooding conditions from climate change?	Yes, the Township has access to climate change resources.



NFIP Topic	Comments
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No, not at this time.
Provide an explanation of NFIP administration services you provide (e.g., permit review, GIS, education/outreach, inspections, engineering capability)	Flood Permit review, public outreach, stormwater inspections
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Review of construction cost compared to value of structure. Township code defines substantial improvement as any improvement(s) where construction costs exceed 40 percent of the market value of the structure within a 10-year period.
What are the barriers to running an effective NFIP program in the community, if any?	N/A
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? If so, state the violations.	No, not at this time.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	March 16, 2016
What is the local law number or municipal code of your flood damage prevention ordinance?	Upper Township Ordinance Chapter 18 Flood Damage Control
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?	Exceeds – CRS Class 5
Are there other local ordinances, plans or programs (e.g., site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	Yes, Engineering and the Planning and Zoning Boards ensure compliance with floodplain management requirements
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, currently Class 5

13.5 GROWTH/DEVELOPMENT TRENDS

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

Table 13-11. Number of Building Permits for New Construction Issued Since the Previous HMP

	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
2020				
Total Permits	19	0	0	19



	New Construction Permits Issued			
	Single Family	Multi-Family	Other (commercial, mixed-use, etc.)	Total
Permits within SFHA	8	0	0	8
2021				
Total Permits	13	1	0	14
Permits within SFHA	3	0	0	3
2022				
Total Permits	14	0	2	16
Permits within SFHA	4	0	0	4
2023				
Total Permits	8	0	1	9
Permits within SFHA	5	0	0	5
2024				
Total Permits	33	0	0	33
Permits within SFHA	4	0	0	4

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

Table 13-12. Recent Major Development and Infrastructure from 2017 to Present

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
No recent major development.					

* Only location-specific hazard zones or vulnerabilities identified.

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

Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zones*	Description / Status of Development
No known or anticipated major development.					

13.6 JURISDICTIONAL RISK ASSESSMENT

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



13.6.1 HAZARD AREA

Hazard area maps provided below illustrate the probable hazard areas impacted within the Township are shown in Figure 13-1 through Figure 13-23. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps are provided only for hazards that can be identified clearly using mapping techniques and technologies and for which Upper has significant exposure. The maps show the location of potential new development, where available.

Figure 13-1. Upper Township Sea Leve Rise and FEMA Flood Hazard Area Extent and Location Map

