

Cape May County Hazard Mitigation Plan Update



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Volume II



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SECTION 8. PLANNING PARTNERSHIP

2021 HMP Changes

- The 2021 HMP update maintained the two-volume approach with each jurisdiction having an individual annex (Section 9). Enhancements to the annex subsections is described below and in further detail in this section.
 - Reorganization of information
 - Expanded capability assessment to include integration in the tables and a subsection on adaptive capacity
 - A streamlined presentation of the hazard ranking
 - The mitigation of repetitive and severe repetitive flood loss properties is listed
 - Problem statement is summarized in the updated mitigation strategy table
 - A subsection dedicated to staff and local stakeholder involvement in annex development

This section provides a description of the Cape May County's HMP update planning partnership, their responsibilities throughout the planning process, and the jurisdictional annexes developed as a result of their plan update efforts.

8.1 BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

“Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan” [Section 201.6a(4)]

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

For the Cape May County HMP update, a Planning Partnership was formed to leverage resources and to meet requirements for the federal Disaster Mitigation Action of 2000 (DMA) for as many eligible governments as possible. Members of the Planning Partnership consisted of representatives from each jurisdiction. The DMA defines a local government as follows:

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

Each participating planning partner has prepared a jurisdictional annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume.

8.2 INITIAL SOLICITATION AND LETTERS OF INTENT

Cape May County solicited the participation of all municipalities in the County at the commencement of this project. All municipalities interested signed a *Letter of Intent to Participate* (LOIP) committing their



participation and resources to the development of the Cape May County HMP update (Appendix B). Cape May County and all municipalities in the County participated in the update process and have met the minimum requirements of participation as established by the County and Steering Committee.

8.3 PLANNING PARTNER EXPECTATIONS

The Planning Partners agreed to the following planning partner expectations, which were outlined in the letter sent by Cape May County on June 24, 2020 and confirmed at the kick-off meeting held on July 15, 2020 (see Appendix C [Meeting Documentation] for details):

- Provide representation at regular planning group meetings and workshops.
- Be responsible for providing data and information as requested.
- Review and comment on data and information compiled by the contract consultant relevant to their jurisdiction.
- Be responsible for completing plan documents specific to your municipality, using provided templates with guidance and assistance by the contract consultant.
- Assist with the identification of stakeholders within your community that should be informed and potentially involved with the planning process.
- Facilitate public outreach efforts with citizens and local stakeholders within your community using materials provided by the contract consultant.
- Assist with the identification of strengths, weaknesses, opportunities and obstacles to implementing natural hazard mitigation within your community.
- Assist with the identification of past, ongoing and appropriate future mitigation strategies and activities within your municipality.
- Review and comment on plan documents, specifically the draft and final plans prior to submission to NJOEM and FEMA.

Steering Committee (SC) is comprised of County and municipal representatives that guide and lead the HMP update process on behalf of the Planning Partnership.

Planning Committee (PC) is comprised of representatives from each participating jurisdiction (County and municipalities).

Planning Partnership = SC + PC

As described in Section 7 (Plan Maintenance), the Planning Partnership is intended to remain active beyond the regulatory update to support plan maintenance. Regarding the composition of the Steering and Planning Committees, it is recognized that individual commitments change over time, and it will be the responsibility of each jurisdiction and its representatives to inform the HMP Coordinator of any changes in representation.

8.4 JURISDICTIONAL ANNEX PREPARATION PROCESS

As in the 2016 HMP, the jurisdictional annexes were maintained and updated for the 2021 HMP. The jurisdictional annexes continue to provide a unique, stand-alone guide to mitigation planning for each jurisdiction. The Cape May County HMP Update is organized so that there is an annex for Cape May County and for every jurisdiction within the county's borders. Section 9 (Jurisdictional Annexes) includes an annex for every jurisdiction in Cape May County.

Data Collection

Each jurisdiction was paired with a contract consultant mitigation planner to work with the primary point of contact (POC), alternate POC, NFIP Floodplain Administrator and the mitigation team to update their annexes. Each jurisdiction was asked to participate in a municipal kick-off meeting, held on July 15, 2020 to review participant expectations and the updated information needed to support the annex update. It was made clear that the annexes are sections of the plan that can be enhanced if more information is available to further customize



any and all aspects of mitigation planning. A concerted effort was made to have all plan participants document areas of flooding outside of the floodplain.

Hazard Ranking Exercise

The presentation of the risk assessment and hazard ranking for each jurisdiction was conducted on September 23, 2020. At this meeting, the consultant presented the overall risk assessment for the hazards of concern and distributed jurisdiction-specific handouts with risk assessment results relevant to each plan participant. In addition, each planning partner was asked to review the ranked hazards specific for its jurisdiction. Refer to Section 5.3 (Hazard Ranking) for the methodology of the hazard ranking process. The calculated ranking was presented to each jurisdiction and they were asked to review the ranking and revise based on history of events, probability of occurrence, and the potential impact on people, property, and the economy. In addition, each jurisdiction was asked to rank their adaptive capacity for each hazard. Refer to Appendix B (Participation Matrix) for the input submitted by each municipality. The objectives of this exercise were to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes and to help prioritize types of mitigation actions that should be considered. Hazards that were ranked as “high” for each jurisdiction as a result of this exercise were considered to be priorities for identifying appropriate mitigation actions, although jurisdictions also identified actions to mitigate “medium” or “low” ranked hazards as appropriate.

Strengths Weaknesses Obstacles and Opportunities (SWOO) Exercise

After the draft risk assessment results were presented and hazard ranking exercise at the second Steering Committee Meeting on August 12, 2020, attendees participated in a facilitated SWOO session to identify strengths, weakness or challenges, obstacles and opportunities in hazard mitigation for the County’s high-ranked hazards. All SWOO results were compiled and provided as a resource to plan participants at the Mitigation Strategy Workshop in October 2020. Refer to Appendix B (Participation Matrix) which provides the information captured by meeting participants during the SWOO session.

Mitigation Strategy Workshop

A mitigation strategy workshop was conducted by the contracted planning consultant on October 28, 2020, for all participating jurisdictions to support the development of the updated mitigation strategy. Due to restrictions in place due to the coronavirus pandemic, this workshop was held virtually. To assist with the identification of implementable and action-oriented mitigation actions, a three-step process was followed for the 2021 HMP update: 1) Assemble a ‘mitigation toolbox’; 2) Identify problem statements through ‘mitigation brainstorming’ and 3) Update the mitigation action plan. The purpose of this workshop was to guide the planning partnership in completing this portion of the planning process and discuss how projects that are well developed and documented are more quickly identifiable for selection when grants become available. The nearly 100 percent participation of the planning partners reflects the excellent outreach and dedication of the planning team.

At the workshop, the Planning Partnership focused on developing problem statements based on the impacts of hazards in the County and their communities. The results of the updated risk assessment, challenges and opportunities identified during the capability assessment update and SWOO sessions, and information gathered from the citizen survey were used to inform problem statement development. At the workshop, the Planning Partnership heard from the County, FEMA, NJOEM, and the consultant on how to develop a diverse mitigation strategy and action worksheets.

As a result, problem statement worksheets were developed to detail the problems/challenges/gaps/identified vulnerabilities the jurisdiction faces, then mitigation alternatives evaluated to best reduce future risk and address the identified problem. These problem statements were intended to provide a detailed description of the problem



area, including impacts to the jurisdiction, past damages, and loss of service. These problem statements helped form a bridge between the hazard risk assessment, which quantifies impacts to each community, with the development of achievable mitigation strategies. Mitigation development worksheets were filled out by each municipality to identify additional problem statements and draft action worksheets were developed.

Municipal Support Meetings

In addition to the municipal kick-off meeting, municipal support meetings were held throughout the planning process. At these support meetings, the consultant worked one-on-one with the planning partners to complete their jurisdictional annexes. Each section of the annex was discussed to ensure accuracy and completeness. This included, but not limited to, the following:

- Reviewing the calculated hazard ranking for the jurisdiction and provide input to adjust the ranking as necessary.
- Updating information regarding the jurisdiction's capabilities and past integration of hazard mitigation concepts.
- Identify mitigation initiatives that have reasonable potential to be accomplished within the lifespan of the County HMP (five years), including both FEMA-eligible projects and those projects using funds from non-FEMA sources.

Jurisdictional Annexes

While the jurisdictional annex format is designed to document and assure local compliance with the DMA 2000 regulations, its greater purpose and function includes:

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

It is recognized that each jurisdiction's annex is a "living" document and will continue to be improved as resources permit. As such, its design is intended to promote and accommodate continued efforts to maintain the annex to be current and to improve the effectiveness of the annex as the key tool, reference and guiding document by which the jurisdiction will implement hazard mitigation locally.

The following provides a description of the various elements of the jurisdictional annex.

Section 9.X.1: Hazard Mitigation Planning Team: Identifies the hazard mitigation planning primary and alternate(s) contacts and Floodplain Administrators as identified by the jurisdiction.

Section 9.X.2: Jurisdiction Profile: Provides an overview and profile of the jurisdiction, including an identification of areas of known and anticipated future development and the vulnerability of those areas to the hazards of concern.



Section 9.X.3: Growth/Development Trends: Summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.

Section 9.X.4: Capability Assessment: This subsection provides an inventory and evaluation of the jurisdiction's tools, mechanisms and resources available to support hazard mitigation and natural hazard risk reduction. Within the municipal annexes, tables provide an inventory of the municipality's planning and regulatory, administrative and technical, and fiscal, capabilities, respectively. Further, another table identifies the municipality's level of participation in state and federal programs designed to promote and incentivize local risk reduction efforts.

The Capability Assessment also documents the NFIP as implemented within the jurisdiction. This summary was based on surveys prepared by, and/or interviews conducted with, the NFIP Floodplain Administrators for each NFIP-participating community in the County.

Section 9.X.5: Hazard Event History Specific to the Jurisdiction: Identifies hazard events that have caused significant impacts within the jurisdiction, including a summary characterization of those impacts as identified by the jurisdiction. The documentation of events and losses is critical to supporting the identification and justification of appropriate mitigation actions, including providing critical data for benefit-cost analysis. It is recognized that this "inventory" of events and losses is a work-in-progress, and may continue to be improved as resources permit. As such, the lack of data or information for a specific event does not necessarily mean that the jurisdiction did not suffer significant losses during that event.

Section 9.X.6: Jurisdiction-Specific Vulnerabilities and Hazard Ranking: This subsection provides information regarding each plan participant's vulnerability to the identified hazards. Full data and information on the hazards of concern, the methodology used to develop the vulnerability assessments, and the results of those assessments that serve as the basis of these local risk rankings may be found in Section 5 (Risk Assessment).

- **Repetitive Flood Losses:** Summarizes the repetitive and severe repetitive flood losses in the municipality.
- **Critical Facilities:** Identifies potential flood losses to critical facilities in the jurisdiction, based on the flood vulnerability assessment process presented in Section 5.
- **Identified Issues:** Presents other specific hazard vulnerabilities as identified by the jurisdiction.
- **Hazard Ranking:** The Cape May County HMP update identifies and characterizes the broad range of hazards that pose risk to the entire planning area; however, each jurisdiction has differing degrees of risk exposure and vulnerability aside from the whole. The local risk ranking serves to identify each jurisdiction's degree of risk to each hazard as it pertains to them, supporting the appropriate selection and prioritization of initiatives that will reduce the highest levels of risk for each community.

Section 9.X.7: Mitigation Strategy and Prioritization: This section discusses and provides the status of past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

- **Past Mitigation Initiative Status:** Where applicable, a review of progress on the jurisdiction's prior mitigation strategy is presented, identifying the disposition of each prior action, project or initiative in the jurisdiction's updated mitigation strategy. Other completed or on-going mitigation activities that were not specifically part of a prior local mitigation strategy may be included in this sub-section as well.
- **Proposed Hazard Mitigation Initiatives for the Plan Update:** Table 9.X-16 presents the jurisdiction's updated mitigation strategy. As indicated, applicable mitigation actions, projects and initiatives are further documented on an Action Worksheet which provides details on the project identification,



evaluation, prioritization and implementation process. Table 9.X-17 provides a summary of the local mitigation strategy prioritization process discussed in Section 6.

Section 9.X.8: Staff and Local Stakeholder Involvement in Annex Development: This section in each annex provides details on which departments were involved throughout the development of the jurisdictional annex. Further detail is provided in Section 3 (Planning Process), Section 9 (jurisdictional annexes) and Appendix B (Participation Matrix).

Hazard Area Extent and Location Maps: Each annex includes a series of maps illustrating identified hazard zones and critical facilities. Further, these maps show areas of known or anticipated future development, as available and provided by the jurisdiction.

Action Worksheets: FEMA-eligible mitigation actions, projects and initiatives are further documented on an Action Worksheet which provides details on the project identification, evaluation, prioritization and implementation process.

Annex Signature Pages

Workshops and additional meetings (via email and/or teleconference) to complete the jurisdictional annexes were held with the Steering Committee and Planning Partnership throughout the planning process. In preparation for the draft plan public review, each jurisdiction was asked to have their ‘mitigation team’ review their annex to ensure it was complete and accurate for posting to the Cape May County Office of Emergency Management’s mitigation website. To demonstrate broad and comprehensive review and input, each jurisdiction collected signatures from these representatives. Refer to Appendix B (Participation Matrix) to review the annex signature pages.

In summary, all participating communities and the County completed the planning partner expectations and annex-preparation process. Details regarding these meetings are described further in Sections 2 (Plan Adoption) and 6 (Mitigation Strategy). Completed jurisdictional annexes are presented in Section 9 (Jurisdictional Annexes).

8.5 COVERAGE UNDER THE PLAN

All jurisdictions (County and municipalities) met the participation requirements specified by the Steering Committee. Any non-participating local jurisdiction within the Cape May County planning area can “dock” to this plan in the future following the linkage procedures defined in Appendix I (Linkage Procedures).

Table 8-1 lists the status of each jurisdiction, whether or not they submitted letters of intent to participate, and their ultimate status in this plan update. Refer to Appendix B (Participation Matrix) and Appendix C (Meeting Documentation) for details on participation and meeting attendance.

Table 8-1. Jurisdictional Status

Municipality	Letter of Intent to Participate	Attended Workshops and/or Meetings and Project Calls	Provided Update on Past Projects	Submitted Mitigation Actions for Current Plan	Seeking Approval for Adoption (meets all previous requirements)
Cape May County	N/A	X	X	X	X
Avalon Borough	***	X	X	X	X
Cape May City	X	X	X	X	X



SECTION 8: PLANNING PARTNERSHIP

Municipality	Letter of Intent to Participate	Attended Workshops and/or Meetings and Project Calls	Provided Update on Past Projects	Submitted Mitigation Actions for Current Plan	Seeking Approval for Adoption (meets all previous requirements)
Cape May Point Borough	X	X	X	X	X
Dennis Township	X	X	X	X	X
Lower Township	X	X	X	X	X
Middle Township	X	X	X	X	X
North Wildwood City	X	X	X	X	X
Ocean City	X	X	X	X	X
Sea Isle City	X	X	X	X	X
Stone Harbor Borough	X	X	X	X	X
Upper Township	X	X	X	X	X
West Cape May Borough	X	X	X	X	X
West Wildwood Borough	X	X	X	X	X
Wildwood City	X	X	X	X	X
Wildwood Crest Borough	X	X	X	X	X
Woodbine Borough	X	X	X	X	X

N/A = Not applicable. The Cape May County Department of Emergency Management is the HMP Coordinator and managed the project and grant and served as Steering Committee chair. A letter of intent to participate was not required for Cape May County.

***Note that municipalities that have not submitted a letter of intent but are marked as participating have provided a verbal intent to participate and thus have updated annexes and are counted in the hazard mitigation plan update for 2021.



9.1 CAPE MAY COUNTY

This section presents the jurisdictional annex for Cape May County. The annex includes a general overview of Cape May County; an assessment of Cape May County's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.1.1 Staff and Local Stakeholder Involvement in Annex Development

Cape May County followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.1-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Martin L. Pagliughi; Director, Cape May County Office of Emergency Management Address: 30 West Mechanic Street Cape May Court House, NJ 08210 Phone Number: (609) 463-6570 Email: mpagliughi@co.cape-may.nj.us		Name / Title: John Edwards, Deputy Director, Cape May County Office of Emergency Management Address: 30 West Mechanic Street Cape May Court House, NJ 08210 Phone Number: (609)-463-6570 Email: John.Edwards@co.cape-may.nj.us
Name	Title	Method of Participation
Martin L. Pagliughi	Director, Cape May County Office of Emergency Management	Primary point of contact, Mitigation Program Development Support, Reviewed and Signed Off on Annex
John Edwards	Deputy Director, Cape May County Office of Emergency Management	Alternate point of contact, Mitigation Program Development Support
Leslie Gimeno	Director, Cape May County Planning Department	Mitigation Program Development Support
Robert Church	County Engineer	Mitigation Program Development Support, Reviewed and Signed Off on Annex
Kevin Thomas	Public Health Coordinator	Mitigation Program Development Support
John Conturo	Solid Waste Program Manager	Capability Assessment Support
Josh Palombo	Wastewater Program Manager	Mitigation Program Development Support
Michael Donohue	County Administrator	Reviewed and Signed Off on Annex
Brittany Smith	County Fiscal/CFO	Reviewed and Signed Off on Annex

9.1.2 Jurisdiction Profile

Section 4 (County Profile), Volume I of this HMP includes details on Cape May County's population, location, climate, history, and growth and development trends.



9.1.3 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 understanding a jurisdiction's overall risk to its hazards of concern. The jurisdictional annexes for each municipality summarize recent and expected future development trends, including major residential/commercial development and major infrastructure development. The Cape May County Planning Department is responsible for reviewing subdivisions of land and site plans, advising freeholders on planning matters, and providing information for individual citizens, industries, public service groups, and government officials.

9.1.4 Capability Assessment

An inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies was developed for the County. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The County's adaptive capacity for the impacts of climate change.
- Information on National Flood Insurance Program (NFIP) compliance.

Areas that mitigation is currently integrated are summarized in this Capability Assessment. Cape May County identified specific integration activities that will be incorporated into procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

The table below summarizes the legal and regulatory tools that are available to Cape May County and where hazard mitigation has been integrated.

Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
Codes, Ordinances, & Requirements					
Building Code	No	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. <i>International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon), County oversees disputes.</i>5:23A-2.1 <i>Hearing Applications. A person who is aggrieved by any ruling, action, order or notice, order or decision of a local enforcing agency that enforces either the state Uniform Construction Code or the Uniform Fire Code, including, without limitation, any refusal to act upon an application, may file an application for a hearing with the secretary of the County Construction Board of Appeals.</i>					
Zoning Code	No	Local	Yes – if municipality has a Planning Board	Yes	-



Table 9.1-2. Planning, Legal and Regulatory Capability

				Has the HMP been integrated in the last 5 years? If yes-how?	
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	If yes- how? Describe in comments
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Subdivision and Site Plan Resolution of Cape May County, adopted by the Board of Chosen Freeholders as amended through 06-28-2011. The purpose of this Resolution shall be to provide regulations and standards to guide land development along County roads in the County of Cape May, New Jersey, in order to preserve the public health, safety, convenience and general welfare of the County. The approval provisions of this Resolution shall be administered by the Planning Board of the County of Cape May in accordance with N.J.S.A. 40:27-1, et seq.Subdivisions. All subdivision of land within Cape May County shall be submitted to the County Planning Board for review and/or approval, prior to approval by the appropriate local official or agency, except that conditional local approval may be granted, prior to review and/or approval by the County Planning Board, to subdivisions involving no new streets, not more than three lots, and which do not abut a County road. Such conditional local approval shall become final upon review and/or approval by the County Planning Board of each such subdivision6-3.13. Floodways. To prevent and eliminate conditions which, in the event of flood and storm, threaten public health, safety and welfare and which lead to damage to, or loss of, property, the County hereby:<ul style="list-style-type: none">Prohibits the erection or location of buildings and structures in the floodway area, as delineated on the Cape May County Official Map, adopted by the Board of Chosen Freeholders by Resolution No. 4803-77, amended by Resolutions No. 9578-82, No. 615-88, and as may be further amended from time to time.Prohibits the filling within, or obstruction of, any floodway designated on the official County Map. The exact boundary of a floodway of active streams will be determined by the County Engineer. Exact boundaries of seasonal or ephemeral streams will be determined by mutual agreement between the County Engineer and the applicant, or his/her engineer. The controlling factor in determining the boundaries of seasonal or ephemeral streams shall be where the seasonal high water table is at the surface.Chapter VII, Stormwater Management Design Criteria §7-1 General Criteria. 7-1.1. Purpose. The drainage design criteria herein are intended to prevent an increase in the stormwater run-off rate after construction of a development. All stormwater management facilities shall be designed in conformance with the applicable Stormwater Management Plan and the New Jersey Stormwater Best Management Practices Manual. [Res. 423-08]					
Stormwater Management	No	-	Yes	-	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none">N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	State, County, Local	Yes – if municipality	Yes	-



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
			has a Planning Board		
Comment: <ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Though the State Plan is not a regulatory document, many state agencies have established memorandums of agreement with the Office of State Planning and are using the policies and guidelines of the Plan to guide their involvement, spending, and implementation of their programs. This process has a significant effect on environmental regulations and various State and Federal funding programs throughout Cape May County. Thus, the State Plan ultimately affects the land use and development of Cape May County. The County's Wastewater Management Plan limits density through the provision of sewer service. 					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Subdivision and Site Plan Resolution of Cape May County, adopted by the Board of Chosen Freeholders as amended through 06-28-2011. The purpose of this Resolution shall be to provide regulations and standards to guide land development along County roads in the County of Cape May, New Jersey, in order to preserve the public health, safety, convenience and general welfare of the County. The approval provisions of this Resolution shall be administered by the Planning Board of the County of Cape May in accordance with N.J.S.A. 40:27-1, et seq. Site Plans. Subdivision, 2-6.1. A copy of the plan shall be submitted to the County Engineer for an engineering evaluation of the site plan in accordance with the standards and criteria established in this Resolution. The County Planning Board shall not act on a site plan until the report from the County Engineer's Office is received, containing recommendations for County requirements, including the amount of performance guarantees, maintenance bonds, payments in lieu of County road improvements and proportionate share of future installation of drainage facilities. 6-3.13. Floodways. To prevent and eliminate conditions which, in the event of flood and storm, threaten public health, safety and welfare and which lead to damage to, or loss of, property, the County hereby: <ul style="list-style-type: none"> Prohibits the erection or location of buildings and structures in the floodway area, as delineated on the Cape May County Official Map, adopted by the Board of Chosen Freeholders by Resolution No. 4803-77, amended by Resolutions No. 9578-82, No. 615-88, and as may be further amended from time to time. Prohibits the filling within, or obstruction of, any floodway designated on the official County Map. The exact boundary of a floodway of active streams will be determined by the County Engineer. Exact boundaries of seasonal or ephemeral streams will be determined by mutual agreement between the County Engineer and the applicant, or his/her engineer. The controlling factor in determining the boundaries of seasonal or ephemeral streams shall be where the seasonal high water table is at the surface. Chapter VII, Stormwater Management Design Criteria §7-1 General Criteria. 7-1.1. Purpose. The drainage design criteria herein are intended to prevent an increase in the stormwater run-off rate after construction of a development. All stormwater management facilities shall be designed in conformance with the applicable Stormwater Management Plan and the New Jersey Stormwater Best Management Practices Manual. [Res. 423-08] 					
Environmental Protection	No	Federal & State	No	-	-
Comment: <ul style="list-style-type: none"> It should be noted that large sections of the County are located within the Pinelands Area, Pinelands National Reserve and the CAIRA Zone so there are many environmental controls in place that provide for environmentally sensitive development. 					
Flood Damage Prevention	No	State & Local	Yes	-	-
Comment:					



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
<ul style="list-style-type: none">The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.Passage and enforcement of Flood Damage Regulations are primarily a municipal function.					
Wellhead Protection	Yes	County	No	Yes	-
Comment: <ul style="list-style-type: none">The County instituted a Wellhead Protection Program for some small lots in Lower Township and Middle Township.					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Planning Documents					
Comprehensive / Master Plan	Yes	State & County	Yes	Yes	-038, -039, -040
Comment: <ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.Cape May County Comprehensive Plan, last amended 02-15-2005 by the Cape May County Planning Board. The Cape May County Planning Board's responsibility for developing and implementing a county-wide comprehensive plan is derived from the New Jersey County Planning Enabling Act of 1935 (C.40:27). This act empowers counties with the ability to establish Planning Boards and directs those boards to "...make and adopt a master plan for the physical development of the county." This document represents the fifth edition of a comprehensive plan for Cape May County.POLICY:<ul style="list-style-type: none">Continue the expansion and enhancement of the County Park system to meet future needs. As envisioned by County Planners in 1962, the three recreation-open space area strategy (northern park, central park and southern park) has been realized and should be enlarged through the Open Space and Farmland Preservation Program and other means.Fresh water recharge areas and wellhead protection areas should be acquired to preserve future water supply and open space recreation needs. This criteria is a part of the County's Open Space and Farmland Preservation Program evaluation process and should be stressed as vital to the County's futureWhere appropriate, development shall maintain its original character, with wooded areas, water features, and vistas providing buffer strips between any natural feature considered a prime resource to be preserved. Site design, with open space, controlled density, and proper public facilities as an integral part of any development, should be required.					



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
<ul style="list-style-type: none"> The causeways linking the mainland to the island communities are of special concern. No new development should be allowed on these lands. Besides creating traffic hazards and interfering with speedy access to and evacuation from the island communities, this type of development encroaches on or directly promotes deterioration of the County's valuable wetlands. In Cape May County, the vast expanse of natural resources and sensitive areas, coupled with the reliance of the resort economy upon these resources, makes it imperative that the plan maximize its ability to protect and preserve wetlands, farmlands, beach and dune areas, aquifer recharge areas, and air and water resources. 					
Capital Improvement Plan	Yes	County	Yes	Yes	-038
Comment: <ul style="list-style-type: none"> 2020 Capital Budget and Capital Improvement Plan, adopted by the Board of Chosen Freeholders, 03-24-2020. The six-year tentative Capital Budget Plan reflects the continuation of an on-going Capital Program. The continuation of this program should result in additional modern facilities built and bonded under the most favorable conditions. While the 2020 Capital projects being funded have no clearly intended mitigation benefits the projects are; Upgrade Roads and Bridges, Construction and renovation of County Buildings, Improvements - County Park, Purchase Computers & Electronic Equipment, Purchase Vans & Trucks, Purchase Telephone & Comm. Equipment, Purchase Equipment - Crest Haven, and Purchase of Equipment - Various Dept 					
Disaster Debris Management Plan	Yes	County - CMCMUA	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The CMCMUA has prepared a Temporary Debris Management Plan that is approved by NJDEP to manage potential debris overflow in the case of a disaster. The plan is updated every five years and was last approved in 2018. 					
Floodplain or Watershed Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none"> In 2001, Cape May County entered into a formal contract with the New Jersey Department of Environmental Protection to facilitate the Watershed Management Planning Program for the Cape May County watershed. This multi-year program, funded through the NJDEP, requires significant citizen involvement and is designed to create a plan for the preservation and maintenance of the 214,000 acre Cape May watershed. The planning implications of this program are addressed in a new section devoted to watershed management Continued monitoring of the County's water supply is encouraged to determine the extent of salt water intrusion and over-use of existing wells. There is an urgent need to maintain a "safe yield" relationship between aquifer recharge and aquifer withdrawals, particularly in the Cohansey aquifer. In order to avoid costly and/or energy intensive local or regional solutions, municipalities shall be encouraged to plan for development that does not exceed the limits of their available water supply. Aquifer recharge areas should be protected by purchase of critical areas for future well fields, regulation of buffer areas and enforcement of water quality protection programs. In addition to assisting in the implementation of the Wellhead Protection Program as noted above, the County Planning Board will, through its involvement with the County Open Space and Farmland Preservation Program and other land preservation programs, aid in the preservation of these resources by stressing the importance of assigning the highest priority to the acquisition of open space and/or farmlands located in recharge areas with the greatest potential for retention and reclamation of freshwater supplies. Future Water-Supply Scenarios, Cape May County, New Jersey, 2003-2050; Stewards of the water supply in New Jersey are interested in developing a plan to supply potable and non-potable water to residents and businesses of Cape May County until at least 2050. The ideal plan would meet projected demands and minimize adverse effects on currently used sources of potable, non-potable, and ecological water supplies. This report documents past and projected potable, non-potable, and ecological water-supply demands. Past and ongoing adverse effects to production and domestic wells caused by withdrawals include saltwater intrusion and water-level declines in the freshwater aquifers. 					
Stormwater Management Plan	No	County	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Stormwater Management planning is a component of subdivision and site plan review and approval included in Subdivision and Site Plan Resolution of Cape May County, adopted by the Board of Chosen Freeholders as amended through 06-28-2011. County Engineering, with municipal support, is helping municipalities in either the development or update of local stormwater master plans. 					
Stormwater Pollution Prevention Plan	Yes	State & County	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Comment: Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The 					



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
<i>Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s).</i> <ul style="list-style-type: none"><i>Stormwater Pollution Prevention Plan Cape May County Crest Haven Complex and Highway Agency Stormwater Pollution Prevention Plan Cape May County Public Works 04-30-2020.</i><i>The County passed resolution No. 546-06 to adopt and implement the stormwater management standards. The County Engineer has the authority to impose rules, regulation, policies and procedures in order to enforce stormwater issues. The County completed all the required SPPP Form reporting and has followed through with all of the annual stormwater maintenance, outreach, recordation and improvements.</i>					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	County	No	No	-
Comment: <ul style="list-style-type: none"><i>Cape May County Open Space and Recreation Plan, adopted by the Cape May County Planning Board in 2007. The Cape May County Open Space and Recreation Plan (OSRP) has been prepared by the Cape May County Planning Department for adoption by the Cape May County Planning Board to provide a countywide policy on open space and recreation issues. It serves as a strategic plan describing the County's open space and recreation needs and provides a basic action plan to address those needs.</i><i>The Cape May County Park system is comprised of four distinct sites. County Park North, in Upper Township along the N.J. Route Nine corridor (25 acres), is officially known as the Richard K. Cameron Wildlife Sanctuary. The most active site, located in the center of the County in Cape May Court House, is known as Park Central (265 acres). This is the most visited site and contains many recreational facilities, as well as the popular County Zoo. Fishing Creek Park (1,508 acres), sometimes referred to as County Park South, is located in the Del Haven section of Middle Township near the Delaware Bay. The fourth and smallest site is the Avalon Manor Fishing Pier (0.2 acres), located in the Avalon Manor section of Middle Township. Together these sites provide approximately 1,800 acres of county owned recreational land.</i><i>Cape May County is the recipient of a Smart Growth Strategic Planning Grant that is being used to designate suitable target areas that will ultimately assist our municipalities in the implementation of a transfer of development rights program and contribute to the preservation of additional open space within the County. This planning assistance initiative is funded by the New Jersey Office of Smart Growth and is an example of how the County continues to assist our municipalities in open space preservation efforts. Initiatives such as this are an active component of this action plan.</i>					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-	-
Comment: <ul style="list-style-type: none"><i>NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.</i>					
Community Wildfire Protection Plan	No	County	No	Yes	-
Comment: <ul style="list-style-type: none"><i>Best Management Practices for Creating and Maintaining Wildfire Fuelbreaks in New Jersey's Wildland Urban Interface. Establishment of a fuelbreak can mean the difference between a structure surviving a wildfire or being damaged and destroyed. Given that a wildfire in the NJ Pinelands can destroy the average home in 10 minutes or less, the usefulness of a fuelbreak cannot be overemphasized as a technique for protecting life and property.</i>					
Community Forest Management Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none"><i>Much of the County is in the Pineland Area within which Forest Management is addressed.</i>					
Transportation Plan	Yes	County	No	Yes	-
Comment: <ul style="list-style-type: none"><i>Cape May County Transportation Study, 2006, adopted by the Board of Chosen Freeholders on 09-19-2006. This plan is divided into three sections. The first section provides an overview of the County's geographic location, physical features, and transportation history. The second section provides an overview of the County's existing transportation system, including rail, air, and other transport. The third and final section discusses planning issues and areas of specific concern for transportation and includes a list of specific objectives and recommendations for the future of transportation in Cape May County.</i>					