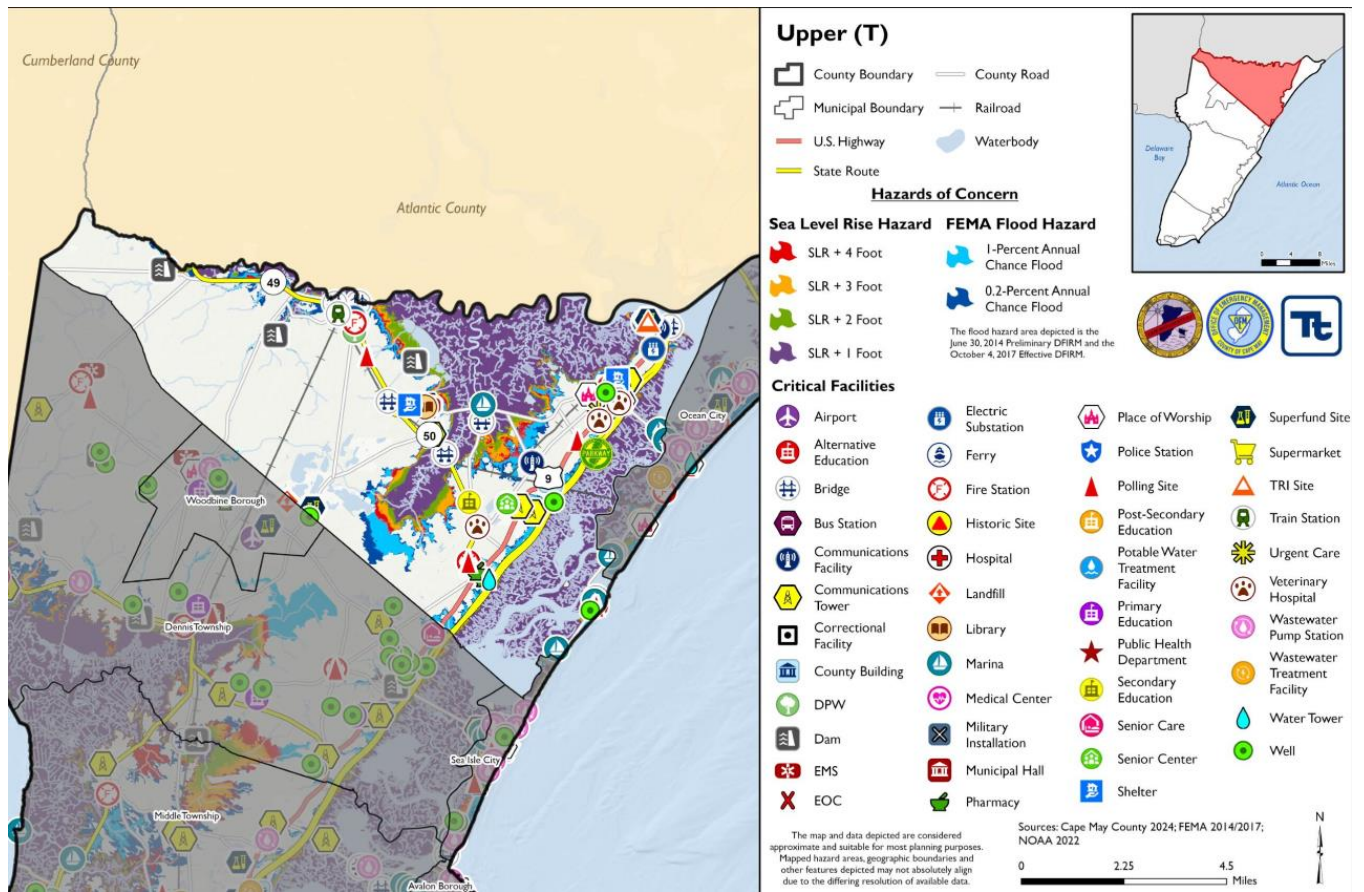


Figure 13-2. Upper Township SLOSH Hazard Area Extent and Location Map

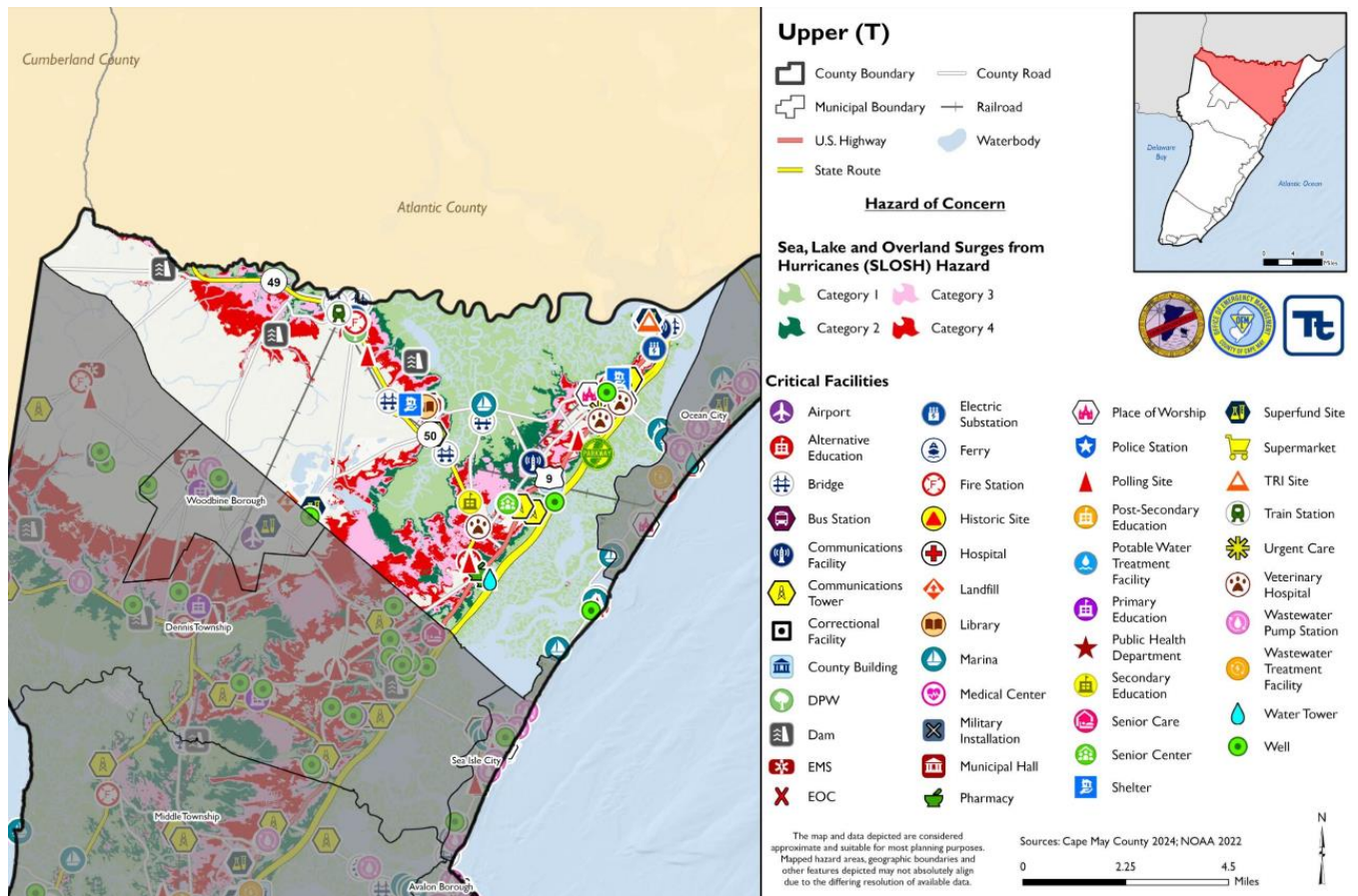
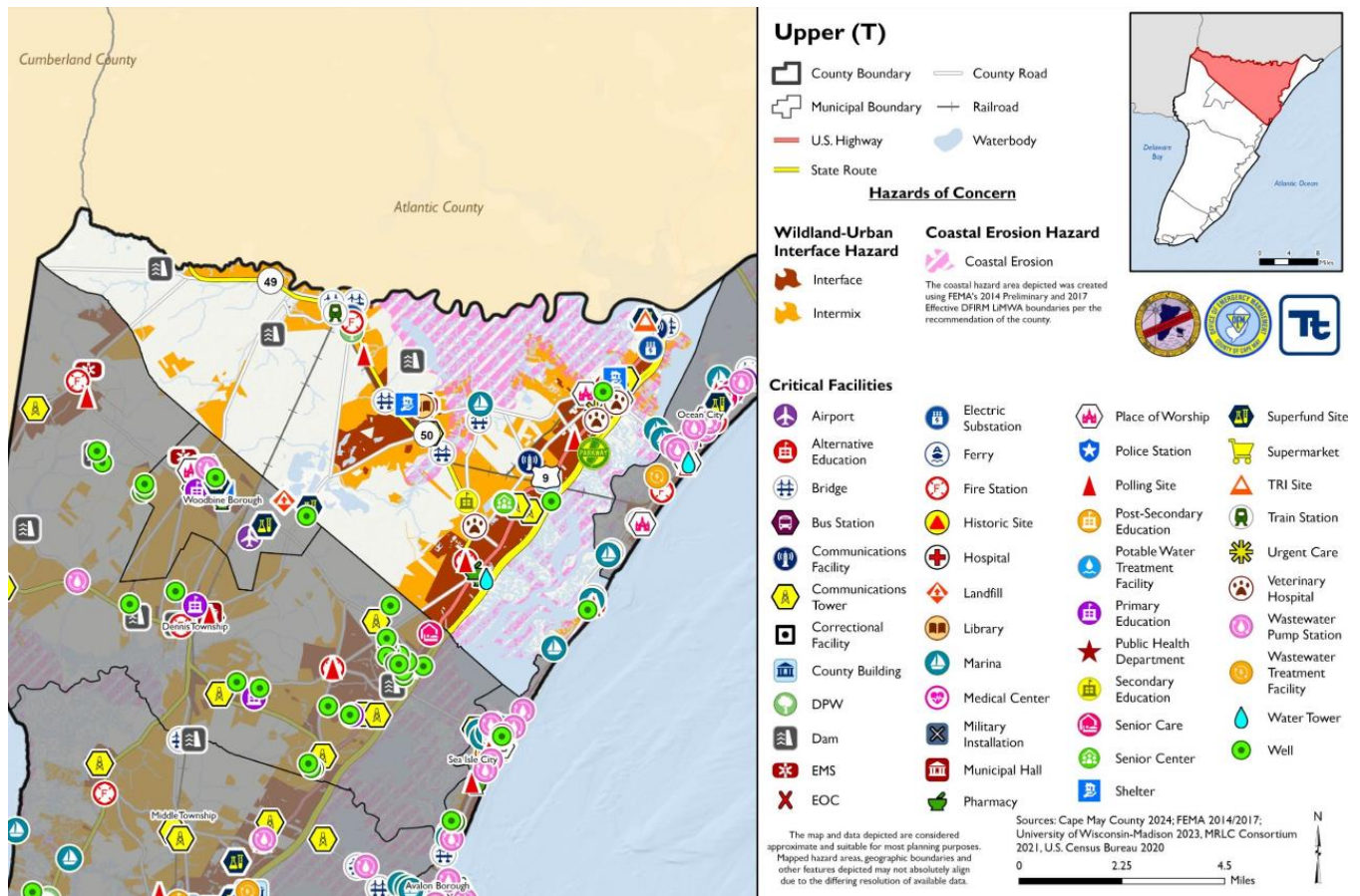


Figure 13-3. Upper Township WUI and Coastal Erosion Hazard Area Extent and Location Map



13.6.2 HAZARD EVENT HISTORY

The history of natural and non-natural hazard events in Upper is detailed in Volume I, where each hazard profile includes a chronology of historical events that have affected the County and its municipalities. Table 13-14 provides details on loss and damage in Upper during hazard events since the last hazard mitigation plan update.

Table 13-14. Hazard Event History in Upper

Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Upper
February 11, 2021	Severe Winter Weather (4597-DR-NJ)	Yes	Widespread snow fell and accumulate between 3 to 5 inches across the County, with some amounts locally a little higher. The County was eligible for Public Assistance through Federal Declaration.	No impacts were recorded.
September 1-3, 2021	Remnants of Hurricane Ida (EM-3573-NJ, DR-4614-NJ)	Yes	The remnants of Hurricane Ida produced heavy rainfall through the County. The County was eligible for Public Assistance through Federal Declaration.	No impacts were recorded.



Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Upper
January 3, 2022	Severe Winter Weather, Flood	No	A quick moving winter storm impacted Cape May County where a widespread 6 to 12 inches of snow fell. Moderate coastal flooding in the tidal areas of Cape May County occurred around the time of the morning high tide causing numerous road closures.	No impacts were recorded.
April 1, 2023	Severe Weather	No	Thunderstorms produced damaging winds and small to medium-sized hail. Multiple trees downed on Corson Tavern Road and Route 9 in Dennis Township. A structure fire was caused by lightning in Rio Grande.	Loss of beach sand with the tides and nor'easters
September 23, 2023	Severe Weather	No	Tropical Storm Ophelia resulted in a steady onshore flow along the coast, causing widespread tidal flooding. There were numerous road closures. Many homes and other buildings were surrounded by flood waters with some minor property damage occurring.	Loss of beach sand with the tides and nor'easters
January 19, 2024	Severe Winter Weather	No	A winter storm brought widespread light to moderate snowfall accumulations across the region. Snowfall totals ranged largely from around 3 to 4 across much of the zone. The highest snowfall report was from Dennis Township with 4.9.	No impacts were recorded.
April 18, 2022	Coastal Flooding	No	A fast-moving nor'easter generated the highest water level in several years (6.79 feet MLW) with a single tide. Water levels peaked just before midnight and receded before dawn.	Loss of beach sand with the tides and nor'easters
February 1-2, 2021	Coastal Flooding	No	A slow-moving winter storm generates strong northeast winds and flooding over three high-tide cycles: 6.67 feet (11 a.m. Feb. 1), 6.72 feet (11:20 p.m. Feb. 1) and 6.06 feet (11:40 a.m. Feb. 2).	Loss of beach sand with the tides and nor'easters
December 23, 2022	Coastal Flooding	No	A new moon, heavy rain and southerly winds gusting beyond 50 mph combine to cause moderate flooding as part of a system that swept across the nation in the days leading up to Christmas.	Loss of beach sand with the tides and nor'easters



Dates of Event	Event Type (Disaster Declaration)	County Designated?	Summary of Event	Summary of Damage and Losses in Upper
Sept. 30 – Oct. 5, 2022	Coastal Flooding	No	The remnants of a hurricane (Ian) that devastated southwestern Florida combine with an offshore system to generate six days of relentless northeast wind and rain. Tides peaked at 6.37 feet on Oct. 2, 6.53 feet on Oct. 3, and 6.1 feet on Oct. 4.	Loss of beach sand with the tides and nor'easters
Oct. 30, 2020	Coastal Flooding	No	More than 3 inches of rain, strong onshore winds and full moon tides combine to cause moderate flooding.	Loss of beach sand with the tides and nor'easters

EM = Emergency Declaration (FEMA)

FEMA = Federal Emergency Management Agency

DR = Major Disaster Declaration (FEMA)

N/A = Not applicable

13.6.3 HAZARD RANKING AND VULNERABILITIES

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

13.6.3.1 HAZARD RANKING

The participating jurisdictions have differing degrees of vulnerability to the hazards of concern, so each jurisdiction ranked its own degree of risk to each hazard. The community-specific hazard ranking is based on problems and impacts identified by the risk assessment presented in Volume I. The ranking process involves an assessment of the likelihood of occurrence for each hazard; the potential impacts of the hazard on people, property, and the economy; community capabilities to address the hazard; and changing future climate conditions. Upper reviewed the County hazard ranking and individual results to assess the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township agreed with the preliminary risk rankings as outlined in Table 13-15.

Table 13-15 shows Upper's final hazard rankings for identified hazards of concern. Mitigation action development uses the ranking to target hazards with the highest risk.

Table 13-15. Hazard Ranking

Hazard	Rank
Dam Failure	Medium
Drought	Medium
Earthquake	Low
Extreme Temperature	Medium
Flood	High
Severe Weather	High
Severe Winter Weather	High



Hazard	Rank
Wildfire	High

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

13.6.3.2 CRITICAL FACILITIES

Table 13-16 identifies critical facilities in the community located in the 1 percent and 0.2 percent annual chance floodplains.

Table 13-16. Critical Facilities Flood Vulnerability

Name	Type	Vulnerability	
		1% Annual Chance Event	0.2% Annual Chance Event
Cedar Swamp Creek Bridge, State Highway Rt-50 (Evacuation Route)	Bridge	Y	Y
Tyler Bridge (County Rd 616)	Bridge	Y	Y
Park Commission North	County Building	Y	Y
Upper Township Senior and Nutrition Center	Senior Center	N	N
MARMORA VOLUNTEER FIRE DEPARTMENT	Fire Station	N	N
TUCKAHOE VOLUNTEER FIRE COMPANY	Fire Station	N	N
SEAVILLE FIRE COMPANY	Fire Station	N	N
STRATHMERE VOLUNTEER FIRE COMPANY	Fire Station	Y	Y
All Season's Marina	Marina	Y	Y
Corsons Inlet Bridge, Ocean Drive (County Rd 619)	Bridge	Y	Y
Deauville Inn Dock	Marina	Y	Y
Whale Creek Marina	Marina	Y	Y
Holtz's Boatworks	Marina	Y	Y
BI England Sub-Station	Electric Substation	N	N
TEXACO SERVICE STATION-UPPER TOWNSHIP – FACILITY CLOSED	Superfund Site	N	N
B L ENGLAND GENERATING STATION - FACILITY CLOSED	TRI Site	N	Y
Rt-50 over Tuckahoe River (Evacuation Route)	Bridge	Y	Y
Russ Chattin Bridge, Ocean Drive (County Rd 619)	Bridge	Y	Y
Upper Township Municipal Building	EOC	N	N
Upper Township Rescue Squad	Communications Tower	N	N
ACE Sub-Station	Electric Substation	N	N
ACE Sub-Station	Electric Substation	N	N
UPPER TOWNSHIP RESCUE SQUAD	EMS	N	N
UPPER TOWNSHIP PRIMARY SCHOOL	Shelter	N	N
UPPER TOWNSHIP MIDDLE SCHOOL	Shelter	N	N



13. Township of Upper

SHOEMAKER HOLLY PICNIC AREA	Well	Y	Y
B L ENGLAND GENERATING STATION – FACILITY CLOSED	Superfund Site	N	Y
CAPE MAY CNTY MUA SECURE SLF	Superfund Site	N	N
GSP Bridge Great Egg Harbor Cape May (Evacuation Route)	Bridge	Y	Y
AtlantiCare Urgent Care Marmora	Urgent Care	N	N
Tuckahoe Dam	Dam	Y	Y
Tuckahoe Dam – NJDEP	Dam	Y	Y
Tarkiln Pond Dam	Dam	N	N
Tarkiln Pond Dam	Dam	N	N
New Jersey No Name # 123 Dam	Dam	Y	Y
Corson's Inlet State Park (Boat launch)	Marina	Y	Y
Roosevelt Blvd Bridge (County Rd 623) (Evacuation Route)	Bridge	Y	Y
Rt-49 over Railroad (Cape May Br of Atlantic City Line) (Evacuation Route)	Bridge	N	N
Rt-50 over Railroad (Cape May Br of Atlantic City Line) (Evacuation Route)	Bridge	N	N
Beach Buddies Animal Hospital	Veterinary Hospital	N	N
Cooper University Cape Regional Urgent Care	Urgent Care	N	N
Comcast	Communications Facility	Y	Y
NJAW – Public Water Well	Well	N	N
NJAW – Water Tower	Water Tower	N	Y
NJAW – Water Tower and Public Water Well	Well	Y	Y
No Name	Communications Tower	N	N
No Name	Communications Tower	N	N
No Name	Communications Tower	N	N
No Name	Communications Tower	N	N
Parkway Veterinary Hospital	Veterinary Hospital	N	N
Shore Veterinarians	Veterinary Hospital	N	N
Upper Township Public Works	DPW	N	N
Verizon	Communications Facility	N	N
Verizon	Communications Facility	N	N
Verizon - Vault	Communications Facility	N	N
Marmora Gospel Chapel	Place of Worship	N	N
Church of the Resurrection	Place of Worship	N	N
Tuckahoe Village Train Station	Train Station	N	N
Upper Twp Library	Library	N	N
Upper Township Middle School	Primary Education	N	N
Upper Township Primary	Primary Education	N	N
Upper Township Elementary School	Primary Education	N	N
EDWARD B. GRAY HIGH SCHOOL	Secondary Education	N	N



STRATHMERE FIRE HALL	Polling Site	Y	Y
2ND CAPE MAY BAPTIST HALL	Polling Site	N	N
SEAVILLE FIRE SOCIAL HALL	Polling Site	N	N
COMMUNITY CENTER*	Polling Site	N	N
TRINITY METHODIST CHURCH	Polling Site	N	N
SHAW'S-OSCO - 7624	Pharmacy	N	N
CVS - 2495	Pharmacy	N	N
RITE AID - 857	Pharmacy	N	N
HAPPY HARRY'S - 11070	Pharmacy	N	N

Source: Cape May County 2022, 2024; HIFLD 2024; USACE 2024

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

- Tuckahoe Dam
- New Jersey No Name #123 Dam
- Tarkiln Pond Dam

13.6.4 IDENTIFIED ISSUES

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

- The Township has a number of pre-FIRM properties that remain vulnerable to flooding and were not constructed to flood resistant standards. This includes unmitigated repetitive loss/severe repetitive loss properties spread throughout the Township.
- Due to technical or financial factors, the elevation of each floodprone structure in the Special Flood Hazard Area is not currently feasible. This includes structures at very low ground elevations where future infrastructure provision may not be feasible.
- Bulkheads are hardened shorelines found throughout the Township. Bulkheads throughout the Township have high variability in condition and age. Failing bulkheads threaten properties located on the landward side of the bulkheads and can cause area flooding when breached.
- Roosevelt Boulevard is one of two connections to the mainland from Ocean City. The Boulevard has an AADT of approximately 11,000 vehicles in the off-season and 25,000 vehicles in the on-season and is a designated evacuation route. Roosevelt Boulevard is vulnerable to flooding at two feet above mean higher high water (MHHW).
- Tuckahoe Road is a low-lying road and a state-designated evacuation route for Cape May County. Its AADT is approximately 10,000 vehicles. Tuckahoe Road begins in Marmora and continues inland to Route 50. Though much of the road is at a higher elevation, the stretch between Butter Road and Dennisville-Petersburg Road (CR-610) is vulnerable to flooding and will be inundated with a storm bringing tide levels between 2 and 3 feet above MHHW.