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
<ul style="list-style-type: none">At the Federal level there has been a de-emphasis of new road construction and emphasis on the maintenance and upkeep of our existing highway system. As a result of the Federal guidance, this plan proposes over 61 million dollars of transportation activities in the three year period, but new roads are only a small portion of the total mileage involved.General Plan Objectives are to; address traffic safety, reduce congestion, enhance public transit, and address air quality.<u>RTP 2050 Plan</u>. This is a regional Plan that emphasizes maintenance of the existing transportation system while addressing the future problems and needs of the region. There is more of an emphasis on operations and performance-based planning, supported by performance measures, and the establishment of performance targets. The RTP 2050 also includes a comprehensive review of current transportation resources in South Jersey. It includes highways, transit, bicycle, pedestrian, and intermodal facilities. For each travel mode, the demand for travel is reviewed, needs are assessed, and opportunities and strategies for improvement are discussed.					
Agriculture Plan	Yes	County	No	Yes	-
Comment: <ul style="list-style-type: none">Cape May County Comprehensive Farmland Preservation Plan, adopted by the Cape May County Planning Board on 11-20-2007. The farming industry is an important piece of Cape May County's local economy. Agriculture accounted for more than \$11.25 million in sales during 2002. Six of sixteen municipalities in Cape May County have active farmland. A ranking by acreage is as follows: Dennis Township 3,983, Middle Township 3,319, Lower Township 1,187, Upper Township 2,335 Woodbine 408, and West Cape May 239. The majority of preserved and targeted farmland lies within the CAFRA area of the County. Fewer than ten percent lies within the Pinelands area.Regarding agriculture, the County Comprehensive Plan presents two main policies:<ul style="list-style-type: none">In cooperation with the New Jersey Department of Agriculture and the Cape May County Board of Agriculture, the County Planning Board and staff will support programs that encourage the use of locally grown farm products and efforts to secure, develop, and retain farm produce markets.Through involvement with the County Open Space and Farmland Preservation Program and the State Farmland Preservation Program, the County Planning Board and staff will provide continued support for the County Agricultural Development Board and the State Agricultural Development Committee in their efforts to preserve and increase viable farmland within the County.Wetlands Reserve program (WRP). The WRP is available to farmers and offers them payments for restoring and protecting wetlands on their property that had been previously drained for agricultural use. Wetlands help reduce flooding, filter pollutants from water, provide critical wildlife habitat, and protect open space. Payment by NRCS is based upon appraised agricultural land value. With appraised values from \$100 to \$2000 per acre, many farmers are not willing to create wetlands on otherwise productive agricultural lands.					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none">Although there is not a dedicated Plan, tourism is a major component of the County's economy and is highly promoted by the County and most of its Municipalities.					
Business Development Plan	No	-	No	-	-
Comment:					
Other	Yes	County	No	Yes	-
Comment: <ul style="list-style-type: none">Cape May County, Creative Place Making, Summer 2019. The Creative Placemaking Plan was initiated in summer 2018 with the goal of creating a brand identity and design guidelines for Open Space projects throughout the County. The plan also included conceptual design of several sites in the County as well as goals and objectives for implementation. This document includes a detailed summary of the process, work product, design guidelines, and other elements created through the planning process. The Planning process included four Phases; Discovery, Ideation, Design Development, and Documentation.Cape May County's sense of place is distinct and diverse. The geographic and ecological conditions inherent to the peninsula create beautiful natural habitats for numerous wildlife species. These conditions also are a strong driver of ecotourism and provide a wide array of recreational experiences for residents and visitors.The Plan identifies four Goals;<ul style="list-style-type: none">Farmland Preservation Programs Create A Clear, Concise, And Compelling Identity For The Open Spaces,Identify And Increase Quality Of Life For Residents And Visitors Establish A Catalog Of Site Elements Which Express The Program,Preservation Into Resident And Visitor Experiences Strengthen And Integrate Public Art, Cultural Events, And Historic, Implementation, And Funding Establish A Clear Process For Project Coordination, Communication,					



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	OEM	Yes	Yes	2021_CapeMay County_003
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.The County completed an EMP in 2015.The County Office of Emergency Management has partnered with the New Jersey Office of Emergency Management to continue to develop, enhance, and implement existing emergency plans.					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	OEM	Yes	Yes	-
Comment: There is an OFSPH working group with functions split between law enforcement/OEM/Hazmat/firefighting.					
Post-Disaster Recovery Plan	Yes	County	No	Yes	-
Comment: <ul style="list-style-type: none">Strategic Recovery Planning Report, Draft, 11-03-2015. The purpose of the SRPR is to evaluate the impacts of the disaster on relevant community features. The evaluation can be broad or narrow but should focus on planning goals, strategies, and priorities leading to actions that are most urgently needed for public safety and economic recovery. The SRPR should serve as a guide for actions to not only recover from the effects of Superstorm Sandy but also to reduce vulnerabilities to future disasters. This document serves as the SRPR for the County of Cape May, NJ.The Plan included a vulnerability assessment which determined that Cape May County has 229 critical facilities that were analyzed. Three of the critical facilities are located in an area vulnerable to wildfires. None of the Cape May County critical facilities are within ten miles of a nuclear power plant. There are 75 facilities in the Special Flood Hazard Area, where there is a 1% annual chance of flooding and 87 critical facilities are vulnerable to impacts from two feet of sea level rise. Some facilities may be at risk for more than one incident.The NJHMP includes an analysis of potential losses based on the preliminary work map flood hazard areas. For Cape May County, the NJHMP estimates that 39,283 people reside in the Special Flood Hazard Area (SFHA), representing 40.4 percent of the total County population. The estimated general building stock exposure within the SFHA is estimated at \$15.215 billion, representing 61.7 percent of the County. According to the Coastal Vulnerability Index, the majority of the coastline in Cape May County is ranked as High (35%) or Very High Risk (33%). The only Low Risk areas identified are in the back-bay areas of the Wildwoods, including Richardson Sound and Taylor Sound, and a small stretch of coast along the Delaware Bay in Middle Township. Areas ranked as Moderate Risk include the Cape May Harbor, the Wildwoods oceanfront, Strathmere, and portions of Ocean City					
Continuity of Operations Plan	Yes	County Administrator	No	Yes	-
Comment: <ul style="list-style-type: none">Cape May Office of Emergency Management maintains a Continuity of Operations Plan (COOP).					
Public Health Plan	Yes	County	No	Yes	2021_CapeMay County_002
Comment: <ul style="list-style-type: none">Community Health Needs Assessment, 2017 – 2019. Health Care Reform 3590 Patient Protection and Affordable Care Act requires 501c3 nonprofit hospitals to conduct a Community Health Needs Assessment every three years, which should include: A strategic plan to be adopted and implemented; Collaboration with community health agencies; and Assessment, planning and implementation between January, 2017 and ending December, 2019.Four Priority Community Health Needs: After analyzing results gathered from the focus group meetings and one-on-one interviews conducted from March 2017 to November 2017 with community leaders, health professionals and community residents throughout Cape May County, the following top four health needs were identified; Cancer, Cardiovascular Disease, Diabetes/Obesity, and Mental Health/Substance Use Disorder.Community Health Improvement Plan, 2007: The Cape May County Community Health Improvement Plan (CHIP) is a strategic plan developed by a collaborative team of individuals and agencies from throughout Cape May County, New Jersey. The collaborative process outlined a comprehensive approach to assessing the health and well-being of county residents. Specifically, the framework promotes four separate assessments. 1. Forces of Change Assessment 2. Local Public Health System Assessment 3. Community Health Status Assessment 4. Community Themes & Strengths Assessment					
Other	Yes	County	No	Yes	-
Comment:					



Table 9.1-2. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Has the HMP been integrated in the last 5 years? If yes-how?	
				If yes- how? Describe in comments	If yes- how? Describe in comments
<ul style="list-style-type: none">Cape May County Energy Master Plan, prepared for the County Board of Chosen Freeholders with no date. Because of its sensitivity to the environment, and unique geographic location, the County has placed a high priority on environmental stewardship, renewable energy and energy efficiency as a means to protect its natural resources and provide an example of “green action” for the residents and businesses of CMC. The Plan has identified that the County has a responsibility to enforce strong commitment to reducing global warming because of its extensive shoreline, and huge economic impact from rising ocean levels. Reducing the carbon footprint of the County will be a necessity; that the County needs to lead New Jersey by example. It must demonstrate an aggressive approach to implementing all forms of energy efficiency projects and promotion of clean energy technologies; and that the County could greatly benefit from the promotion of clean energy service and manufacturing business that would create tax base and jobs, in a new and rapidly growing market sector that would suit Cape May County’s location and demographic well.<ul style="list-style-type: none">The study indicates that Cape May County is singularly blessed by natural wind energy resources far in excess of all other counties within the State. The wind resource is substantive onshore as well as offshore and the county possesses adequate agricultural lands to provide dual economies to its farmers who choose to partner with wind developers to exploit their natural resources.Cape May County Hurricane Evacuation and Elevation Study Extension (2007) worked to expand on the work completed under the previous study, "Analysis and Modeling of Cape May County Roadway Elevations and Evacuation Routes", 2006. This earlier study was sponsored by the New Jersey Department of Transportation and the New Jersey State Police Office of Emergency Management. The Study included evacuation simulation modeling and roadway elevation surveying.					

Table 9.1-3. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	No – this done at the municipal level
Does your jurisdiction have the ability to track permits by hazard area?	No- the County does not issue development permits; this is done at the municipal level
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No-municipalities conduct their own analyses

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to Cape May County.

Table 9.1-4. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Associated with Department of Planning
Mitigation Planning Committee	Yes	OEM – Mitigation Plan Lead
Environmental Board / Commission	No	-
Open Space Board / Committee	Yes	Department of Planning - Open Space and Farmland Preservation; Open Space Review Board
Economic Development Commission / Committee	No	-
Warning Systems / Services (mass notification system, outdoor warning signals)	Yes	Code Red- OEM
Maintenance program to reduce risk	Yes	Department of Public Works/Office of the County Engineer- maintenance of roads and drainage; mitigation project planning and monitoring



Table 9.1-4. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Mutual aid agreements	Yes	Fire/EMS. Cape May Engineering and Office of Emergency Management are creating, enhancing, and maintaining mutual aid agreements.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Department of Public Works/Office of the County Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Department of Public Works/Office of the County Engineer; Department of Planning
Planners or engineers with an understanding of natural hazards	Yes	Department of Public Works/Office of the County Engineer
Staff with training in benefit/cost analysis	Yes	Department of Public Works/Office of the County Engineer
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	Yes	In house and contracting
Stormwater engineer	Yes	In house and contracting
Personnel skilled or trained in GIS applications	Yes	Department of Planning
Local or state water quality professional	Yes	In house and contracting
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Emergency Management Coordinator at OEM
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Various County Departments, including contracted
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to Cape May County.

Table 9.1-5. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to Cape May County.



Table 9.1-6. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes- One of ESFs (ESF-15), County PIO Diane Wieland
Do you have personnel skilled or trained in website development?	Yes- Diane Wieland
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes- the County has a link to both the current (2021) draft and the 2016 plan
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes- County Facebook, Twitter- synchronized with website
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes—LEPC is considered (County Working Group); Fire, EMS, Police, Communications – administer grant funding; meets monthly
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	No- but almost all municipalities have mass notification systems in place. Only use County (Code Red) for county-wide emergencies. County sends communities info and it is up to them to put it out. <i>The Cape May County Herald</i> and radio stations publish data from releases.

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to Cape May County.

Table 9.1-7. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	N/A	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	-	-
Public Protection (Fire ISO Protection Class)	N/A	-	-
Storm Ready Certification	Yes	N/A	In progress
Firewise Community Classification	N/A	-	-
Sustainable Jersey	N/A	-	-

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.1-8. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate



Table 9.1-8. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

*Notes:**Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;**Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.*

The County Planning Department reported that it did not have internal resources to determine the localized impacts of climate change and relies on the NJ Department of Environmental Protection for technical assistance. The County is supportive of integrating climate change in policies or actions and wants to enhance resilience. The County has developed an online floodwater modeling tool through County initiatives. The County is adjusting plans for infrastructure to increase road elevations and will continue to consider new opportunities to integrate climate change and sea level rise.

NATIONAL FLOOD INSURANCE PROGRAM

Management and regulation of the regulatory floodplains are done at the local level. Refer to the individual annexes for more information.

ADDITIONAL AREAS OF EXISTING INTEGRATION

The following describes the areas of integration in Cape May County.

- **County Engineering:** Cape May County partnered with the City of Wildwood to raise roadways and elevate the pump station. This reflects the County's philosophy to reinvest rather than treat and enhance resiliency. The County Engineer is working with local project leads to identify order of magnitude costs for the large number of county-sponsored infrastructure mitigation projects. Cape May County Engineering, with municipalities, is obtaining backup power to ensure continuity of operations for stormwater, wastewater, public potable water, pumping stations, etc. Cape May County Engineering, working with facility owners/ operators, is installing generators on buildings and facilities that operate as temporary shelters. The Department is also installing valves on the ends of outfall pipes to prevent tides from backing up through the stormwater drainage systems. They will also replace valves on outfall pipes that no longer function as intended.
Cape May County Engineering, working with NJDOT and municipalities as necessary, is replacing corrugated metal stormwater pipes throughout the County.
- **County Planning:** All county-funded open space projects have components of resilience. In Upper Township, a new park at Beesley's Point elevated a parking lot and created a berm for a new kayak launch/facility. The County Planning Department is also working with Woodbine on a \$1.7 million eco-park. The Cape May County Planning Department is reviewing zoning and land use regulations against the vulnerability issues outlined in the Strategic Recovery Planning Report. They are also developing amendments to anticipate necessary changes to height, bulk and setback requirements needed to improve resiliency based on the underway Comprehensive Plan update. The Department is also reviewing existing permitting procedures to determine improvements for fast-tracking/streamlining for expediting projects directly related to recovery or mitigation and that are consistent with adopted Design Standards.
- **Emergency Management:** Cape May County Emergency Management are working to promote municipal participation in incentive-based programs, such as NFIP CRS program, NFPA Firewise Program, and NWS StormReady and Tsunami Ready. Cape May Office of Emergency Management is ensuring adequate communication systems and emergency alert systems are available and reliable. The



County Fire Coordinator is working with those communities with significant wildfire risk to identify and implement wildfire mitigation activities, programs and initiatives, including community participation in the NFPA “Firewise” program.

- The **Cape May County Planning Department**, working with **Engineering/ Department of Public Works and Office of Emergency Management**, are updating the County Master Plan with a Community Resiliency Element that reviews the Land Use Plan Element and development standards against the vulnerability issues outlined in the SRPR and adopt as a Master Plan Element.
- **Cape May County Engineering and Emergency Management** are working with municipal mitigation planning point of contacts to continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7 (Plan Maintenance). The County continues efforts to facilitate the annual plan review and reporting process through improved procedures and tools (e.g. online survey and reporting tools). The Departments are also working with facility owners and municipal support to assess wireless tower owners’ vulnerability to wind damage.
- The **Cape May County Planning Department and Office of Emergency Management**, working with NOAA and Rutgers, is assessing the long-term impacts of future sea level rise to be projected and studied for Cape May County.
- The **New Jersey Department of Transportation** has partnered with Cape May County Office of Emergency Management and the State Police to update evacuation plans.
- The US Army Corps of Engineers is supporting USACE beach & dune replenishment efforts.

9.1.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Volume I, Section 5 (Risk Assessment) of this plan.

9.1.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazards of greatest concern and risk to the County. For additional vulnerability information relevant to this jurisdiction, refer to Section 5 (Risk Assessment).

REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the County. These properties are not owned by the County; therefore, the County has no jurisdiction to mitigate however supports local mitigation projects to address repetitive flooding. Refer to Section 5.4.5 (Flood) for more detailed information on NFIP statistics by municipality, and the municipal annexes in Sections 9.2 through 9.17 for details on the number of mitigated properties in each municipality.

- Number of repetitive loss (RL) properties: 2,233
- Number of severe repetitive loss (SRL) properties: 519

CRITICAL FACILITIES

Critical Facilities and lifelines are identified in Section 4 (County Profile).

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities that need to be addressed at the County level:

- Cape May County has notable groundwater intrusion issues due to water withdrawals and the sensitivity of the underlying aquifer.



- Cape May County's Health Department has faced significant challenges owing to COVID-19. Beginning in Fall 2021, the County's case rate climbed significantly upwards and is placing strain on the County's healthcare system. The County has identified a need to support mobilization as vaccines arrive.
- Cape May County law enforcement agencies recently upgraded to P-25 compliant radios. However, County EMS and fire departments have seen patchwork acquisition of P-25 radios due to the high cost of new radios.
- Ocean Drive (CR-619) crossing Townsend's Inlet and connecting Sea Isle City and Avalon is vulnerable to coastal erosion. The road is vulnerable to overtopping and waves crash over the existing seawall.
- The existing timber groin on Beach Ave (CR-604) in Cape May is deteriorated and needs to be replaced from Wilmington Avenue south.
- Beach Ave (CR-604) discharges stormwater runoff through outfalls to the Ocean. These outfalls fill with sand due to littoral drift, causing clogs and water backup that causes flooding and requires frequent maintenance.
- CR-621 is a designated County evacuation route for the Wildwoods, including Diamond Beach in Lower Township. The Route traverses a low-lying stretch of marsh that is vulnerable to tidal and nuisance flooding. Additionally, the Route is served by several bridges that are beyond their useful lives.
- Sunset Boulevard (CR-606) is a county road connecting Cape May Point and Cape May Point State Park to West Cape May, Cape May, and evacuation routes to the north. The road is low-lying and has portions that can flood with water levels as little as one foot above high tide.
- Exit 4 of the Garden State Parkway is a major access point for the Wildwoods and Lower/Middle Townships. The eastern section of the intersection is in the Special Flood Hazard Area and is vulnerable to flooding at tide levels that are four feet above normal high tide.
- CR-614 is a highly-flood vulnerable roadway located in West Wildwood. Much of the roadway begins to flood when tide levels exceed one foot above normal high tide. The road provides the only ingress and egress to/from West Wildwood.
- Though the Exit 6 interchange is on relatively high ground, in the future sea level rise will cause the interchange to be located in the Special Flood Hazard Area and be impacted by flood events.
- Route 147 is on generally higher land, however, upon entering North Wildwood the roadbed elevation decreases. Flooding impacts to the roadway begin at tide levels that are one foot above typical high tides.
- An undersized retention basin results in flooding in the intersection of State Route 47 and the newly completed bridge over Dennis Creek.
- Delaware Avenue/CR-640 connects the US Coast Guard Training Center to Cape May and evacuation routes to the north. Delaware Avenue is protected from Cape May Harbor by a rip-rap system that is subject to erosion and provides inconsistent protection.
- Pacific Avenue is a low-lying major roadway in Wildwood Crest that is vulnerable to nuisance flooding. The corridor is being slated for a revitalization and upgrade of which drainage improvements will be a part.
- The intersection of Avalon Boulevard and the Parkway (Exit 13) is entirely within the Special Flood Hazard Area. This is a vulnerability for evacuation for both travelers coming from Seven Mile Island as well as the mainland.
- Avalon Boulevard is entirely within the Special Flood Hazard Area between the Parkway and Seven Mile Island. As a major evacuation route, the road is vulnerable to flooding from surges three feet above high tide. The road carries more than 10,000 vehicles per day in the summertime.
- Ocean Drive/Third Avenue in Avalon and Stone Harbor is a major thoroughfare connecting the communities and is the longest and busiest roadway in Avalon and Stone Harbor that is most vulnerable



to flooding. Flooding impacts begin with a flood event bringing water levels just one foot above high tide. The removal of outfalls is currently in the design phase.