- State Route 50 crosses Cedar Swamp Creek in Petersburg and serves as a state-designated evacuation route that carries approximately 7,000 vehicles each day. The roadway is vulnerable to flooding beginning at water levels that exceed two feet above MHHW.
- Ocean Drive in Upper Township experiences significant erosion in the vicinity of Corson's Inlet. Various attempts have been made to arrest erosion in this area, which threatens to washout CR-619 (which serves as an evacuation route). The roadway requires protection that enhances the surrounding ecosystem and protects the existing infrastructure.
- The Garden State Parkway is the busiest and highest-volume roadway in Cape May County. There are two Parkway exits in Upper Township. Portions of the Parkway in Ocean View are in the Special Flood Hazard Area and are vulnerable to flooding and sea level rise.
- Upper Township features numerous buildings (including its elementary and middle schools) that provide shelter for residents of the Township and adjacent communities during hazard events. However, the facilities require further study for determining their compliance with structural shelter requirements and their ability to withstand storms.
- Stormwater from the vicinity of Seaclyff Ave drains via an outfall to the back bay. The outfall is frequently clogged with sedimentation due to currents and littoral drift. The clogging of the outfall occurs inconsistently and causes stormwater flooding along Seaclyff Ave.
- The garage area where the Strathmere Fire Co stores their equipment and parks the fire apparatus is below the base flood elevation. During Superstorm Sandy, water just covered the garage floor.
- The shoreline south of Bayview Dr Boat ramp has been eroding and destroying the marsh. The marsh area creates a buffer to lessen the impact of wave energy and flooding to Strathmere.
- The UT Elementary School, located at 50 Old Tuckahoe Road, Marmora, is identified as a critical facility and Red Cross shelter. The facility does not have a functioning back-up generator to maintain continuity of operations during an emergency event.
- There is a lack of public awareness and understanding of wildfire risk.

13.7 MITIGATION STRATEGY AND PRIORITIZATION

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

13.7.1 PAST MITIGATION ACTION STATUS

Table 13-17 indicates progress on the Township's mitigation strategy identified in the 2017 HMP. Actions that are still recommended but not completed or that are in progress are carried forward and combined with new actions as part of the mitigation strategy for this plan update. Previous actions that are now ongoing programs and capabilities are indicated as such and are presented in the capability assessment earlier in this annex.

13.7.2 ADDITIONAL MITIGATION EFFORTS

In addition to the mitigation actions completed in Table 13-17, Upper identified the following mitigation efforts completed since the last HMP:



- The Township OEM installed 3-4 additional flood warning gauges to create a better network for notifying the public when a flooding is impending.
- The Township Public Works Department reconstructed Bayview drive and improved drainage.

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

- Drainage Improvements
- Warning Systems
- Public Outreach



Table 13-17. Status of Previous Mitigation Actions

Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020- UpperTwp- 001	Structure Retrofits and Elevation	Flood, Severe Weather	Township of Upper FPA; Private Owners	Problem: The Township has a number of pre-FIRM properties that remain vulnerable to flooding and were not constructed to flood resistant standards. This includes unmitigated repetitive loss/severe repetitive loss properties spread throughout the Township. Solution: The Township proposes the retrofit and elevation of existing structures in the Special Flood Hazard Area.	1. In Progress 2. Private owners need to fund the elevation of their privately owned structures	1. Include 2. The Township will assist property owners in providing resources to retrofit and elevate their homes in the Special Flood Hazard Area. 3. N/A
2020- UpperTwp- 002	Vulnerable Structure Acquisition	Flood, Severe Weather	Township of Upper FPA; NJDEP Blue Acres, Property owners	Problem: Due to technical or financial factors, the elevation of each floodprone structure in the Special Flood Hazard Area is not currently feasible. This includes structures at very low ground elevations where future infrastructure provision may not be feasible. Solution: The Township proposes to acquire certain structures in vulnerable, floodprone areas of the Township.	1. No Progress 2. Funding has not been allocated at this time	1. Include 2. The Township will apply for FEMA funds to acquire certain structures in vulnerable, floodprone areas of the Township. 3. N/A



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020- UpperTwp- 003	Bulkhead Upgrades	Flood, Severe Weather	Township of Upper Administration; Private Owners	Problem: Bulkheads are hardened shorelines found throughout the Township. Bulkheads throughout the Township have high variability in condition and age. Failing bulkheads threaten properties located on the landward side of the bulkheads and can cause area flooding when breached. Solution: Institute upgrades based on the Township's bulkhead inventory and study.	1. In Progress 2. Township code is requiring all privately owned bulkheads to be raised by 01/01/2029	1. Include 2. Township will work to assist property owners of privately owned bulkheads to raise bulkheads by 01/01/2029, as required by Township code. 3. N/A
2020- UpperTwp- 004	CR-619 Protection	Flood, Severe Weather	Cape May County; Township of Upper Administration	Problem: CR-619 is a major roadway and evacuation route connecting Strathmere to Sea Isle City and points west and to Ocean City and points north and west. The existing geo-tube was installed in the late 1990s and is beyond its design life. Solution: The County will install protection to the roadway to prevent flood and erosion damages.	1. Ongoing Capability 2. Under County jurisdiction – improvements and maintenance are ongoing	1. Discontinue 2. N/A 3. Ongoing capability for the Township to assist the County in their efforts.



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-UpperTwp-005	CR-619 Revetment Wall	Flood, Severe Weather	Cape May County; NJDEP; Township of Upper;	Problem: There is a revetment wall located along CR-619 between Upper Township and Ocean City that connects Strathmere to Ocean City and serves as an evacuation route. The road requires additional protection for the continued service of the road. The County has extended the revetment wall and the Township plans to continue work on elevating road for evacuation and constructing living shoreline project. Solution: Undertake improvements to the existing revetment wall to enhance the level of protection and maintain utility of the roadway.	1. Ongoing Capability 2. Under County jurisdiction – improvements and maintenance are ongoing	1. Discontinue 2. N/A 3. Ongoing capability for the Township to assist the County in their efforts.
2020-UpperTwp-006	Roosevelt Boulevard Ramp Elevations	Flood, Severe Weather	Township of Upper Administration; Cape May County; NJ Turnpike Authority	Problem: The intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway is located at a low elevation that is subject to flooding. This intersection has an AADT in excess of 19,000 vehicles and is a major evacuation route for County residents, particularly those in Ocean City. Solution: The roadway, ramps, and overpass bridge require elevation in order to continue providing access during flooding conditions.	1. No Progress 2. Funding has not been allocated at this time	1. Include 2. This action is already addressed in actions 2025-Upper Township5 and 2025-Upper Township9. 3. N/A



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-UpperTwp-007	Roosevelt Boulevard Elevation	Flood, Severe Weather	Cape May County; Township of Upper Administration; NJDEP	Problem: Roosevelt Boulevard is one of two connections to the mainland from Ocean City. The Boulevard has an AADT of approximately 11,000 vehicles in the off-season and 25,000 vehicles in the on-season and is a designated evacuation route. Roosevelt Boulevard is vulnerable to flooding at two feet above mean higher high water (MHHW). Solution: Elevate Roosevelt Boulevard to a higher degree of flood protection from the Garden State Parkway into Ocean City. The final elevation is TBD based on cost and funding availability.	1. No Progress 2. Funding has not been allocated at this time	1. Include 2. The Township will apply for FEMA funding to elevate Roosevelt Boulevard to a higher degree of flood protection from the Garden State Parkway into Ocean City. The final elevation will be determined based on cost and funding availability. 3. N/A
2020-UpperTwp-008	Tuckahoe Road Elevation	Flood, Severe Weather	Cape May County; Township of Upper Engineer; NJDEP	Problem: Tuckahoe Road is a low-lying road and a state-designated evacuation route for Cape May County. Its AADT is approximately 10,000 vehicles. Tuckahoe Road begins in Marmora and continues inland to Route 50. Though much of the road is at a higher elevation, the stretch between Butter Road and Dennisville-Petersburg Road (CR-610) is vulnerable to flooding and will be inundated with a storm bringing tide levels between 2 and 3 feet above MHHW. Solution: Elevate Tuckahoe Road to a higher elevation. A conceptual design for the project has already been completed.	1. In Progress 2. Funding has not been allocated at this time	1. Include 2. The Township will apply for FEMA funding to elevate Tuckahoe Road to a higher elevation. A conceptual design for the project has already been completed. 3. N/A



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-UpperTwp-009	Route 50 Elevation	Flood, Severe Weather	NJDOT, Township of Upper Administration	Problem: State Route 50 crosses Cedar Swamp Creek in Petersburg and serves as a state-designated evacuation route that carries approximately 7,000 vehicles each day. The roadway is vulnerable to flooding beginning at water levels that exceed two feet above MHHW. Solution: The Township proposes to collaborate with NJDOT to increase the elevation of Route 50 and address acute vulnerabilities.	1. No Progress 2. Under NJDOT jurisdiction	1. Include 2. The Township will work with NJDOT as they work to increase the elevation of Route 50 and address acute vulnerabilities. 3. N/A
2020-UpperTwp-010	Ocean Drive Shore Protection	Flood, Severe Weather	County Engineering; NJDEP; Township of Upper Administration	Problem: Ocean Drive in Upper Township experiences significant erosion in the vicinity of Corson's Inlet. Various attempts have been made to arrest erosion in this area, which threatens to washout CR-619 (which serves as an evacuation route). The roadway requires protection that enhances the surrounding ecosystem and protects the existing infrastructure. Solution: Develop a shore protection solution that offers an enhanced level of protection for the roadway and enhances adjacent wetlands habitat.	1. In Progress 2. Living shoreline/resiliency projects within the area are in the early conceptual design and planning phase	1. Include 2. The Township will continue to work on developing a shore protection solution that offers an enhanced level of protection for the roadway and enhances adjacent wetlands habitat. Currently the project is in early conceptual design and planning phase. 3. N/A



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020- UpperTwp- 011	Firewise Program Participation	Wildfire	NJ State Forest Fire Service; Cape May County Fire Chiefs Association; Upper Twp fire districts; Township of Upper Administration	Problem: Upper Township features a dense forest cover that covers much of the Township. Approximately 98% of the Township resides in the wildland-urban interface (WUI), and approximately 250 residents (or 2.1% of the population) reside in an area with high to extreme wildfire fuel hazard. Approximately 97% of the Township's buildings are in the WUI, representing \$6.2 billion in RCV. The Township has identified a need to enhance public outreach relating to wildfire risk in the Township. Solution: The Township seeks a status as a Firewise community through the facilitation of public outreach/awareness projects and fire risk reduction activities.	1. Ongoing Capability 2. Public outreach will be ongoing	1. Discontinue 2. N/A 3. The Township will continue to conduct ongoing public outreach for fire safety.



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020- UpperTwp- 012	Enhanced Wildfire Protection	Wildfire	NJ State Forest Fire Service; Cape May County Fire Chiefs Association; Upper Twp fire districts; Township of Upper Administration	Problem: Upper Township features a dense forest cover that covers much of the Township. Approximately 98% of the Township resides in the wildland-urban interface (WUI), and approximately 250 residents (or 2.1% of the population) reside in an area with high to extreme wildfire fuel hazard. Approximately 97% of the Township's buildings are in the WUI, representing \$6.2 billion in RCV. The Township has identified a need to enhance mitigation measures to reduce wildfire risk. Solution: Participate in State/County actions and trainings to enhance public outreach and knowledge of wildfire and potential mitigation measures. This will entail the participation of Township officials in trainings and seminars and the enhancement of wildfire prevention and response capabilities.	1. Ongoing Capability 2. Public outreach will be ongoing	1. Discontinue 2. N/A 3. The Township will continue to conduct ongoing public outreach for fire safety.



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020- UpperTwp- 013	Garden State Parkway Elevation	Flood, Severe Weather	Garden State Parkway, Township of Upper Administration	Problem: The Garden State Parkway is the busiest and highest-volume roadway in Cape May County. There are two Parkway exits in Upper Township. Portions of the Parkway in Ocean View are in the Special Flood Hazard Area and are vulnerable to flooding and sea level rise. Solution: The Garden State Parkway should be elevated 1' above the base flood elevation. The Parkway's utility as an evacuation route should be supported and enhanced by ensuring a higher level of protection.	1. No Progress 2. Under NJTA jurisdiction	1. Include 2. The Township will work with NJTA as they elevate Garden State Parkway to 1' above BFE. The Parkway's utility as an evacuation route should be supported and enhanced by ensuring a higher level of protection. 3. N/A
2020- UpperTwp- 014	Storm Shelter Retrofit	All natural hazards	Township OEM	Problem: Upper Township features numerous buildings (including its elementary and middle schools) that provide shelter for residents of the Township and adjacent communities during hazard events. However, the facilities require further study for determining their compliance with structural shelter requirements and their ability to withstand storms. Solution: Facilities that are used for emergency storm shelters should have a design analysis to determine conformance with ASCE7, FEMA 55 & 361 and ICC500 – 2008. And then retrofitted for conformance	1. No Progress 2. Funding has not been allocated at this time	1. Include 2. The Township will apply for FEMA funding to conduct design analysis on emergency storm shelters to determine conformance with ASCE7, FEMA 55 & 361 and ICC500 – 2008. And then retrofitted for conformance. 3. N/A



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020- UpperTwp- 015	Seacliff Ave Outfall	Flood, Severe Weather	Township Engineer	Problem: Stormwater from the vicinity of Seacliff Ave drains via an outfall to the back bay. The outfall is frequently clogged with sedimentation due to currents and littoral drift. The clogging of the outfall occurs inconsistently and causes stormwater flooding along Seacliff Ave. Solution: To permanently mitigate the clogging issue, the Township proposes to extend the outfall pipe 20 to 30 feet to go beyond the current. Neighbor is looking to do dredging.	1. No progress 2. Funding has not been allocated at this time	1. Include 2. The Township will apply for FEMA funding to permanently mitigate the clogging issue. The Township proposes to extend the outfall pipe 20 to 30 feet to go beyond the current. Neighbor is looking to do dredging. 3. N/A
2020- UpperTwp- 016	Flood Warning System	Flood, Severe Weather	Township OEM	Problem: Upper Township does not have a 24-hr local police to help notify when rising flood waters occur. In 2020 the Township installed a flood warning device at one location but needs to be expanded to address other localized flooding areas. Solution: Install 3-4 additional flood warning gauges to create a better network for notifying the public when flooding is impending.	1. Complete 2. Work has been completed	1. Discontinue 2. N/A 3. Action completed