- The intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway sees nearly 20,000 vehicles on average each day. The intersection is located in the Special Flood Hazard Area and begins seeing flooding impacts when water levels are at least three feet above high tide. Flooding in this intersection is a major vulnerability to a major evacuation route for Ocean City.
- Roosevelt Boulevard (CR-623) is a major access road and evacuation route between Ocean City and the mainland. The road sees average daily traffic of between 10,000 and 25,000 vehicles depending on the season. The Boulevard sees flooding beginning at water levels that are two feet above high tide.
- Cape May is vulnerable to nuisance and stormwater flooding due to low-lying land elevations near Cape Island Creek and Frog Hollow. The City has installed stormwater pump stations to mitigate the flood risk. However, if the pumps fail due to severe storms, the stormwater pumps will not be able to function.
- County routes in Ocean City (including West Avenue and Bay Avenue) are low-lying and vulnerable to flooding. Ocean City has undertaken upgrades to some low-lying areas to address stormwater flooding, though these projects require integration.
- Bay Avenue is a low-lying thoroughfare and County route in Ocean City. Various sections of the roadway are particularly low-lying and vulnerable to flooding at tidal levels in excess of one foot above high tide.
- The County is reliant upon several communication towers that are vulnerable to wind damage. The loss of the towers would hinder communication during emergency situations.
- Certain portions of CR-657 near Beaver Dam Road are vulnerable to flooding owing to groundwater/high water table issues.
- Shunpike Road in Middle Township is vulnerable to stormwater flooding from inland creeks and waterways.
- Fishing Creek/Academy Road (CR-639) is a road running through uplands and wetlands in mainland Lower Township. The road experiences nuisance stormwater flooding.
- Fidler Road experiences localized drainage issues and requires repaving.
- Shunpike Road, a county road, in Lower Township runs through the mainland portion of Lower Township through both uplands and wooded wetlands. The road experiences flooding during rainstorms.
- CR-626 runs through the upland portion of Middle Township near Rio Grande. The road experiences flooding issues owing to stormwater and drainage.
- Seashore Road runs from Middle Township to West Cape May through Middle Township. The road is predominantly located along uplands but experiences nuisance stormwater flooding.
- Dias Creek Road runs between Route 47 and Cape May Courthouse through wetlands, forest, and low-density residential areas. The area is subject to stormwater flooding. Flooding for one side of the road has been mitigated.
- Goshen-Swainton Road (CR-646) runs east-west across Middle Township connecting the neighborhoods of Goshen and Swainton. The road traverses the Cape May National Wildlife Refuge and is impacted by stormwater flooding.
- The Perry Street (CR-633) outfall in West Cape May receives and conveys the Borough's drainage. The outfall requires reconfiguration due to the volume of water, causing the potential for backups.
- Townsends Inlet in Avalon experiences wave overtopping due to a lack of beach fill and protective measures. This threatens traveling vehicles and the integrity of the roadway.
- Ocean Drive runs for just over a mile in Middle Township between Stone Harbor and Grassy Sound. The road traverses a low-lying marsh island and can be impacted by tides between three and four feet above typical high tide.



- Goshen Road (CR-615) traverses through forested uplands and is vulnerable to stormwater flooding along a portion of its route in Middle Township.
- Cape May County does not have specific capital planning for post disaster recovery and improvements. A set-aside capital budgeting project for resilience projects can assist the County with prioritizing and funding capital projects addressing flooding and climate change.
- In the wake of flooding event and local economic changes, various rehabilitation, redevelopment areas, historic districts, open space plans, and other planning documents have been updated and re-examined.
- Cape May County's ecologically valuable landscape and historically significant streetscapes are identified for preservation in the face of increased flooding risk. In order to mitigate future damage to flood hazards while maintaining the ecological and aesthetic integrity of the County, design standards for addressing the visual impact of flood resilience measures is needed.
- 34th Street/Roosevelt Boulevard (CR-623) is a major thoroughfare into Ocean City and also an evacuation route. The AADT on 34th Street ranges from nearly 12,500 vehicles in the off-season to nearly 25,000 vehicles in the summer months. The route is vulnerable to stormwater and tidal flooding owing to the low-lying elevation of the roadway and the lack of a structural barrier to flooding along Roosevelt Boulevard in the wetlands section.
- County roadways, particularly on the barrier islands, frequently experience flooding due to a combination of stormwater and tidal flooding. Motorists (particularly the County's part-time resident and visitors) may not be aware of flooded roadways and risk life safety and property damage when crossing flooded roadways.
- The Strathmere section of Upper Township is a low-lying barrier island community. Commonwealth Ave/CR-619 is the major north-south route through Strathmere and connects the neighborhood to evacuation routes to the north in Ocean City and to the South in Sea Isle City. When Commonwealth Avenue is flooded, evacuation from the neighborhood is impeded. The Avenue will continue to experience inhibited access during rain and tidal events. Stormwater drainage was upgraded but outfall work has not yet been completed.
- CR-619 (Landis Avenue) and CR-625 (JFK Boulevard) are major thoroughfares in Sea Isle City and carry stormwater drainage infrastructure. The City experiences frequent nuisance flooding on these streets. Stormwater drainage was upgraded but outfall work has not yet been completed.
- Various traffic signals along County evacuation routes suffer outages during severe storms. Non-functional traffic signals increase the potential for accidents. Safe traffic control during storm events is pivotal for potential evacuations.
- The MUA-owned Ocean City Wastewater Treatment Facility located at 45th and Simpson Ave in Ocean City treats all of the wastewater from the island of Ocean City, NJ. It is a critical piece of infrastructure that currently is not hardened against a major flood. Furthermore, it resides directly adjacent to the intercostal waterway and just two city blocks from the Atlantic Ocean. In the event of a major flood caused by hurricane, nor'easter storm or the like that resulted in the facility going completely underwater, the facility's ability to treat wastewater from the island of Ocean City would be compromised. In the worst-case scenario, the facility could be out of service for several weeks.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps have been generated for the County that illustrate the probable areas impacted. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes and can be found in the individual hazard profiles in Section 5.

HAZARD RANKING





The hazard ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for Cape May County. Cape May County has reviewed the County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the County assented to the proposed hazard ranking.

Table 9.1-9. Cape May County Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
High	Medium	High	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Medium

9.1.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMC-1	Support the mitigation of flood vulnerable private property through the continued implementation of the Enhanced RL/SRL Initiative	County Hazard Mitigation Coordinator, working with all municipalities (likely through NFIP Floodplain Administrator), including working with regional stakeholders	Ongoing capability		



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMC-2	Promote municipal participation in incentive-based programs, such as NFIP CRS (including through the ongoing support and lead of the “Enhanced RL/SRL Initiative”, NFPA Firewise Program, and NWS StormReady and Tsunami Ready.	CMC Engineering and Emergency Management	Ongoing capability		
CMC-3	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0. Continue efforts to facilitate the annual plan review and reporting process through improved procedures and tools (e.g. online survey and reporting tools).	CMC Engineering and Emergency Management; with the support of municipal mitigation planning point of contacts	Ongoing capability		
CMC-4	Continue to develop, enhance, and implement existing emergency plans.	County OEM and NJOEM	Ongoing capability		
CMC-5	Prepare a Continuity of Operations Plan (COOP)	CMC OEM	Ongoing capability		
CMC-6	Update the Disaster Debris Management Plan (DDMP)	CMC MUA (Solid Waste)	Complete		
CMC-7	Update evacuation plan.	NJDOT; CMC OEM; State Police	Ongoing capability		
CMC-8	Create/enhance/ maintain mutual aid agreements	CMC Engineering and Emergency Management	Ongoing capability		
CMC-9	Identify order of magnitude costs for the large number of county-sponsored infrastructure mitigation projects	County Engineer working with local project leads	Ongoing capability		
CMC-10	Replace three (3) bridges and elevate 2.7 miles of County Route 621 in Lower Township.	County Engineering	In progress	X	2021_CapeMayCounty_008
CMC-11	Elevate ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM).	County Engineering	In progress	X	2021_CapeMayCounty_009
CMC-12	Intersection of State Route 47 and the Garden State Parkway (Middle	NJDOT and NJ Turnpike Authority	No progress	X	2021_CapeMayCounty_010



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	Township) – Elevate Route 47 roadway and ramps, which will require elevation of the Parkway bridge overpass.				
CMC-13	Elevate State Route 47 from George Redding Bridge to Susquehanna Avenue (Wildwood).	County Engineering and State DOT	Completed		
CMC-14	Address flooding on Glenwood Avenue (CR-614) through West Wildwood	County Engineering and municipality	No progress	X	2021_CapeMayCounty_011
CMC-15	Intersection of State Route 147 and the Garden State Parkway (Middle Township) – Elevate Route 147 roadway and ramps, which will require elevation of the Parkway bridge overpass	State DOT and NJ Turnpike Authority	No progress	X	2021_CapeMayCounty_012
CMC-16	Elevate tie-in section of State Route 147 into North Wildwood	State DOT and municipality	No progress	X	2021_CapeMayCounty_013
CMC-17	Elevate Stone Harbor Boulevard (CR-657) from the Parkway into Stone Harbor proper.	County Engineering and Municipality	No progress		
CMC-18	Elevate Courthouse-South Dennis Road (CR-657) through the swamps	County Engineering	No progress		
CMC-19	Identify and rectify cause of flooding at the intersection of State Route 47 and the newly completed bridge over Dennis Creek	State DOT	In progress	X	2021_CapeMayCounty_014
CMC-20	Elevate CR-603 through Lower and Middle Township through Fishing Creek Swamp.	County Engineering	No progress- Meadow is subject to flooding		
CMC-21	Install shoreline protection for CR-640 (entrance to Coast Guard Base) along the Cape May Harbor in the City of Cape May.	County Engineering and USACE	In progress	X	2021_CapeMayCounty_015
CMC-22	Upgrade stormwater drainage system along CR-621 and arterials in the Wildwoods.	County Engineering, Municipalities, and USACE	In progress	X	2021_CapeMayCounty_016
CMC-23	Elevate the Avalon Boulevard northbound onramp to the GSP.	NJ Turnpike Authority	No progress		



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMC-24	Intersection of Avalon Boulevard and the Garden State Parkway (Middle Township) – Elevate Avalon Boulevard roadway and ramps, which will first require elevation of the Parkway bridge overpass.	County Engineering with NJTA	No progress	X	2021_CapeMayCounty_017
CMC-25	Elevate Avalon Boulevard from Parkway into Avalon proper (~2.5 miles).	County Engineering	No progress	X	2021_CapeMayCounty_018
CMC-26	Elevate Sea Isle Boulevard (CR-601) from the Parkway to the Sea Isle bridge.	County Engineering	Complete		
CMC-27	Intersection of Sea Isle Boulevard (CR-601) and the Garden State Parkway (Dennis Township) – Elevate Sea Isle Boulevard roadway and ramps, which will first require elevation of the Parkway bridge overpass.	County Engineering and NJ Turnpike Authority	Complete		
CMC-28	Elevate JFK Boulevard (CR-625) into Sea Isle City (no funding source currently for project, but is in design phase), and upgrade stormwater system.	County Engineering	Complete		
CMC-29	Upgrade stormwater system on CR-619 through Stone Harbor and Avalon	County Engineering with municipalities	In progress	X	2021_CapeMayCounty_019
CMC-30	Upgrade exiting revetment wall (needs to be extended to the south and existing sections upgraded) and provide additional road protection to CR-619 in Strathmere to Ocean City, and elevate sections of road as needed.	County and USACE, with municipal support	\$2.9M—complete		
CMC-31	Intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway (Upper Township) – Roosevelt Boulevard Elevate roadway and ramps, which will first	County Engineering and NJ Turnpike Authority	No progress	X	2021_CapeMayCounty_020



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	require elevation of the Parkway bridge overpass.				
CMC-32	Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.	County Engineering	No progress	X	2021_CapeMayCounty_021
CMC-33	Install backup power to two stormwater pump stations at Madison Avenue and Grant Avenue in Cape May City. Work with the City to properly site the generator, which could be co-managed with the City to provide backup power for their station on Queen Street and Benton Avenue.	County Engineering and Municipality	No progress	X	2021_CapeMayCounty_022
CMC-34	Elevate Tuckahoe Road (CR-636) from Butter Road to CR-610.	County Engineering	No progress		
CMC-35	Work with the State DOT to address vulnerabilities on SR-50 along Cedar Swamp Creek.	State DOT	No progress		
CMC-36	Develop an engineering solution for severe flooding problems along NJ Route 50 and Hope Corson Road (CR-671).	State DOT with County and municipal support	Complete		
CMC-37	Upgrade storm drainage in Ocean City, which are currently not designed to handle a 25-year storm event.	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_023
CMC-38	Elevate Bay Avenue (CR-659) in floodprone areas (33rd to 28th, 20th to 18th, 9th to 2nd).	County Engineering with municipal support	No progress	X	2021_CapeMayCounty_024
CMC-39	Retrofit or replace county communications towers (Paris Grant Program towers) including those located on water towers, which are currently rated for winds less than Cat1 strength	CMC OEM & Engineering working with facility owners and municipal support	In Progress	X	2021_CapeMayCounty_025
CMC-40	Ensure adequate communication systems and emergency alert systems are available and reliable.	CMC OEM	Ongoing capability		



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMC-41	Work with municipalities, Verizon and other wireless tower owners to assess their vulnerability to wind damage.	CMC OEM & Engineering working with facility owners and municipal support	Ongoing capability		
CMC-42	Identify proper locations for and install water draw (siphon) stations to increase fire-fighting capabilities.	County Emergency Management with facility owners	No progress		
CMC-43	Conduct an engineering study to understand flooding issues and evaluate possible solutions at low areas along Court House-South Dennis Road (CR657) near Beaver Dam Road in Dennis Township.	County Engineering and Municipality	No progress	X	2021_CapeMayCounty_026
CMC-44	Conduct an engineering study to understand flooding issues and evaluate possible solutions along the entire length of Shunpike Road (CR620) in Middle Township.	County Engineering with municipal support	No progress	X	2021_CapeMayCounty_027
CMC-45	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Fishing Creek/Academy Road (CR639) in Lower Township.	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_028
CMC-46	Conduct an engineering study to understand flooding issues and evaluate possible solutions at low areas along Woodbine-Ocean View Road (CR550) in Dennis Township.	County Engineering with municipal support	No progress		
CMC-47	Conduct an engineering study to understand flooding issues and evaluate possible solutions at low areas along Tabernacle Road (CR647) in Lower Township.	County Engineering with municipal support	Completed		



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMC-48	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Fidler Road (CR638) in Dennis Township	County Engineering with municipal support	No progress	X	2021_CapeMayCounty_029
CMC-49	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Webster Avenue (CR638) in the Borough of Woodbine.	County Engineering with municipal support	Complete		
CMC-50	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Shunpike Road (CR644) in Lower Township	County Engineering with municipal support	No progress	X	2021_CapeMayCounty_030
CMC-51	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Railroad Avenue (CR626) in Middle Township	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_031
CMC-52	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Seashore Road (CR626) in Lower Township	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_032
CMC-53	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Dias Creek Road (CR612) in Middle Township	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_033
CMC-54	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Indian Trail Road (CR618) in Middle Township	County Engineering with municipal support	Complete		
CMC-55	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Goshen-	County Engineering with municipal support	In progress		2021_CapeMayCounty_034



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	Swainton Road (CR646) in Middle Township				
CMC-56	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Corsons Tavern Road (CR628) in Dennis Township.	County Engineering with municipal support	Completed		
CMC-57	Upgrade stormwater drains and outfalls along Beach Drive (CR603) in Cape May City.	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_006
CMC-58	Develop a stormwater master plan for West Cape May	County Engineering with municipal support	No progress	X	2021_CapeMayCounty_035
CMC-59	Support municipalities in either the development or update of local stormwater master plans	County Engineering with municipal support	Ongoing Capability		
CMC-60	Install shore protection along Ocean Drive (CR619) at Townsends Inlet in Avalon.	County Engineering/ Planning with municipal support	No progress	X	2021_CapeMayCounty_036
CMC-61	Install shore protection along Ocean Drive (CR619) at Corsons Inlet in Upper Township and Ocean City	County Engineering with municipal support	Complete		
CMC-62	Install shore/roadway protection along Ocean Drive (CR619) in Middle Township	County Engineering with municipal support	No progress	X	2021_CapeMayCounty_037
CMC-63	Construction of storm drain pipe to minimize flooding on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township.	County Engineering with municipal support	In progress	X	2021_CapeMayCounty_038
CMC-64	Construction of storm sewer system to alleviate flooding on Court House – South Dennis Road (CR657) from Village Drive to College Drive in Middle Township.	County Engineering with municipal support	Complete		
CMC-65	Work with those communities with significant wildfire risk to identify and implement wildfire mitigation activities, programs and initiatives, including community participation	County Fire Coordinator	Ongoing capability		



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	in the NFPA “Firewise” program				
CMC-66	Develop a five year Post Disaster Recovery Capital Improvement Plan for capital projects directly linked to recovery, mitigation or preparedness.	CMC Planning Department, Working with Engineering/DPW and OEM	No progress	X	2021_CapeMayCounty_039
CMC-67	Update the County Master Plan with a Community Resiliency Element that reviews the Land Use Plan Element and development standards against the vulnerability issues outlined in the SRPR and adopt as a Master Plan Element	CMC Planning Department, Working with Engineering/DPW and OEM	Ongoing capability		
CMC-68	Review zoning and land use regulations against the vulnerability issues outlined in this SRPR and develop amendments to anticipate necessary changes to height, bulk and setback requirements needed to improve resiliency based on recommendations in the Community Resiliency Element	CMC Planning Department	Ongoing capability		
CMC-69	Prepare, modify or replace plans for Local Neighborhoods or specific areas that were impacted by Sandy (i.e. Redevelopment or Rehabilitation Plans, Economic Development Plans and Strategies, Historic District Plans and Open Space/Recreation Plans).	CMC Planning with Municipalities	In progress	X	2021_CapeMayCounty_040
CMC-70	Review existing Permitting procedures to determine improvements for fast-tracking/streamlining for expediting projects directly related to recovery or mitigation and that are consistent	CMC Planning Department	Ongoing capability		



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	with adopted Design Standards				
CMC-71	Develop design standards to address the visual impact of mitigation measures such as elevating bulkheads, elevating buildings on foundations or pilings, etc. Such design standards might include requirements for skirting exposed pilings, parking under the lowest habitable floor, using exterior decking to stagger stairways to elevated first floor levels, etc.	CMC Planning Department	In progress	X	2021_CapeMayCounty_041
CMC-72	The long term impacts of Future Sea Level Rise should be projected and studied for Cape May County.	CMC Planning Department and OEM, working with NOAA/Rutgers	Ongoing capability		
CMC-73	Encourage communities to participate in the Getting To Resilience community planning evaluation tool from the Jacques Cousteau National Estuarine Research Reserve.	CMC Planning with Municipalities	Ongoing capability		
CMC-74	Support USACE Beach & Dune replenishment efforts.	USACE	Ongoing capability		
CMC-75	Obtain backup power to ensure continuity of operations for stormwater, wastewater, public potable water, pumping stations, etc.	CMC Engineering with Municipalities	Ongoing capability		
CMC-76	Install generators on buildings and facilities that operate as temporary shelters.	CMC Engineering, working with facility owners/operators	Ongoing capability		
CMC-77	34 th Street (CR623) in Ocean City - design and install stormwater pump station.	CMC Engineering Working with Ocean City	No progress	X	2021_CapeMayCounty_042
CMC-78	Install variable message signs on roadways that have a tendency to flood	CMC Engineering working with	In progress	X	2021_CapeMayCounty_043



Table 9.1-10. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
		local OEM, Police and Fire			
CMC-79	Upgrade and upsize stormwater outfall pipes in Strathmere section of Upper Township.	CMC Engineering Working with Upper Township	In progress	X	2021_CapeMayCounty_044
CMC-80	Upgrade and upsize stormwater outfall pipes in Sea Isle City. Due to the low lying nature of portions of Sea Isle City	CMC Engineering Working with Sea Isle City	In progress	X	2021_CapeMayCounty_045
CMC-81	Modify traffic signals on evacuation routes to be able to run off small portable generator	CMC Engineering; working with NJDOT and municipalities as necessary	In progress	X	2021_CapeMayCounty_046
CMC-82	Replace corrugated metal stormwater pipes throughout the County.	CMC Engineering; working with NJDOT and municipalities as necessary	Ongoing capability		
CMC-83	Install valves on the ends of outfall pipes to prevent tides from backing up through the stormwater drainage systems. Replace valves on outfall pipes that no longer function as intended.	CMC Engineering	Ongoing capability		

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

Cape May County participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. Cape May County participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.1-11 summarizes the comprehensive-range of specific mitigation initiatives Cape May County would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and



changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 criteria were used to evaluate each action, including an evaluation of the benefits and costs. For each new mitigation action, a numeric rank was assigned (-1, 0, or 1) for each of the 14 evaluation criteria. The results of this evaluation, in addition to input from the County, were then used to prioritize the mitigation initiatives as 'High', 'Medium', or 'Low.' Table 9.1-12 summarizes the evaluation of each mitigation initiative and the resulting priority, listed by Action Number.



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-CapeMay County-001	Saltwater Mitigation Initiative	<p>Problem: Cape May County has notable groundwater intrusion issues due to water withdrawals and the sensitivity of the underlying aquifer.</p> <p>Solution: The County MUA proposes to examine the feasibility of groundwater recharge projects that would entail County treatment plants pumping effluent into the aquifer to push out salt water and mitigate the cost and hazard of saltwater intrusion into the County's aquifer.</p>	Existing	Drought	1, 5, 6	Cape May County MUA; NJDEP; sewer operators	MUA funds; user fees	Reduced saltwater intrusion into County aquifers	High	Long Term	High	NSP	NR; PR
2021-CapeMay County-002	Public Health Capacity Building	<p>Problem: Cape May County's Health Department has faced significant challenges owing to COVID-19. Beginning in Fall 2021, the County's case rate climbed significantly upwards and is placing strain on the County's healthcare system. The County has identified a need to support mobilization as vaccines arrive.</p> <p>Solution: Support the integration of Public Health response with Emergency Management and take advantage of emerging technologies to implement life-saving projects and mitigation strategies for Cape May County Residents. The County will support the acquisition of PPE and vaccine distribution equipment.</p>	New	Disease Outbreak	1, 3, 4, 6	Cape May County Public Health; Cape May County Emergency Management	CDC; CDBG; HMGP	Reduced infection of COVID-19.	Medium	Short term (DOF)	High	EAP	PI; PR; ES
2021-CapeMay County-003	County Radio Acquisitions	<p>Problem: Cape May County law enforcement agencies recently upgraded to P-25 compliant radios. However, County EMS and fire departments have seen patchwork acquisition of P-25 radios due to the high cost of new radios.</p> <p>Solution: The County proposes to purchase 700 MHz radios and systems for Departments. This will allow Departments with fewer financial resources the ability to more quickly integrate into the new P-25 system. Additionally, the County proposes to undertake infrastructure improvements necessary to support the radio implementation.</p>	New	All hazard	1, 3, 4, 6	Cape May County Emergency Management	AFG; HMGP; County Funds; fire company funds	Enhanced inter-operability and communication	High	Short term (DOF)	High	EAP	ES
2021-CapeMay County-004	Townsend's Inlet Seawall Mitigation	<p>Problem: Ocean Drive (CR-619) crossing Townsend's Inlet and connecting Sea Isle City and Avalon is vulnerable to coastal erosion. The road is vulnerable to overtopping and waves crash over the existing seawall.</p> <p>Solution: In conjunction with the Army Corps, the County proposes to extend the pilecap on the seawall at Townsend's Inlet and elevate it 18 inches to minimize overwash.</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea	1, 5, 6	US Army Corps of Engineers (lead); Cape May County Public Works/County Engineer	US Army Corps; County Funds	Reduce overtopping from waves; prevent car damage; maintain use of roadway	\$1 million	Long-term	Medium	SIP	SP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
				Level Rise; Coastal Erosion									
2021-CapeMay County-005	CR-604/Beach Ave Flood Protection	Problem: The existing timber groin on Beach Ave (CR-604) in Cape May is deteriorated and needs to be replaced from Wilmington Avenue south. See also 2021-Cape May City-007 Solution: Replace the existing timber groin with a hardened structure that extends the existing promenade and offers an enhanced level of protection from storm surge and flooding events.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 5, 6	US Army Corps of Engineers; Cape May County Public Works/County Engineer; NJDEP; Cape May City	US Army Corps of Engineers; FEMA-FMA; County funds; City funds	Life safety- Reduced risk of overtopping and inundation from Atlantic Ocean	High	Short-term	High	SIP	SP
2021-CapeMay County-006	CR-604/Beach Ave Drainage Improvements	Problem: Beach Ave (CR-604) discharges stormwater runoff through outfalls to the Ocean. These outfalls fill with sand due to littoral drift, causing clogs and water backup that causes flooding and requires frequent maintenance. Solution: The County proposes to redirect flow of stormwater through the use of pumping stations so that stormwater does not discharge into the Ocean and is routed towards a more resilient location.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 5, 6	US Army Corps of Engineers; Cape May County Public Works/County Engineer; NJDEP; Cape May City	US Army Corps of Engineers; FEMA-FMA; County funds; City funds	Reduced flooding and maintenance costs pertaining to drainage	TBD	Long-term	Medium	SIP	SP
2021-CapeMay County-007 (Former CMC-10)	CR-621 Pacific Ave/Ocean Drive	Problem: CR-621 is a designated County evacuation route for the Wildwoods, including Diamond Beach in Lower Township. The Route traverses a low-lying stretch of marsh that is vulnerable to tidal and nuisance flooding. Additionally, the Route is served by several bridges that are beyond their useful lives. Solution: Replace three (3) bridges and elevate 2.7 miles of County Route 621 in Lower Township. The projects are currently in the concept development stage and have been submitted to NJDOT for preliminary engineering.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	County Engineering	County Funds; NJDOT; BRIC	High	Medium-High	Ongoing – this has been completed on some projects	Medium	SIP	PP
2021-CapeMay County-	CR-606/Sunset	Problem: Sunset Boulevard (CR-606) is a county road connecting Cape May Point and Cape May Point State Park to West Cape May, Cape May, and evacuation	Existing	Flood; Hurricane/ Tropical	1, 3, 4	County Engineering	County Funds;	Medium	High	Long Term DOF	Low	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
008 (Former CMC-11)	Boulevard	<p>routes to the north. The road is low-lying and has portions that can flood with water levels as little as one foot above high tide.</p> <p>Solution: Elevate ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM). Preliminary work has been completed for drainage and the project is in concept design.</p>		Storm; Nor'easter; Climate Change and Sea Level Rise			NJDOT; BRIC			(lower priority project – area is not as floodprone as many other areas)			
2021-CapeMay County-009 (Former CMC 12)	GSP Exit 4 Elevation	<p>Problem: Exit 4 of the Garden State Parkway is a major access point for the Wildwoods and Lower/Middle Townships. The eastern section of the intersection is in the Special Flood Hazard Area and is vulnerable to flooding at tide levels that are four feet above normal high tide.</p> <p>Solution: Intersection of State Route 47 and the Garden State Parkway (Middle Township) – Elevate Route 47 roadway and ramps, which will require elevation of the Parkway bridge overpass.</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	NJDOT and NJ Turnpike Authority	Transportation Trust Fund; NJTA Capital Funds	Medium	High	Long Term (not currently under active consideration by State)	Medium	SIP	PP
2021-CapeMay County-010 (Former CMC 14)	Glenwood Avenue (CR-614) Flood Mitigation	<p>Problem: CR-614 is a highly-flood vulnerable roadway located in West Wildwood. Much of the roadway begins to flood when tide levels exceed one foot above normal high tide. The road provides the only ingress and egress to/from West Wildwood.</p> <p>Solution: Address flooding on Glenwood Avenue (CR-614) through West Wildwood.</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	County Engineering and municipality	County funds; NJDOT; BRIC	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-011 (Former CMC 15)	GSP Exit 6 Flood Mitigation	<p>Problem: Though the Exit 6 interchange is on relatively high ground, in the future sea level rise will cause the interchange to be located in the Special Flood Hazard Area and be impacted by flood events.</p> <p>Solution: Intersection of State Route 147 and the Garden State Parkway (Middle Township) – Elevate Route 147 roadway and ramps, which will require elevation of the Parkway bridge overpass</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	State DOT and NJ Turnpike Authority	Transportation Trust Fund; NJTA Capital Funds	High	High	Long Term DOF	Medium	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-CapeMay County-012 (Former CMC 16)	Route 147 Elevation	Problem: Route 147 is on generally higher land, however, upon entering North Wildwood the roadbed elevation decreases. Flooding impacts to the roadway begin at tide levels that are one foot above typical high tides. Solution: Elevate tie-in section of State Route 147 into North Wildwood	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	State DOT and municipality	Transportation Trust Fund; NJDOT	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-013 (Former CMC 19)	Dennis Creek at Route 47 Flood Mitigation	Problem: An undersized retention basin results in flooding in the intersection of State Route 47 and the newly completed bridge over Dennis Creek. Solution: Rectify cause of flooding at the intersection of State Route 47 and the newly completed bridge over Dennis Creek. A channel was recently cut into the meadows to alleviate the flooding, but the issue is not fully addressed.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 6	State DOT	Transportation Trust Fund; NJDOT	High	Medium	In-progress	Medium	SIP	PP
2021-CapeMay County-014 (Former CMC 21)	CR-640/Coast Guard Shoreline Protection	Problem: Delaware Avenue/CR-640 connects the US Coast Guard Training Center to Cape May and evacuation routes to the north. Delaware Avenue is protected from Cape May Harbor by a rip-rap system that is subject to erosion and provides inconsistent protection. Solution: Install shoreline protection for CR-640 (entrance to Coast Guard Base) along the Cape May Harbor in the City of Cape May.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 3, 5	County Engineering and USACE	US Army Corps of Engineers; BRIC; USCG	High	High	In-progress	High	SIP	PP
2021-CapeMay County-015 (Former CMC 22)	Wildwoods CR-621 Flood Mitigation	Problem: Pacific Avenue is a low-lying major roadway in Wildwood Crest that is vulnerable to nuisance flooding. The corridor is being slated for a revitalization and upgrade of which drainage improvements will be a part. Solution: Upgrade stormwater drainage system along CR-621 and arterials in the Wildwoods.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 6	County Engineering, Municipalities, and USACE	County Funds; NJDOT	High	High	Long Term DOF	Medium	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-CapeMay County-016 (Former CMC 24)	GSP Exit 13 Flood Mitigation	Problem: The intersection of Avalon Boulevard and the Parkway (Exit 13) is entirely within the Special Flood Hazard Area. This is a vulnerability for evacuation for both travelers coming from Seven Mile Island as well as the mainland. Solution: Intersection of Avalon Boulevard and the Garden State Parkway (Middle Township) – Elevate Avalon Boulevard roadway and ramps, which will first require elevation of the Parkway bridge overpass.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	County Engineering with NJTA	Transportation Trust Fund; NJTA Capital Funds	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-017 (Former CMC 25)	Avalon Boulevard (CR-601) Elevation	Problem: Avalon Boulevard is entirely within the Special Flood Hazard Area between the Parkway and Seven Mile Island. As a major evacuation route, the road is vulnerable to flooding from surges three feet above high tide. The road carries more than 10,000 vehicles per day in the summertime. Solution: Elevate Avalon Boulevard from Parkway into Avalon proper (~2.5 miles).	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	County Engineering	County Funds; NJDOT; FMA	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-018 (Former CMC 29)	Seven Mile Island CR-619 Stormwater Improvements	Problem: Ocean Drive/Third Avenue in Avalon and Stone Harbor is a major thoroughfare connecting the communities and is the longest and busiest roadway in Avalon and Stone Harbor that is most vulnerable to flooding. Flooding impacts begin with a flood event bringing water levels just one foot above high tide. The removal of outfalls is currently in the design phase. Solution: Upgrade stormwater system on CR-619 through Stone Harbor and Avalon	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	County Engineering with municipalities	BRIC; local match	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-019 (Former CMC 31)	GSP Exit 25 Flood Mitigation	Problem: The intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway sees nearly 20,000 vehicles on average each day. The intersection is located in the Special Flood Hazard Area and begins seeing flooding impacts when water levels are at least three feet above high tide. Flooding in this intersection is a major vulnerability to a major evacuation route for Ocean City. Solution: Intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway (Upper Township) – Roosevelt Boulevard Elevate roadway and ramps, which will first require elevation of the Parkway bridge overpass.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	County Engineering and NJ Turnpike Authority	Transportation Trust Fund; NJTA Capital Funds	High	High	Long Term DOF	Medium	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-CapeMay County-020 (Former CMC 32)	Ocean City CR-623 Elevation	Problem: Roosevelt Boulevard (CR-623) is a major access road and evacuation route between Ocean City and the mainland. The road sees average daily traffic of between 10,000 and 25,000 vehicles depending on the season. The Boulevard sees flooding beginning at water levels that are two feet above high tide. Solution: Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	County Engineering	HMA grants; County funds; local match	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-021 (Former CMC 33)	Cape May City Stormwater Pump Station Resilience	Problem: Cape May is vulnerable to nuisance and stormwater flooding due to low-lying land elevations near Cape Island Creek and Frog Hollow. The City has installed stormwater pump stations to mitigate the flood risk. However, if the pumps fail due to severe storms, the stormwater pumps will not be able to function. Solution: Install backup power to two stormwater pump stations at Madison Avenue and Grant Avenue in Cape May City. Work with the City to properly site the generator, which could be co-managed with the City to provide backup power for their station on Queen Street and Benton Avenue.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	County Engineering and Municipality	BRIC/HM GP	High	M (not high \$ cost)	Long Term DOF	High	SIP	PP
2021-CapeMay County-022 (Former CMC 37)	Ocean City CR-619/CR-656 Upgrades	Problem: County routes in Ocean City (including West Avenue and Bay Avenue) are low-lying and vulnerable to flooding. Ocean City has undertaken upgrades to some low-lying areas to address stormwater flooding, though these projects require integration. Solution: Upgrade storm drainage in Ocean City to meet the current 25-year design storm, inclusive of larger drainage pipes.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 5, 6	County Engineering with municipal support	City; County Funds; HMA Grant	High	High	In Progress	Medium	SIP	PP
2021-CapeMay County-023 (Former CMC 38)	Bay Avenue (CR-659) Elevation	Problem: Bay Avenue is a low-lying thoroughfare and County route in Ocean City. Various sections of the roadway are particularly low-lying and vulnerable to flooding at tidal levels in excess of one foot above high tide. Solution: Elevate Bay Avenue (CR-659) to a congruent height (at least 3 ft NAVD88) in floodprone areas (33rd to 28th, 20th to 18th, 9th to 2nd).	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	County Engineering with municipal support	City; County Funds; HMA Grant	High	High	Long Term DOF	Medium	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-CapeMay County-024 (Former CMC 39)	Communication Tower Mitigation	Problem: The County is reliant upon several communication towers that are vulnerable to wind damage. The loss of the towers would hinder communication during emergency situations. Solution: Retrofit or replace county communications towers (Paris Grant Program towers) including those located on water towers, which are currently rated for winds less than Cat1 strength	Existing	Hurricane/ Tropical Storm; Nor'easter; Severe Storm; Severe Winter Weather	1, 3, 4, 6	CMC OEM & Engineering working with facility owners and municipal support	County and Paris Grant funds	High	High	In progress	High	SIP	PP; ES
2021-CapeMay County-025 (Former CMC 43)	CR-657 Beaver Dam Flood Assessment	Problem: Certain portions of CR-657 near Beaver Dam Road are vulnerable to flooding owing to groundwater/high water table issues. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions at low areas along Court House-South Dennis Road (CR657) near Beaver Dam Road in Dennis Township.	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering and Municipality	County and Local Funding	Medium - High	Medium - High	Medium Term DOF	High	LPR	PR
2021-CapeMay County-026 (Former CMC 44)	Shunpike Road (CR620) Flood Mitigation	Problem: Shunpike Road in Middle Township is vulnerable to stormwater flooding from inland creeks and waterways. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along the entire length of Shunpike Road (CR620) in Middle Township.	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	Long Term DOF	High	LPR	PR
2021-CapeMay County-027 (Former CMC 45)	Fishing Creek/Academy Road (CR639) Flood Mitigation	Problem: Fishing Creek/Academy Road (CR-639) is a road running through uplands and wetlands in mainland Lower Township. The road experiences nuisance stormwater flooding. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Fishing Creek/Academy Road (CR639) in Lower Township.	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	In progress – 1% complete	High	LPR	PR
2021-CapeMay County-028 (Former CMC 48)	Fidler Road (CR638) Drainage Mitigation	Problem: Fidler Road experiences localized drainage issues and requires repaving. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Fidler Road (CR638) in Dennis Township. Once solutions are identified, implement solutions (apply for and obtain grant funding if needed).	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	Long Term DOF and permitting issues	High	LPR	PR
2021-CapeMay	Shunpike Road	Problem: Shunpike Road, a county road, in Lower Township runs through the mainland portion of Lower	Existing	Severe Weather,	1, 3, 4, 5, 6	County Engineering		Medium	Medium		High	LPR	PR