Project Number	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Action Review 1. Status (In Progress, Ongoing Capability, No Progress, Complete) 2. Provide a narrative to describe progress or obstacles that have prevented implementation	Next Steps 1. Project to be included in the 2024 HMP or Discontinue 2. If including action in the 2024 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
2020-UpperTwp-017	Dry-Floodproof Strathmere Fire Hall	Flood, Severe Weather	Township OEM, Fire Company	Problem: The garage area where the Strathmere Fire Co stores their equipment and parks the fire apparatus is below the base flood elevation. During Superstorm Sandy, water just covered the garage floor. Solution: Dry-floodproof the garage doors and exterior walls.	1. No progress 2. Funding has not been allocated at this time	1. Include 2. The Township will apply for FEMA funding to dry- floodproof the garage doors and exterior walls of the Strathmere Fire Co. 3. N/A
2020-UpperTwp-018	Living Shoreline/Marsh Protection Zone	Flood, Severe Weather, Coastal Erosion	Township Administration	Problem: The shoreline south of Bayview Dr Boat ramp has been eroding and destroying the marsh. The marsh area creates a buffer to lessen the impact of wave energy and flooding to Strathmere. Solution: Construct a living shoreline along the area.	1. In Progress 2. Living Shoreline design has been completed and applications submitted to NJDEP and ACOE. Once permits are received, project will move into construction phase	1. Include 2. The Township will work to construct the living shoreline along Bayview Dr. Boat Ramp. Currently, the living shoreline design has been completed and applications submitted to NJDEP and ACOE. Once permits are received, project will move into construction phase. 3. N/A
2020-UpperTwp-019	Bayview Drive Reconstruction	Flood , Severe Weather	Township DPW	Problem: Bayview Drive is the street closest to the Bay in Strathmere. The road requires reconstruction, which is currently underway. Solution: The Township proposes to reconstruct the Drive and improve drainage.	1. Complete 2. Reconstruction work has been completed	1. Discontinue 2. N/A 3. Action completed



13.7.3 PROPOSED HAZARD MITIGATION ACTIONS FOR THE HMP UPDATE

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

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

The action worksheets included at the end of this annex list the mitigation actions that Upper would like to pursue in the future to reduce the effects of hazards. The actions are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in Township priorities.

Table 13-18 indicates the range of proposed mitigation action categories. The four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Volume I identifies 14 evaluation criteria for prioritizing the mitigation actions. To assist with rating each mitigation action as high, medium, or low priority, a numeric rank is assigned (-1, 0, or 1) for each of the evaluation criteria. Table 13-19 provides a summary of the prioritization of all proposed mitigation actions for the HMP update.



Table 13-18. Analysis of Mitigation Actions by Hazard and Category

Hazard	Actions That Address the Hazard, by Action Category									
	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure		X			X					X
Drought		X			X					X
Earthquake		X			X					X
Extreme Temperature		X			X					X
Flood		X	X		X	X	X	X	X	X
Severe Weather		X	X		X	X	X	X	X	X
Severe Winter Weather		X			X					X
Wildfire		X			X					X

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

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

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

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

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

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

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

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

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

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



Table 13-19. Summary of Prioritization of Actions

Project Number	Project Name	Scores for Evaluation Criteria															High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives	Total	
2025-Upper Township-01	RL and SRL Retrofit Resources	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2025-Upper Township-02	SFHA Property Acquisition	1	1	1	1	0	0	1	1	1	1	1	1	1	1	12	High
2025-Upper Township-03	Bulkhead Restoration	1	1	1	1	0	1	0	1	1	1	1	1	1	1	12	High
2025-Upper Township-04	Roosevelt Boulevard Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2025-Upper Township-05	Tuckahoe Road Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2025-Upper Township-06	State Route 50 Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2025-Upper Township-07	Ocean Drive Shore Protection	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2025-Upper Township-08	Garden State Parkway Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2025-Upper Township-09	Emergency Storm Shelter Retrofitting	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
2025-Upper Township-10	Seacliff Ave. Outfall Restoration	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2025-Upper Township-11	Dry-Floodproof Strathmere Fire Company Garage	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
2025-Upper Township-12	Bayview Drive Living Shoreline	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2025-Upper Township-13	UT Elementary School Emergency Generator	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High



Project Number	Project Name	Scores for Evaluation Criteria														Total	High / Medium / Low
		Life Safety	Property Protection	Cost-Effectiveness	Political	Legal	Fiscal	Environmental	Social Vulnerability	Administrative	Hazards of Concern	Climate Change	Timeline	Community Lifelines	Other Local Objectives		
2025-Upper Township-14	Wildfire Public Outreach	1	1	1	1	1	1	1	1	1	1	1	1	0	1	13	High

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



Action 2025-Upper Township.01 RL and SRL Retrofit Resources

Lead Agency:	Floodplain Administration	
Supporting Agencies:	Private owners	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	The Township has a number of pre-FIRM properties that remain vulnerable to flooding and were not constructed to flood resistant standards. This includes unmitigated repetitive loss/severe repetitive loss properties spread throughout the Township.	
Description of the Solution:	The Township will assist property owners in providing resources to retrofit and elevate their homes in the Special Flood Hazard Area.	
Estimated Cost:	Low (< \$10,000) for resources, Medium for retrofit activities	
Potential Funding Sources:	FMA, HMGP	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Elevating homes in the floodplain immediately lessens the risk to life and property. Socially vulnerable populations may be able to have houses elevated when it would otherwise be unaffordable.	
Impact on Future Development:	Increased outreach to homeowners within a flood prone area will limit construction in areas that are prone to hazard events. Homes may be elevated, which will lessen impacts from flooding and prevent future development on those sites.	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities:	N/A	
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Elevating structures will reduce the recovery costs as a result of these events.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Property Protection, Public Information	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove homes	Loss of family homes and no homeowner buy-in
	Rely on federal guidance	Not always available to homeowners. Homeowners do not always know where to access. Not local community specific information.



Action 2025-Upper Township-02 SFHA Property Acquisition

Lead Agency:	Floodplain Administrator	
Supporting Agencies:	NJDEP Blue Acres, Property owners	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	Due to technical or financial factors, the elevation of each floodprone structure in the Special Flood Hazard Area is not currently feasible. This includes structures at very low ground elevations where future infrastructure provision may not be feasible.	
Description of the Solution:	The Township will apply for FEMA funds to acquire certain structures in vulnerable, floodprone areas of the Township.	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	FMA, HMGP	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Removing homes from the floodplain immediately removes the risk to life and property. Socially vulnerable populations may be able to have houses acquired when it would otherwise be unaffordable.	
Impact on Future Development:	Homes will be acquired, which will remove those structures from the floodplain and prevent future development on those sites.	
Impact on Critical Facilities/Lifelines:	Removing structures from the floodplain decreases the demand on utilities and emergency services including health and medical, law enforcement, and search and rescue.	
Impact on Capabilities:	Removing the risk from the immediate floodplain via acquisition of properties will free up resources for search and rescue and other emergency operations as needed.	
Climate Change Considerations:	Climate change is likely to increase the frequency and severity of severe rainfall, flash flooding, riverine flooding, and coastal flooding from sea level rise and storm surge events. Removing structures from the floodplain will reduce the response and recovery costs as a result of these events and decrease the loss of human life as a result of these events.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Property Protection	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Elevate floodprone structures	Not feasible.
	Provide sandbags for flood events	Not a long term solution, must be manually deployed.



Action 2025-Upper Township-03 Bulkhead Restoration

Lead Agency:	Township Administration	
Supporting Agencies:	Private owners	
Hazards of Concern:	Flood, Severe Weather, Coastal Erosion	
Description of the Problem:	Bulkheads are hardened shorelines found throughout the Township. Bulkheads throughout the Township have high variability in condition and age. Failing bulkheads threaten properties located on the landward side of the bulkheads and can cause area flooding when breached.	
Description of the Solution:	Township will work to assist property owners of privately owned bulkheads to raise bulkheads by 01/01/2029, as required by Township code. The Strathmere section of Upper Township will be emphasized.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	HMGP, FMA, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Less damage to property and decreased loss of life will occur in hazard prone areas, and lead to reduced recovery costs and flood insurance claims.	
Impact on Future Development:	If sea level rise is prevented from infiltrating land, a community may remain in place for a longer period of time until migration is required.	
Impact on Critical Facilities/Lifelines:	Ensures transportation routes remain open and accessible to the public for daily use and evacuation needs.	
Impact on Capabilities:	Increases community resiliency to flooding events in vulnerable areas that would normally be at high risk of property damage or loss of life and reduces recovery time.	
Climate Change Considerations:	Ensures raised bulkhead can withstand water capacity at a higher elevation than anticipated as sea levels rise and extreme rain events increase in frequency.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Property Protection	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove bulkheads	No homeowner buy-in and the flood and coastal erosion will still occur.
	Install levee system around bulkheads	Not feasible and not enough space



Action 2025-Upper Township-04 Roosevelt Boulevard Elevation

Lead Agency:	Township Administration	
Supporting Agencies:	Cape May County; NJ Turnpike Authority	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	Roosevelt Boulevard is one of two connections to the mainland from Ocean City. The Boulevard has an AADT of approximately 11,000 vehicles in the off-season and 25,000 vehicles in the on-season and is a designated evacuation route. Roosevelt Boulevard is vulnerable to flooding at two feet above mean higher high water (MHHW).	
Description of the Solution:	The Township will apply for FEMA funding to elevate Roosevelt Boulevard to a higher degree of flood protection from the Garden State Parkway into Ocean City. The final elevation will be determined based on cost and funding availability.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, FMA	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Elevating the road will provide a safe path of ingress and egress for residents of flood prone areas. Emergency vehicles will have the ability to assist residents during a flood event.	
Impact on Future Development:	Ensuring safe travel encourages businesses and residents to remain in or move to the area. Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Impact on Critical Facilities/Lifelines:	Roadway will be less likely to incur damage from floodwaters and be able to remain open for travel.	
Impact on Capabilities:	Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Climate Change Considerations:	Consideration should be taken for more frequent flood events as a result of increases in rainfall frequency and severity.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove roadway	Not an option. Loss of a critical transportation route for the community
	Relocate roadway	No available space to relocate and is costly.