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
County-029 (Former CMC 50)	(CR644) Flood Mitigation	Township through both uplands and wooded wetlands. The road experiences flooding during rainstorms. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Shunpike Road (CR644) in Lower Township		Flood; Hurricane and Tropical Storm		with municipal support	County and Local Funding			Long Term DOF			
2021-CapeMay County-030 (Former CMC 51)	Railroad Avenue (CR626) Flood Mitigation	Problem: CR-626 runs through the upland portion of Middle Township near Rio Grande. The road experiences flooding issues owing to stormwater and drainage. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Railroad Avenue (CR626) in Middle Township	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	Long Term DOF	High	LPR	PR
2021-CapeMay County-031 (Former CMC 52)	Seashore Road (CR626) Flood Mitigation	Problem: Seashore Road runs from Middle Township to West Cape May through Middle Township. The road is predominantly located along uplands but experiences nuisance stormwater flooding. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Seashore Road (CR626) in Lower Township	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	Long Term DOF	High	LPR	PR
2021-CapeMay County-032 (Former CMC 53)	Dias Creek Road (CR612) Flood Mitigation	Problem: Dias Creek Road runs between Route 47 and Cape May Courthouse through wetlands, forest, and low-density residential areas. The area is subject to stormwater flooding. Flooding for one side of the road has been mitigated. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Dias Creek Road (CR612) in Middle Township	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	Long Term DOF	High	LPR	PR
2021-CapeMay County-033 (Former CMC 55)	Goshen-Swainton Road (CR646) Flood Mitigation	Problem: Goshen-Swainton Road (CR-646) runs east-west across Middle Township connecting the neighborhoods of Goshen and Swainton. The road traverses the Cape May National Wildlife Refuge and is impacted by stormwater flooding. Solution: Conduct an engineering study to understand flooding issues and evaluate possible solutions along Goshen-Swainton Road (CR646) in Middle Township	Existing	Severe Weather, Flood; Hurricane and Tropical Storm	1, 3, 4, 5, 6	County Engineering with municipal support	County and Local Funding	Medium	Medium	Long Term DOF	High	LPR	PR
2021-CapeMay	West Cape May	Problem: The Perry Street (CR-633) outfall in West Cape May receives and conveys the Borough's	Existing	Flood; Hurricane/	1, 3, 4, 6	County Engineering;		Medium-decreased	Low	Short Term	High	LPR	PR



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
County-034 (Former CMC 58)	Drainage Improvements	drainage. The outfall requires reconfiguration due to the volume of water, causing the potential for backups. Solution: Develop a stormwater master plan for West Cape May		Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		West Cape May Borough	County and Local Funding	nuisance flooding					
2021-CapeMay County-035 (Former CMC 60)	Ocean Drive (CR619) Shore Protection at Townsends Inlet	Problem: Townsends Inlet in Avalon experiences wave overtopping due to a lack of beach fill and protective measures. This threatens traveling vehicles and the integrity of the roadway. Solution: Install shore protection along Ocean Drive (CR619) at Townsends Inlet in Avalon.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 3, 4, 6	County Engineering/Planning with municipal support	County and local funding	Medium	Low	In progress – full implementation on DOF	High	SIP	PP
2021-CapeMay County-036 (Former CMC 62)	Ocean Drive (CR619) Flood Mitigation at Nummy Island	Problem: Ocean Drive runs for just over a mile in Middle Township between Stone Harbor and Grassy Sound. The road traverses a low-lying marsh island and can be impacted by tides between three and four feet above typical high tide. Solution: Install shore/roadway protection along Ocean Drive (CR619) in Middle Township	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 3, 4, 6	County Engineering with municipal support	HMA Grants, County and Local Funding	High	High	Long Term DOF	High	SIP	PP
2021-CapeMay County-037 (Former CMC 63)	Goshen Road (CR615) Drainage Improvements	Problem: Goshen Road (CR-615) traverses through forested uplands and is vulnerable to stormwater flooding along a portion of its route in Middle Township. Solution: Construction of storm drain pipe to minimize flooding on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township.	New & Existing	Flood, Severe Weather; Hurricane and Tropical Storm	1, 3, 4, 6	County Engineering with municipal support	County funds	High	Medium	In progress – full implementation on DOF	High	SIP	PP
2021-CapeMay	Capital Improve	Problem: Cape May County does not have specific capital planning for post disaster recovery and	N/A	All Hazards	1, 3, 4, 6	CMC Planning	NJDCA Grant	Medium	Low	Short Term	High	LPR	PR



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
County-038 (Former CMC 66)	ment Plan Develop ment	improvements. A set-aside capital budgeting project for resilience projects can assist the County with prioritizing and funding capital projects addressing flooding and climate change. Solution: Develop a five-year Post Disaster Recovery Capital Improvement Plan for capital projects directly linked to recovery, mitigation or preparedness.				Department, Working with Engineering/ DPW and OEM							
2021-CapeMay County-039 (CMC-69)	Neighborhood Adaptation Planning	Problem: In the wake of flooding event and local economic changes, various rehabilitation, redevelopment areas, historic districts, open space plans, and other planning documents have been updated and re-examined. Solution: Assist with the preparation of planning products for neighborhoods, parks, and local areas.	Existing	Severe Storm; Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 2, 3, 4, 5, 6	Cape May County Planning Department; Municipal partners	County funds	Enhanced planning for targeted neighborhoods and customized solutions for resilience and adaptation.	Low	Short-term	Medium	LPR	PR; NR
2021-CapeMay County-040 (Former CMC-71)	Cape May County Design Standards	Problem: Cape May County's ecologically valuable landscape and historically significant streetscapes are identified for preservation in the face of increased flooding risk. In order to mitigate future damage to flood hazards while maintaining the ecological and aesthetic integrity of the County, design standards for addressing the visual impact of flood resilience measures is needed. Solution: Develop design standards consistent with the County's landscapes and Creative Placemaking Plan to alleviate the impact of elevating bulkheads, buildings, and other floodproofing measures.	Existing	Severe Storm; Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	Cape May County Planning Department	County funds	Enhanced aesthetics for flood resilience initiatives	Low	Short-term	Medium	LPR	PR; NR; CR
2021-CapeMay County-041 (Former CMC-77)	34 th Street Stormwater Pump Station	Problem: 34 th Street/Roosevelt Boulevard (CR-623) is a major thoroughfare into Ocean City and also an evacuation route. The AADT on 34 th Street ranges from nearly 12,500 vehicles in the off-season to nearly 25,000 vehicles in the summer months. The route is vulnerable to stormwater and tidal flooding owing to the low-lying elevation of the roadway and the lack of a structural barrier to flooding along Roosevelt Boulevard in the wetlands section.	Existing	Severe Storm; Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change	1, 3, 4, 6	Cape May County Public Works/County Engineer; City of Ocean City	HMGP; County/local funds; FMA	Life safety-maintenance of evacuation route utility	High	Long Term DOF	Medium	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: The County proposes to install a stormwater pump station serving 34th Street to alleviate nuisance flooding on the road and maintain the utility of the evacuation route during flooding events.		and Sea Level Rise									
2021-CapeMay County-042 (Former CMC-78)	Road Flooding Warning Signs	<p>Problem: County roadways, particularly on the barrier islands, frequently experience flooding due to a combination of stormwater and tidal flooding. Motorists (particularly the County's part-time resident and visitors) may not be aware of flooded roadways and risk life safety and property damage when crossing flooded roadways.</p> <p>Solution: The County proposes to install variable message signs on roadways. Communication messages and system setup will be coordinated with OEM, police, fire departments, and public works to ensure that messages are useful and updated timely.</p>	Existing	Severe Storm; Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 2, 3, 4	Cape May County Public Works/County Engineer; Local agencies; Local fire departments	HMGP; County/local funds	Life safety-awareness of flooding	Low-Medium (per installation)	Short Term	Medium	SIP	PP; ES
2021-CapeMay County-043 (Former CMC-79)	Strathmere Drainage Improvements	<p>Problem: The Strathmere section of Upper Township is a low-lying barrier island community. Commonwealth Ave/CR-619 is the major north-south route through Strathmere and connects the neighborhood to evacuation routes to the north in Ocean City and to the South in Sea Isle City. When Commonwealth Avenue is flooded, evacuation from the neighborhood is impeded. The Avenue will continue to experience inhibited access during rain and tidal events. Stormwater drainage was upgraded but outfall work has not yet been completed.</p> <p>Solution: The County, in conjunction with Upper Township, proposes improvements to Commonwealth Avenue to alleviate drainage issues and reduce flooding. Proposed upgrades include upgrading, upsizing, and redirecting stormwater outfall pipes to allow for the enhanced drainage of stormwater. Stormwater pump stations will be considered for feasibility.</p>	Existing	Severe Storm; Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	CMC Engineering Working with Upper Township	County	High	High	Long Term DOF	Medium	SIP	PP
2021-CapeMay County-044 (Former CMC-80)	Sea Isle City Drainage Improvements	Problem: CR-619 (Landis Avenue) and CR-625 (JFK Boulevard) are major thoroughfares in Sea Isle City and carry stormwater drainage infrastructure. The City experiences frequent nuisance flooding on these streets. Stormwater drainage was upgraded but outfall work has not yet been completed.	Existing	Severe Storm; Flood; Hurricane/ Tropical Storm;	1, 3, 4, 6	CMC Engineering working with Sea Isle City	County Funds; BRIC	Reduced disruption due to stormwater flooding	Medium	Long Term DOF	Medium	SIP	PP



Table 9.1-11. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: The County proposes to undertake drainage improvements to these roadways and coordinate with Sea Isle City to facilitate drainage in the vicinity. Outfall pipes require upgrading and upsizing. Stormwater pump stations will be considered.		Nor'easter; Climate Change and Sea Level Rise									
2021-CapeMay County-045 (Former CMC-81)	Traffic Signal Outage Mitigation	Problem: Various traffic signals along County evacuation routes suffer outages during severe storms. Non-functional traffic signals increase the potential for accidents. Safe traffic control during storm events is pivotal for potential evacuations. Solution: The County proposes to retrofit existing traffic signals to protect life safety during outage incidents.	Existing	Severe Storm	1, 3, 4, 6	CMC Engineering; working with NJDOT and municipalities as necessary Municipal partners	County funds;	Mitigated life safety threats owing to hazard	Low-Medium	Long Term DOF	Medium	SIP	PP; PI; ES
2021-CapeMay County-046	CMCMUA – OCWTF Seawall	Problem: The MUA-owned Ocean City Wastewater Treatment Facility located at 45th and Simpson Ave in Ocean City treats all of the wastewater from the island of Ocean City, NJ. It is a critical piece of infrastructure that currently is not hardened against a major flood. Furthermore, it resides directly adjacent to the intercostal waterway and just two city blocks from the Atlantic Ocean. In the event of a major flood caused by hurricane, nor'easter storm or the like that resulted in the facility going completely underwater, the facility's ability to treat wastewater from the island of Ocean City would be compromised. In the worst case scenario, the facility could be out of service for several weeks. Solution: The construction of a sea wall around the perimeter of the Ocean City Wastewater Facility would mitigate the catastrophic flood risk.	Existing	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	Cape May County MUA	County Funds, FMA, BRIC	Eliminate or reduce risk of loss of the Wastewater Treatment facility essential to public health of Ocean City.	\$7.5 M	3 Years	High	SIP	PP

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.



Mitigation Category:

- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.1-12. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-CapeMayCounty-001	Saltwater Mitigation Initiative	1	1	1	1	1	1	0	1	1	1	0	0	1	0	10	High ⚠
2021-CapeMayCounty-002	Public Health Capacity Building	1	1	1	1	1	1	0	1	1	1	0	1	1	1	12	High
2021-CapeMayCounty-003	County Radio Acquisitions	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2021-CapeMayCounty-004	Townsend's Inlet Seawall Mitigation	1	1	0	1	1	1	0	-1	0	0	1	1	1	0	7	Medium
2021-CapeMayCounty-005	CR-604/Beach Ave Flood Protection	1	1	1	1	1	1	0	-1	1	1	1	1	1	1	11	High
2021-CapeMayCounty-006	CR-604/Beach Ave Drainage Improvements	1	0	0	1	1	1	0	0	0	0	1	0	1	1	8	Medium
2021-CapeMayCounty-007 (Former CMC-10)	CR-621 Pacific Ave/Ocean Drive	1	1	1	1	1	1	0	-1	1	1	1	1	1	1	11	High
2021-CapeMayCounty-008 (Former CMC-11)	CR-606/Sunset Boulevard	1	1	0	1	0	0	0	-1	1	0	1	0	1	1	6	Medium
2021-CapeMayCounty-009 (Former CMC 12)	GSP Exit 4 Elevation	1	1	0	1	0	1	0	0	1	0	1	0	1	0	7	Medium
2021-CapeMayCounty-010 (Former CMC 14)	Glenwood Avenue (CR-614) Flood Mitigation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-CapeMayCounty-011 (Former CMC 15)	GSP Exit 6 Flood Mitigation	1	1	0	1	0	1	0	0	1	0	1	0	1	0	7	Medium
2021-CapeMayCounty-012 (Former CMC 16)	Route 147 Elevation	1	1	0	1	0	0	0	-1	1	0	1	0	1	1	6	Medium



Table 9.1-12. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-CapeMayCounty-013 (Former CMC 19)	Dennis Creek at Route 47 Flood Mitigation	1	1	0	1	0	1	0	-1	1	0	1	1	1	0	7	Medium
2021-CapeMayCounty-014 (Former CMC 21)	CR-640/Coast Guard Shoreline Protection	1	1	1	1	1	1	-1	-1	1	1	1	1	1	1	12	High
2021-CapeMayCounty-015 (Former CMC 22)	Wildwoods CR-621 Flood Mitigation.	1	1	0	1	0	1	0	-1	1	0	1	1	1	0	7	Medium
2021-CapeMayCounty-016 (Former CMC 24)	GSP Exit 13 Flood Mitigation	1	1	0	1	0	1	0	0	1	0	1	0	1	0	7	Medium
2021-CapeMayCounty-017 (Former CMC 25)	Avalon Boulevard (CR-601) Elevation	1	1	0	1	0	1	0	-1	1	0	1	1	1	0	7	Medium
2021-CapeMayCounty-018 (Former CMC 29)	Seven Mile Island CR-619 Stormwater Improvements	1	0	0	1	1	1	0	0	0	0	1	0	1	1	8	Medium
2021-CapeMayCounty-019 (Former CMC 31)	GSP Exit 25 Flood Mitigation	1	1	0	1	0	1	0	0	1	0	1	0	1	0	7	Medium
2021-CapeMayCounty-020 (Former CMC 32)	Ocean City CR-623 Elevation	1	1	0	1	0	1	0	-1	1	0	1	1	1	0	7	Medium
2021-CapeMayCounty-021 (Former CMC 33)	Cape May City Stormwater Pump Station Resilience	1	0	0	1	0	1	0	1	1	1	1	0	1	1	9	High
2021-CapeMayCounty-022 (Former CMC 37)	Ocean City CR-619/CR-656 Upgrades	0	0	0	1	0	1	0	1	1	1	1	0	1	1	8	Medium
2021-CapeMayCounty-	Bay Avenue (CR-659) Elevation	1	1	0	1	0	1	0	-1	1	0	1	1	1	0	7	Medium



Table 9.1-12. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
023 (Former CMC 38)																	
2021-CapeMayCounty-024 (Former CMC 39)	Retrofit or replace county communications towers (Paris Grant Program towers) including those located on water towers, which are currently rated for winds less than Cat1 strength	1	1	1	1	0	1	0	0	1	1	1	1	1	0	10	High
2021-CapeMayCounty-025 (Former CMC 43)	Communication Tower Mitigation	1	1	1	1	0	1	0	1	0	1	1	1	1	1	11	High
2021-CapeMayCounty-026 (Former CMC 44)	Shunpike Road (CR620) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High
2021-CapeMayCounty-027 (Former CMC 45)	Fishing Creek/Academy Road (CR639) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	1	1	1	11	High
2021-CapeMayCounty-028 (Former CMC 48)	Fidler Road (CR638) Drainage Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High
2021-CapeMayCounty-029 (Former CMC 50)	Shunpike Road (CR644) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High
2021-CapeMayCounty-030 (Former CMC 51)	Railroad Avenue (CR626) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High
2021-CapeMayCounty-031 (Former CMC 52)	Seashore Road (CR626) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High
2021-CapeMayCounty-032 (Former CMC 53)	Dias Creek Road (CR612) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High
2021-CapeMayCounty-	Goshen-Swainton Road (CR646) Flood Mitigation	1	1	1	1	0	1	0	1	0	1	1	0	1	1	10	High



Table 9.1-12. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
033 (Former CMC 55)																	
2021- CapeMayCounty- 034 (Former CMC 58)	West Cape May Drainage Improvements	0	0	0	1	1	1	0	1	1	1	1	1	1	1	10	High
2021- CapeMayCounty- 035 (Former CMC 60)	Ocean Drive (CR619) Shore Protection at Townsends Inlet	1	1	0	1	1	1	0	0	1	1	1	1	1	1	11	High
2021- CapeMayCounty- 036 (Former CMC 62)	Ocean Drive (CR619) Flood Mitigation at Nummy Island	1	1	0	1	1	1	0	0	1	1	1	0	1	0	9	High
2021- CapeMayCounty- 037 (Former CMC 63)	Goshen Road (CR615) Drainage Improvements	0	0	0	1	1	1	0	1	1	1	1	1	1	1	10	High
2021- CapeMayCounty- 038 (Former CMC 66)	Capital Improvement Plan Development	1	1	1	1	0	0	0	1	1	1	1	0	1	0	9	High
2021- CapeMayCounty- 039 (CMC-69)	Neighborhood Adaptation Planning	1	1	1	1	0	0	0	1	1	0	1	0	1	0	8	Medium
2021- CapeMayCounty- 040 (Former CMC-71)	Cape May County Design Standards	0	0	0	1	1	1	1	1	1	0	1	0	1	0	8	Medium
2021- CapeMayCounty- 041 (Former CMC-77)	34 th Street Stormwater Pump Station	0	0	0	1	0	1	0	1	1	1	1	0	1	1	8	Medium
2021- CapeMayCounty- 042 (Former CMC-78)	Road Flooding Warning Signs	1	1	1	1	1	0	0	0	1	0	1	0	0	0	8	Medium
2021- CapeMayCounty- 043 (Former CMC-79)	Strathmere Drainage Improvements	0	0	0	1	0	1	0	1	1	1	1	0	1	1	8	Medium



Table 9.1-12. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-CapeMayCounty-044(Former CMC-80)	Sea Isle City Drainage Improvements	0	0	0	1	0	1	0	1	1	1	1	0	1	1	8	Medium
2021-CapeMayCounty-045 (Former CMC-81)	Traffic Signal Outage Mitigation	1	1	1	1	1	0	0	0	1	0	1	0	0	0	8	Medium
2021-CapeMayCounty-046	CMCMUA – OCWTF Seawall	1	1	1	1	1	1	1	1	1	1	1	0	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the County and an action that the County would like to complete as soon as funding is received.