Action 2025-Upper Township-05 Tuckahoe Road Elevation

Lead Agency:	Township Administration	
Supporting Agencies:	Cape May County; NJ Turnpike Authority	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	Tuckahoe Road is a low-lying road and a state-designated evacuation route for Cape May County. Its AADT is approximately 10,000 vehicles. Tuckahoe Road begins in Marmora and continues inland to Route 50. Though much of the road is at a higher elevation, the stretch between Butter Road and Dennisville-Petersburg Road (CR-610) is vulnerable to flooding and will be inundated with a storm bringing tide levels between 2 and 3 feet above MHHW.	
Description of the Solution:	The Township will apply for FEMA funding to elevate Tuckahoe Road to a higher elevation. A conceptual design for the project has already been completed.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, FMA	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Elevating the road will provide a safe path of ingress and egress for residents of flood prone areas. Emergency vehicles will have the ability to assist residents during a flood event.	
Impact on Future Development:	Ensuring safe travel encourages businesses and residents to remain in or move to the area. Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Impact on Critical Facilities/Lifelines:	Roadway will be less likely to incur damage from floodwaters and be able to remain open for travel.	
Impact on Capabilities:	Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Climate Change Considerations:	Consideration should be taken for more frequent flood events as a result of increases in rainfall frequency and severity.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove roadway	Not an option. Loss of a critical transportation route for the community
	Relocate roadway	No available space to relocate and is costly.



Action 2025-Upper Township-06 State Route 50 Elevation

Lead Agency:	NJDOT	
Supporting Agencies:	Township of Upper Administration	
Hazards of Concern:	Flood, Severe Weather, Coastal Erosion	
Description of the Problem:	State Route 50 crosses Cedar Swamp Creek in Petersburg and serves as a state-designated evacuation route that carries approximately 7,000 vehicles each day. The roadway is vulnerable to flooding beginning at water levels that exceed two feet above MHHW.	
Description of the Solution:	The Township will work with NJDOT as they work to increase the elevation of Route 50 and address acute vulnerabilities.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, FMA, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Elevating the road will provide a safe path of ingress and egress for residents of flood prone areas. Emergency vehicles will have the ability to assist residents during a flood event.	
Impact on Future Development:	Ensuring safe travel encourages businesses and residents to remain in or move to the area. Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Impact on Critical Facilities/Lifelines:	Roadway will be less likely to incur damage from floodwaters and be able to remain open for travel.	
Impact on Capabilities:	Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Climate Change Considerations:	Consideration should be taken for more frequent flood events as a result of increases in rainfall frequency and severity.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove roadway	Not an option. Loss of a critical transportation route for the community
	Relocate roadway	No available space to relocate and is costly.



Action 2025-Upper Township-07 Ocean Drive Shore Protection

Lead Agency:	Township Administration	
Supporting Agencies:	County Engineering, NJDEP	
Hazards of Concern:	Flood, Severe Weather, Coastal Erosion	
Description of the Problem:	Ocean Drive in Upper Township experiences significant erosion in the vicinity of Corson's Inlet. Various attempts have been made to arrest erosion in this area, which threatens to washout CR-619 (which serves as an evacuation route). The roadway requires protection that enhances the surrounding ecosystem and protects the existing infrastructure.	
Description of the Solution:	The Township will continue to work on developing a shore protection solution that offers an enhanced level of protection for the roadway and enhances adjacent wetlands habitat. Currently the project is in early conceptual design and planning phase.	
Estimated Cost:	Low (< \$10,000)	
Potential Funding Sources:	HMGP, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations evacuating from hazard events by utilizing the evacuation route will be protected.	
Impact on Future Development:	N/A	
Impact on Critical Facilities/Lifelines:	Ocean Drive is a critical asset for the Town and will be protected to ensure continuity of operations for EMS and residents during hazard events.	
Impact on Capabilities:	This action will increase the safety for transportation routes which are key for EMS response and residential access.	
Climate Change Considerations:	As climate changes, natural hazard events such as flooding and severe weather will continue to increase in severity and frequency.	
Mitigation Category	Natural Systems Protection, Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects, Natural Resource Protection	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove roadway	Not an option. Loss of a critical transportation route for the community
	Relocate roadway	No available space to relocate and is costly.



Action 2025-Upper Township-08 Garden State Parkway Elevation

Lead Agency:	NJTA	
Supporting Agencies:	Garden State Parkway, Township Administration	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	The Garden State Parkway is the busiest and highest-volume roadway in Cape May County. There are two Parkway exits in Upper Township. Portions of the Parkway in Ocean View are in the Special Flood Hazard Area and are vulnerable to flooding and sea level rise.	
Description of the Solution:	The Township will work with NJTA as they elevate Garden State Parkway to 1' above BFE. The Parkway's utility as an evacuation route should be supported and enhanced by ensuring a higher level of protection.	
Estimated Cost:	High (> \$100,000)	
Potential Funding Sources:	HMGP, FMA, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Elevating the Parkway will provide a safe path of ingress and egress for residents of flood prone areas. Emergency vehicles will have the ability to assist residents during a flood event.	
Impact on Future Development:	Ensuring safe travel encourages businesses and residents to remain in or move to the area. Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Impact on Critical Facilities/Lifelines:	Parkway will be less likely to incur damage from floodwaters and be able to remain open for travel.	
Impact on Capabilities:	Economic resiliency is increased by reducing the time needed for businesses to access facilities to reopen following a flood.	
Climate Change Considerations:	Consideration should be taken for more frequent flood events as a result of increases in rainfall frequency and severity.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove Parkway	Not an option. Loss of a critical transportation route for the community
	Relocate Parkway	No available space to relocate and is costly.



Action 2025-Upper Township-09 Emergency Storm Shelter Retrofitting

Lead Agency:	Township OEM	
Supporting Agencies:	-	
Hazards of Concern:	Dam Failure, Drought, Earthquake, Extreme Temperature, Flood, Severe Weather, Severe Winter Weather, Wildfire	
Description of the Problem:	Upper Township features numerous buildings (including its elementary and middle schools) that provide shelter for residents of the Township and adjacent communities during hazard events. However, the facilities require further study for determining their compliance with structural shelter requirements and their ability to withstand storms.	
Description of the Solution:	The Township will apply for FEMA funding to conduct design analysis on emergency storm shelters to determine conformance with ASCE7, FEMA 55 & 361 and ICC500 – 2008. And then retrofitted for conformance and increase level of protection.	
Estimated Cost:	Medium	
Potential Funding Sources:	Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations, such as the elderly, non-English speaking, and disabled seek safe sheltering and EMS assistance during hazard events. This would ensure that the emergency shelters within the Town are compliant with standards that ensure residents are safe during hazard events.	
Impact on Future Development:	N/A	
Impact on Critical Facilities/Lifelines:	Emergency shelters are a critical facility for the Town, and are utilized during hazard events to keep residents safe. This action would ensure the continuity of operation for a critical facility.	
Impact on Capabilities:	This would increase the capabilities for EMS and emergency assistance during hazard events by providing safe shelter during these events.	
Climate Change Considerations:	As climate changes, natural hazard events such as flooding or severe weather will increase in severity and frequency.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Preventative Measures, Emergency Services	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove shelters	Not an option. Loss of critical facility for community.
	Add additional shelters	Costly, need assessment to determine what is needed for existing shelters.



Action 2025-Upper Township-10 Seaclyff Ave. Outfall Restoration

Lead Agency:	Township Engineer	
Supporting Agencies:	Township Administration	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	Stormwater from the vicinity of Seaclyff Ave drains via an outfall to the back bay. The outfall is frequently clogged with sedimentation due to currents and littoral drift. The clogging of the outfall occurs inconsistently and causes stormwater flooding along Seaclyff Ave.	
Description of the Solution:	The Township will apply for FEMA funding to permanently mitigate the clogging issue. The Township proposes to extend the outfall pipe 20 to 30 feet to go beyond the current. Neighbor is looking to do dredging.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations residing or using Seaclyff Ave will be protected from severe stormwater flooding.	
Impact on Future Development:	Future development nearby that will utilize Seaclyff Ave will be protected from future stormwater runoff impacts.	
Impact on Critical Facilities/Lifelines:	Outfalls are a critical asset for the Town and this action restores the outfall's function to maintain operations during increase flooding/severe weather events which may result in high stormwater flood loads.	
Impact on Capabilities:	This would increase the Town's capabilities to handle large amount of stormwater runoff during severe weather and flood events.	
Climate Change Considerations:	As climate changes, natural hazard events such as flooding and severe weather will increase in severity and frequency.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects, Preventative Measures	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove the outfall	Flooding is still an issue in the area.
	Add new outfall	Existing outfall still causes flooding issues due to clogging.



Action 2025-Upper Township-11 Dry-Floodproof Strathmere Fire Company Garage

Lead Agency:	Township OEM	
Supporting Agencies:	Fire Company	
Hazards of Concern:	Flood, Severe Weather	
Description of the Problem:	The garage area where the Strathmere Fire Co stores their equipment and parks the fire apparatus is below the base flood elevation. During Superstorm Sandy, water just covered the garage floor.	
Description of the Solution:	The Township will apply for FEMA funding to dry- floodproof the garage doors and exterior walls of the Strathmere Fire Co.	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, USDA Community Facilities Grant Program, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for fire department and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	The risk of significant damage occurring to the structure will be reduced, which will allow operations to adapt and resume in a more efficient manner.	
Impact on Critical Facilities/Lifelines:	Ensuring the protection of fire department and personnel will increase the likelihood of emergency services remaining intact. With a protected critical facility, communications are more likely to remain intact between responding agencies.	
Impact on Capabilities:	Ensuring continuity of operations allows for a more rapid return to normalcy after a hazard event.	
Climate Change Considerations:	Consideration should be taken for increases in flooding frequency and severity.	
Mitigation Category	Structure and Infrastructure Project	
CRS Category	Structural Flood Control Projects	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove the Fire Company	Loss of critical service for community.
	Relocate the Fire Company	Temporary loss of critical service for community and there is not available space to relocate elsewhere in Township.



Action 2025-Upper Township-12 Bayview Drive Living Shoreline

Lead Agency:	Township Administration	
Supporting Agencies:	Township Engineer	
Hazards of Concern:	Flood, Severe Weather, Coastal Erosion, Landslide	
Description of the Problem:	The shoreline south of Bayview Dr Boat ramp has been eroding and destroying the marsh. The marsh area creates a buffer to lessen the impact of wave energy and flooding to Strathmere.	
Description of the Solution:	The Township will work to construct the living shoreline along Bayview Dr. Boat Ramp. Currently, the living shoreline design has been completed and applications submitted to NJDEP and ACOE. Once permits are received, project will move into construction phase	
Estimated Cost:	Medium	
Potential Funding Sources:	HMGP, NOAA Coastal Resilience Grants, Annual Budget	
Implementation Timeline:	Medium (<5 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Coastal properties that may otherwise have been at risk of damage or collapse due to storm surge will be able to withstand stronger storms.	
Impact on Future Development:	Preserving a healthy coastal environment can drive tourism and new residents to the area.	
Impact on Critical Facilities/Lifelines:	Conserving resources that may otherwise need to respond to coastal properties will free up personnel to conduct emergency operations further inland.	
Impact on Capabilities:	The need for beach renourishment following a coastal event will be decreased due to the protection the living shoreline provides.	
Climate Change Considerations:	Coastal events are likely to increase in frequency and severity, including the storm surge that is driven on shore by tropical storms. This may damage the shoreline and the properties which it is meant to protect.	
Mitigation Category	Natural Systems Protection	
CRS Category	Natural Resource Protection	
Priority	High	
Alternatives	Action	Evaluation
	No Action	Problem persists
	Remove marsh	Problem is exacerbated and residents are extremely vulnerable to coastal erosion and flooding
	Install levee system around marsh	Costly and not the correct environmental solution for the area. May have negative consequences to marsh



Action 2025-Upper Township-13 UT Elementary School Emergency Generator

Lead Agency:	UT Elementary School	
Supporting Agencies:	Township Engineer	
Hazards of Concern:	Extreme Temperature, Severe Weather, Severe Winter Weather	
Description of the Problem:	The UT Elementary School, located at 50 Old Tuckahoe Road, Marmora, is identified as a critical facility and Red Cross shelter. The facility does not have a functioning back-up generator to maintain continuity of operations during an emergency event.	
Description of the Solution:	The UT Elementary School will work alongside the jurisdictional engineer to identify the necessary capacity for an emergency generator for the facility. Once identified, Public Works will have the emergency generator installed and will be responsible for maintaining the emergency generator.	
Estimated Cost:	Medium	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Short (1-2 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Protection of critical facilities provides an opportunity for first responders, utility workers, and emergency managers to stage and deploy resources to vulnerable and hazard prone areas.	
Impact on Future Development:	This action results in protection of a critical facility that could support future development.	
Impact on Critical Facilities/Lifelines:	This action protects public health and safety and ensures continued operation of a critical facility and its essential functions during a power outage.	
Impact on Capabilities:	This action ensures continuity of operations to maintain capabilities.	
Climate Change Considerations:	Climate change is likely to increase severe weather events such as flooding, wind, and extreme temperatures that result in power failures. This action accounts for a likely increase in power failure events.	
Mitigation Category	Structure and Infrastructure Projects	
CRS Category	Emergency Services	
Priority	High	
Alternatives	Action	Evaluation
	No Action	-
	Microgrid	Costly and difficult to implement.
	Solar panels and battery backup	Solar power is unlikely to be able to provide battery power for extended power failure events.



Action 2025-Upper Township-14 Wildfire Public Outreach

Lead Agency:	Township Fire Department	
Supporting Agencies:	Public Works	
Hazards of Concern:	Extreme Temperature, Severe Weather, Severe Winter Weather	
Description of the Problem:	There is a lack of public awareness and understanding of wildfire risk.	
Description of the Solution:	The Township Fire Department will work alongside the Public Works Department to implement public outreach through website enhancements and educational flyers located at the public library and Town Hall.	
Estimated Cost:	Low	
Potential Funding Sources:	Municipal budget	
Implementation Timeline:	Short (1-2 years)	
Goals Met:	1, 2, 3, 5, 6, 7	
Benefits:	High (> \$100,000)	
Impact on Socially Vulnerable Populations:	Socially vulnerable populations, such as the elderly, will need more time to evacuate and prepare for wildfire hazards. Providing information will help to educate and prepare socially vulnerable populations before a wildfire hazard occurs.	
Impact on Future Development:	N/A	
Impact on Critical Facilities/Lifelines:	N/A	
Impact on Capabilities:	This action will enhance the Townships capabilities to respond and evacuate residents from wildfire risks.	
Climate Change Considerations:	Climate change is likely to increase wildfire events and other cascading hazards. This action will educate and spread awareness for wildfire risk and safety procedures to mitigate increase wildfire risk.	
Mitigation Category	Education and Awareness	
CRS Category	Public Information	
Priority	High	
Alternatives	Action	Evaluation
	No Action	-
	Rely on state information	Not always locally specific and residents are unaware of where to find this information.
	Rely on federal information	Not always locally specific and residents are unaware of where to find this information.