Table 9.1-13. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise	X	X	X	X	X	X	X	X
Coastal Erosion	X	X	X	X	X	X		X
Disease Outbreak (new)	X		X		X			X
Drought (new)	X		X	X	X			X
Flood	X	X	X	X	X	X	X	X
Hurricane	X	X	X	X	X	X	X	X
Nor'Easter	X	X	X	X	X	X	X	X
Severe Weather	X	X	X	X	X	X	X	X
Severe Winter Weather	X		X		X			X
Tsunami	X		X		X			X
Wildfire	X		X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Action Worksheet			
Project Name:	Saltwater Mitigation Initiative		
Project Number:	2021-CapeMayCounty-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Drought		
Description of the Problem:	Cape May County has notable groundwater intrusion issues due to water withdrawals and the sensitivity of the underlying aquifer.		
Action or Project Intended for Implementation			
Description of the Solution:	The County MUA proposes to examine the feasibility of (and potentially implement) a groundwater recharge project that would entail County treatment plants pumping effluent into the aquifer to push out salt water and mitigate the cost and hazard of saltwater intrusion into the County's aquifer.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduced saltwater intrusion into County aquifers
Useful Life:	50 Years	Goals Met:	1, 5, 6
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	10 Years
Estimated Time Required for Project Implementation:	Long Term	Potential Funding Sources:	MUA funds; user fees
Responsible Organization:	Cape May County MUA; NJDEP; sewer operators	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Water Reclamation	High	Does not displace intruded water
	Groundwater Recharge	High	Potential Ecological benefits
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Saltwater Mitigation Initiative	
Project Number:	2021-CapeMayCounty-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Continues supply of potable water
Property Protection	1	Protects county resources
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	Drought
Timeline	0	Long Term
Agency Champion	1	Cape May County MUA; NJDEP; sewer operators
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Public Health Capacity Building		
Project Number:	2021-CapeMayCounty-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Disease Outbreak		
Description of the Problem:	Cape May County's Health Department has faced significant challenges owing to COVID-19. Beginning in Fall 2020, the County's case rate climbed significantly upwards and is placing strain on the County's healthcare system. The County has identified a need to support mobilization as vaccines arrive.		
Action or Project Intended for Implementation			
Description of the Solution:	Support the integration of Public Health response with Emergency Management and take advantage of emerging technologies to implement life-saving projects and mitigation strategies for Cape May County Residents. The County will support the acquisition of PPE and vaccine distribution equipment.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduced infection of COVID-19.
Useful Life:	TBD	Goals Met:	1, 3, 4, 6
Estimated Cost:	Medium	Mitigation Action Type:	Education and Awareness Programs
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Immediate
Estimated Time Required for Project Implementation:	Short Term (DOF)	Potential Funding Sources:	CDC; CDBG; HMGP
Responsible Organization:	Cape May County Public Health; Cape May County Emergency Management	Local Planning Mechanisms to be Used in Implementation if any:	Public Health Plan; Emergency Management Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Municipal Coordination	N/A	Not enough capacity at municipal level
	County Pandemic Mitigation	N/A	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Public Health Capacity Building	
Project Number:	2021-CapeMayCounty-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Enhanced protection from COVID-19 and diseases
Property Protection	1	
Cost-Effectiveness	1	Preventative treatment is typically less costly than treatment after infection
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	Disease Outbreak
Timeline	1	Short Term (DOF)
Agency Champion	1	Cape May County Public Health; Cape May County Emergency Management
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	County Radio Acquisitions		
Project Number:	2021-CapeMayCounty-003		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
Description of the Problem:	Cape May County law enforcement agencies recently upgraded to P-25 compliant radios. However, County EMS and fire departments have seen patchwork acquisition of P-25 radios due to the high cost of new radios.		
Action or Project Intended for Implementation			
Description of the Solution:	The County proposes to purchase 700 MHz radios and systems for Departments. This will allow Departments with fewer financial resources the ability to more quickly integrate into the new P-25 system. Additionally, the County proposes to undertake infrastructure improvements necessary to support the radio implementation.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced inter-operability and communication
Useful Life:	10 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Education and Awareness Programs
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Immediate
Estimated Time Required for Project Implementation:	Short term (DOF)	Potential Funding Sources:	AFG; HMGP; County Funds; fire company funds
Responsible Organization:	Cape May County Emergency Management	Local Planning Mechanisms to be Used in Implementation if any:	Emergency Management Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Decreased operability
	New radio acquisition, no assistance	TBD	Enhanced operability with significant outlay
	New radio acquisition through grant	TBD	Enhanced operability with lessened outlay
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	County Radio Acquisitions	
Project Number:	2021-CapeMayCounty-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Enhanced operability for first responders
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	Project will enhance technical capabilities
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All Hazards
Timeline	1	Short term (DOF)
Agency Champion	1	Cape May County Emergency Management
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Townsend's Inlet Seawall Mitigation		
Project Number:	2021-CapeMayCounty-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Erosion		
Description of the Problem:	Ocean Drive (CR-619) crossing Townsend's Inlet and connecting Sea Isle City and Avalon is vulnerable to coastal erosion. The road is vulnerable to overtopping and waves crash over the existing seawall.		
Action or Project Intended for Implementation			
Description of the Solution:	In conjunction with the Army Corps, the County proposes to extend the pilecap on the seawall at Townsend's Inlet and elevate it 18 inches to minimize overwash.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduce overtopping from waves; prevent car damage; maintain use of roadway
Useful Life:	30 years	Goals Met:	1, 5, 6
Estimated Cost:	\$1 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	5 Years
Estimated Time Required for Project Implementation:	Long-term	Potential Funding Sources:	US Army Corps; County Funds
Responsible Organization:	US Army Corps of Engineers (lead); Cape May County Public Works/County Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road floodproofing	High	Cost prohibitive
	Extend pilecap/elevation	\$1M	Mitigated overwash risk
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Townsend's Inlet Seawall Mitigation	
Project Number:	2021-CapeMayCounty-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project will protect roadway
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential adverse impacts
Social	0	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Erosion
Timeline	1	Long-term
Agency Champion	1	US Army Corps of Engineers (lead); Cape May County Public Works/County Engineer
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	CR-604/Beach Ave Flood Protection		
Project Number:	2021-CapeMayCounty-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	The existing timber groin on Beach Ave (CR-604) in Cape May is deteriorated and needs to be replaced from Wilmington Avenue south.		
Action or Project Intended for Implementation			
Description of the Solution:	Replace the existing timber groin with a hardened structure that extends the existing promenade and offers an enhanced level of protection from storm surge and flooding events.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	500 year	Estimated Benefits (losses avoided):	Life safety- Reduced risk of overtopping and inundation from Atlantic Ocean
Useful Life:	40 years	Goals Met:	1, 5, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	5 years
Estimated Time Required for Project Implementation:	Short-term	Potential Funding Sources:	US Army Corps of Engineers; FEMA-FMA; County funds; City funds
Responsible Organization:	US Army Corps of Engineers; Cape May County Public Works/County Engineer; NJDEP; Cape May City	Local Planning Mechanisms to be Used in Implementation if any:	Cape May County Seawall Flood Mitigation Plan; Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Flooding vulnerability remains
	Replaced with green infrastructure/timber	High	Structure may not protect landward properties
	Sewall extension	High	Vulnerability mitigated
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-604/Beach Ave Flood Protection	
Project Number:	2021-CapeMayCounty-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Groin will protect landward properties
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential adverse environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion
Timeline	1	Short-term
Agency Champion	1	US Army Corps of Engineers; Cape May County Public Works/County Engineer; NJDEP; Cape May City
Other Community Objectives	1	Project aligns with City goals
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	CR-604/Beach Ave Drainage Improvements		
Project Number:	2021-CapeMayCounty-006		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	Beach Ave (CR-604) discharges stormwater runoff through outfalls to the Ocean. These outfalls fill with sand due to littoral drift, causing clogs and water backup that causes flooding and requires frequent maintenance.		
Action or Project Intended for Implementation			
Description of the Solution:	The County proposes to redirect flow of stormwater through the use of pumping stations so that stormwater does not discharge into the Ocean and is routed towards a more resilient location.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduced flooding and maintenance costs
Useful Life:	25 years	Goals Met:	1, 5, 6
Estimated Cost:	TBD	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	5 Years
Estimated Time Required for Project Implementation:	Long-term	Potential Funding Sources:	US Army Corps of Engineers; FEMA-FMA; County funds; City funds
Responsible Organization:	US Army Corps of Engineers; Cape May County Public Works/County Engineer; NJDEP; Cape May City	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan, Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Outfall extension	Medium	Permitting issues; sand backup not mitigated
	Pump Station	TBD	Changes to infrastructure facilitate drainage
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-604/Beach Ave Drainage Improvements	
Project Number:	2021-CapeMayCounty-006	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	Project is politically feasible
Legal	1	
Fiscal	0	Project requires funding support
Environmental	0	
Social	0	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion
Timeline	0	Long-term
Agency Champion	1	US Army Corps of Engineers; Cape May County Public Works/County Engineer; NJDEP; Cape May City
Other Community Objectives	1	Aligns with City initiatives
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	CR-621 Pacific Ave/Ocean Drive		
Project Number:	2021-CapeMayCounty-007 (Former CMC-10)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	CR-621 is a designated County evacuation route for the Wildwoods, including Diamond Beach in Lower Township. The Route traverses a low-lying stretch of marsh that is vulnerable to tidal and nuisance flooding. Additionally, the Route is served by several bridges that are beyond their useful lives.		
Action or Project Intended for Implementation			
Description of the Solution:	Replace three (3) bridges and elevate 2.7 miles of County Route 621 in Lower Township. The projects are currently in the concept development stage and have been submitted to NJDOT for preliminary engineering.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	100-year	Estimated Benefits (losses avoided):	High
Useful Life:	70 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	Medium-High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	5 Years
Estimated Time Required for Project Implementation:	Ongoing – this has been completed on some projects	Potential Funding Sources:	County Funds; NJDOT; BRIC
Responsible Organization:	County Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Bridge/Road Removal	Low	Decreased access
	Elevation/Reconstruction	High	Continued access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-621 Pacific Ave/Ocean Drive	
Project Number:	2021-CapeMayCounty-007 (Former CMC-10)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Protects County infrastructure
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support exists
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	1	Ongoing – this has been completed on some projects
Agency Champion	1	County Engineering
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	CR-606/Sunset Boulevard		
Project Number:	2021-CapeMayCounty-008 (Former CMC-11)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Sunset Boulevard (CR-606) is a county road connecting Cape May Point and Cape May Point State Park to West Cape May, Cape May, and evacuation routes to the north. The road is low-lying and has portions that can flood with water levels as little as one foot above high tide.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM). Preliminary work has been completed for drainage and the project is in concept design.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100-year	Estimated Benefits (losses avoided):	Medium
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Low	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF (lower priority project – area is not as floodprone as many other areas)	Potential Funding Sources:	County Funds; NJDOT; BRIC
Responsible Organization:	County Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road Closure	Low	No access to Cape May Point
	Elevation	High	Enhanced resiliency
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-606/Sunset Boulevard	
Project Number:	2021-CapeMayCounty-008 (Former CMC-11)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports primary evacuation route for West Cape May/Cape May Point/Lower Township
Property Protection	1	Protects County infrastructure
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	0	
Legal	0	
Fiscal	0	Project requires funding support
Environmental	-1	Potential environmental impacts
Social	1	Prevents social disruption
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF (lower priority project – area is not as floodprone as many other areas)
Agency Champion	1	County Engineering
Other Community Objectives	1	Supports municipal objectives
Total	6	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	GSP Exit 4 Elevation		
Project Number:	2021-CapeMayCounty-009 (Former CMC 12)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Exit 4 of the Garden State Parkway is a major access point for the Wildwoods and Lower/Middle Townships. The eastern section of the intersection is in the Special Flood Hazard Area and is vulnerable to flooding at tide levels that are four feet above normal high tide.		
Action or Project Intended for Implementation			
Description of the Solution:	Intersection of State Route 47 and the Garden State Parkway (Middle Township) – Elevate Route 47 roadway and ramps, which will require elevation of the Parkway bridge overpass.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100-year	Estimated Benefits (losses avoided):	Medium
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Long-term
Estimated Time Required for Project Implementation:	Long Term (not currently under active consideration by State)	Potential Funding Sources:	Transportation Trust Fund; NJTA Capital Funds
Responsible Organization:	NJDOT and NJ Turnpike Authority	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan; Parkway Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocation of exit	High	No land available
	Exit elevation	High	Continued use of road
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	GSP Exit 4 Elevation	
Project Number:	2021-CapeMayCounty-009 (Former CMC 12)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports evacuation
Property Protection	1	Enhances GSP property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	0	Requires coordination
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	0	Potential for environmental impacts
Social	1	Mitigates social disruption
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term (not currently under active consideration by State)
Agency Champion	1	NJDOT and NJ Turnpike Authority
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Glenwood Avenue (CR-614) Flood Mitigation		
Project Number:	2021-CapeMayCounty-010 (Former CMC 14)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	CR-614 is a highly-flood vulnerable roadway located in West Wildwood. Much of the roadway begins to flood when tide levels exceed one foot above normal high tide. The road provides the only ingress and egress to/from West Wildwood.		
Action or Project Intended for Implementation			
Description of the Solution:	Address flooding on Glenwood Avenue (CR-614) through West Wildwood through road elevation.		
Is this project related to a Critical Facility or Lifeline?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County funds; NJDOT; BRIC
Responsible Organization:	County Engineering and municipality	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Re-routed road	High	No available land
	Road elevation	High	Evacuation for West Wildwood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Glenwood Avenue (CR-614) Flood Mitigation	
Project Number:	2021-CapeMayCounty-010 (Former CMC 14)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects County infrastructure
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	1	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	1	Long Term DOF
Agency Champion	1	County Engineering and municipality
Other Community Objectives	1	
Total	14	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	GSP Exit 6 Flood Mitigation		
Project Number:	2021-CapeMayCounty-011 (Former CMC 15)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Though the Exit 6 interchange is on relatively high ground, in the future sea level rise will cause the interchange to be located in the Special Flood Hazard Area and be impacted by flood events.		
Action or Project Intended for Implementation			
Description of the Solution:	Intersection of State Route 147 and the Garden State Parkway (Middle Township) – Elevate Route 147 roadway and ramps, which will require elevation of the Parkway bridge overpass.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	70 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 20 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	Transportation Trust Fund; NJTA Capital Funds
Responsible Organization:	State DOT and NJ Turnpike Authority	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan, Parkway Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocate Interchange	High	No available land
	Elevation of interchange	High	Continued access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	GSP Exit 6 Flood Mitigation	
Project Number:	2021-CapeMayCounty-011 (Former CMC 15)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports evacuation
Property Protection	1	Enhances GSP property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	0	Requires coordination
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	0	Potential for environmental impacts
Social	1	Mitigates social disruption
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term (not currently under active consideration by State)
Agency Champion	1	NJDOT and NJ Turnpike Authority
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Route 147 Elevation		
Project Number:	2021-CapeMayCounty-012 (Former CMC 16)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Route 147 is on generally higher land, however, upon entering North Wildwood the roadbed elevation decreases. Flooding impacts to the roadway begin at tide levels that are one foot above typical high tides.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate tie-in section of State Route 147 into North Wildwood		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	Transportation Trust Fund; NJDOT
Responsible Organization:	State DOT and municipality	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Realign Roadway	High	No available land
	Route 147 Elevation	High	Continued access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Route 147 Elevation	
Project Number:	2021-CapeMayCounty-012 (Former CMC 16)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects State property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	0	
Legal	0	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	-1	Potential for environmental impacts
Social	1	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF
Agency Champion	1	State DOT and municipality
Other Community Objectives	1	Protects Wildwoods evacuation route
Total	6	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Dennis Creek at Route 47 Flood Mitigation		
Project Number:	2021-CapeMayCounty-014 (Former CMC 19)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane & Tropical Storm, Flooding, Severe Weather		
Description of the Problem:	An undersized retention basin results in flooding in the intersection.		
Action or Project Intended for Implementation			
Description of the Solution:	Rectify cause of flooding at the intersection of State Route 47 and the newly completed bridge over Dennis Creek. A channel was recently cut into the meadows to alleviate the flooding, but the issue is not fully addressed.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 6
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In progress	Potential Funding Sources:	NJDOT, Municipal, and HMA grants where applicable
Responsible Organization:	State DOT	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	Infeasible
	Retention Pond resizing	Medium	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Dennis Creek at Route 47 Flood Mitigation	
Project Number:	2021-CapeMayCounty-014 (Former CMC 19)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects State property
Cost-Effectiveness	0	
Technical	1	Technically feasible
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential for environmental impacts
Social	1	Project mitigates social disruption
Administrative	0	
Multi-Hazard	1	Hurricane & Tropical Storm, Flooding, Severe Weather
Timeline	1	In progress
Agency Champion	1	State DOT
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	CR-640/Coast Guard Shoreline Protection		
Project Number:	2021-CapeMayCounty-014 (Former CMC 21)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	Delaware Avenue/CR-640 connects the US Coast Guard Training Center to Cape May and evacuation routes to the north. Delaware Avenue is protected from Cape May Harbor by a rip-rap system that is subject to erosion and provides inconsistent protection.		
Action or Project Intended for Implementation			
Description of the Solution:	Install shoreline protection for CR-640 (entrance to Coast Guard Base) along the Cape May Harbor in the City of Cape May.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 5
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In progress	Potential Funding Sources:	US Army Corps of Engineers; BRIC; USCG
Responsible Organization:	County Engineering and USACE	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road Abandonment	Low	No access to Sewell Point/USCG
	Shore protection	High	Continued protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-640/Coast Guard Shoreline Protection	
Project Number:	2021-CapeMayCounty-014 (Former CMC 21)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects inhabitants of landward properties
Property Protection	1	Protects landward properties
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	1	
Legal	1	
Fiscal	-1	
Environmental	-1	May cause adverse impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Project will address multiple hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	Protects Coast Guard base
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Wildwoods CR-621 Flood Mitigation		
Project Number:	2021-CapeMayCounty-015 (Former CMC 22)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane & Tropical Storm, Flooding, Severe Weather		
Description of the Problem:	Pacific Avenue is a low-lying major roadway in Wildwood Crest that is vulnerable to nuisance flooding. The corridor is being slated for a revitalization and upgrade of which drainage improvements will be a part.		
Action or Project Intended for Implementation			
Description of the Solution:	Upgrade stormwater drainage system along CR-621 and arterials in the Wildwoods.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within three years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County Funds; NJDOT
Responsible Organization:	County Engineering, Municipalities, and USACE	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan; Local Redevelopment Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	Cost prohibitive
	Stormwater Drainage upgrades	High	Less costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Wildwoods CR-621 Flood Mitigation	
Project Number:	2021-CapeMayCounty-015 (Former CMC 22)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects State property
Cost-Effectiveness	0	
Technical	1	Technically feasible
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential for environmental impacts
Social	1	Project mitigates social disruption
Administrative	0	
Multi-Hazard	1	Hurricane & Tropical Storm, Flooding, Severe Weather
Timeline	1	In progress
Agency Champion	1	County Engineering
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	GSP Exit 13 Flood Mitigation		
Project Number:	2021-CapeMayCounty-016 (Former CMC 24)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	The intersection of Avalon Boulevard and the Parkway (Exit 13) is entirely within the Special Flood Hazard Area. This is a vulnerability for evacuation for both travelers coming from Seven Mile Island as well as the mainland.		
Action or Project Intended for Implementation			
Description of the Solution:	Intersection of Avalon Boulevard and the Garden State Parkway (Middle Township) – Elevate Avalon Boulevard roadway and ramps, which will first require elevation of the Parkway bridge overpass.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base Flood Elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	Transportation Trust Fund; NJTA Capital Funds
Responsible Organization:	County Engineering with NJTA	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan; Parkway CIP
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocate interchange	High	No available land
	Interchange Elevation	High	Continued use of highway
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	GSP Exit 13 Flood Mitigation	
Project Number:	2021-CapeMayCounty-016 (Former CMC 24)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports evacuation
Property Protection	1	Enhances GSP property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	0	Requires coordination
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	0	Potential for environmental impacts
Social	1	Mitigates social disruption
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term (not currently under active consideration by State)
Agency Champion	1	NJDOT and NJ Turnpike Authority
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Avalon Boulevard (CR-601) Elevation		
Project Number:	2021-CapeMayCounty-017c (Former CMC 25)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane & Tropical Storm, Flooding, Severe Weather		
Description of the Problem:	Avalon Boulevard is entirely within the Special Flood Hazard Area between the Parkway and Seven Mile Island. As a major evacuation route, the road is vulnerable to flooding from surges three feet above high tide. The road carries more than 10,000 vehicles per day in the summertime.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate Avalon Boulevard from Parkway into Avalon proper (~2.5 miles).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County Funds; NJDOT; FMA
Responsible Organization:	County Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Bridge across marsh	High	Cost prohibitive
	Roadbed elevation	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Avalon Boulevard (CR-601) Elevation	
Project Number:	2021-CapeMayCounty-017c (Former CMC 25)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects State property
Cost-Effectiveness	0	
Technical	1	Technically feasible
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential for environmental impacts
Social	1	Project mitigates social disruption
Administrative	0	
Multi-Hazard	1	Hurricane & Tropical Storm, Flooding, Severe Weather
Timeline	1	In progress
Agency Champion	1	County Engineering
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Seven Mile Island CR-619 Stormwater Improvements		
Project Number:	2021-CapeMayCounty-018 (Former CMC 29)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Ocean Drive/Third Avenue in Avalon and Stone Harbor is a major thoroughfare connecting the communities and is the longest and busiest roadway in Avalon and Stone Harbor that is most vulnerable to flooding. Flooding impacts begin with a flood event bringing water levels just one foot above high tide. The removal of outfalls is currently in the design phase.		
Action or Project Intended for Implementation			
Description of the Solution:	Upgrade stormwater system on CR-619 through Stone Harbor and Avalon.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	FEMA HMA grant programs, local match
Responsible Organization:	County Engineering with municipalities	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan; Local floodplain management plans
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	Not currently feasible
	Drainage Upgrades	High	Less disruptive than elevation
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Seven Mile Island CR-619 Stormwater Improvements	
Project Number:	2021-CapeMayCounty-018 (Former CMC 29)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	Project is politically feasible
Legal	1	
Fiscal	0	Project requires funding support
Environmental	0	
Social	0	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long-term
Agency Champion	1	County Engineering
Other Community Objectives	1	Aligns with Borough initiatives
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	GSP Exit 25 Flood Mitigation		
Project Number:	2021-CapeMayCounty-020 (Former CMC 31)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	The intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway sees nearly 20,000 vehicles on average each day. The intersection is located in the Special Flood Hazard Area and begins seeing flooding impacts when water levels are at least three feet above high tide. Flooding in this intersection is a major vulnerability to a major evacuation route for Ocean City.		
Action or Project Intended for Implementation			
Description of the Solution:	Intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway (Upper Township) – Roosevelt Boulevard Elevate roadway and ramps, which will first require elevation of the Parkway bridge overpass.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	60 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	Transportation Trust Fund; NJTA Capital Funds
Responsible Organization:	County Engineering and NJ Turnpike Authority	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan; SJTPO
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Interchange Relocation	High	Cost prohibitive
	Interchange elevation	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	GSP Exit 25 Flood Mitigation	
Project Number:	2021-CapeMayCounty-020 (Former CMC 31)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports evacuation
Property Protection	1	Enhances GSP property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	0	Requires coordination
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	0	Potential for environmental impacts
Social	1	Mitigates social disruption
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term (not currently under active consideration by State)
Agency Champion	1	NJDOT and NJ Turnpike Authority
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Ocean City CR-623 Elevation		
Project Number:	2021-CapeMayCounty-020 (Former CMC 32)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Roosevelt Boulevard (CR-623) is a major access road and evacuation route between Ocean City and the mainland. The road sees average daily traffic of between 10,000 and 25,000 vehicles depending on the season. The Boulevard sees flooding beginning at water levels that are two feet above high tide.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	40 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	HMA grants with local match
Responsible Organization:	County Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Bridge	High	Environmentally prohibitive/costly
	Roadbed elevation	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Ocean City CR-623 Elevation	
Project Number:	2021-CapeMayCounty-020 (Former CMC 32)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects State property
Cost-Effectiveness	0	
Technical	1	Technically feasible
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential for environmental impacts
Social	1	Project mitigates social disruption
Administrative	0	
Multi-Hazard	1	Hurricane & Tropical Storm, Flooding, Severe Weather
Timeline	1	In progress
Agency Champion	1	County Engineering
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Cape May City Stormwater Pump Station Resilience		
Project Number:	2021-CapeMayCounty-021 (Former CMC 33)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Cape May is vulnerable to nuisance and stormwater flooding due to low-lying land elevations near Cape Island Creek and Frog Hollow. The City has installed stormwater pump stations to mitigate the flood risk. However, if the pumps fail due to severe storms, the stormwater pumps will not be able to function.		
Action or Project Intended for Implementation			
Description of the Solution:	Install backup power to two stormwater pump stations at Madison Avenue and Grant Avenue in Cape May City. Work with the City to properly site the generator, which could be co-managed with the City to provide backup power for their station on Queen Street and Benton Avenue.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500 Year	Estimated Benefits (losses avoided):	High
Useful Life:	30 Years	Goals Met:	1, 3, 4, 6
Estimated Cost:	Medium (not high \$ cost)	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	HMA grants with local match
Responsible Organization:	County Engineering and Municipality	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan/Local Plans
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Microgrid	High	Too costly
	Backup generator	Medium	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Cape May City Stormwater Pump Station Resilience	
Project Number:	2021-CapeMayCounty-021 (Former CMC 33)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	0	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	Enhances drainage
Social	1	Mitigates disruption due to lack of road service
Administrative	1	
Multi-Hazard	1	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF
Agency Champion	1	Cape May County Public Works/County Engineer; Cape May
Other Community Objectives	1	Supports city initiatives
Total	8	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Ocean City CR-619/CR-656 Upgrades		
Project Number:	2021-CapeMayCounty-022 (Former CMC 37)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane & Tropical Storm, Flooding, Severe Weather		
Description of the Problem:	County routes in Ocean City (including West Avenue and Bay Avenue) are low-lying and vulnerable to flooding. Ocean City has undertaken upgrades to some low-lying areas to address stormwater flooding, though these projects require integration.		
Action or Project Intended for Implementation			
Description of the Solution:	Upgrade storm drainage in Ocean City to meet the current 25-year design storm, inclusive of larger drainage		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	25-year event	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 5, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In Progress	Potential Funding Sources:	City; County Funds; HMA Grant
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Retention ponds	High	No available real estate
	Drainage upgrade	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Ocean City CR-619/CR-656 Upgrades	
Project Number:	2021-CapeMayCounty-022 (Former CMC 37)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	Enhances drainage
Social	1	Mitigates disruption due to lack of road service
Administrative	1	
Multi-Hazard	1	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF
Agency Champion	1	Cape May County Public Works/County Engineer; City of Ocean City
Other Community Objectives	1	Supports city initiatives
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Bay Avenue (CR-659) Elevation		
Project Number:	2021-CapeMayCounty-023 (Former CMC 38)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Bay Avenue is a low-lying thoroughfare and County route in Ocean City. Various sections of the roadway are particularly low-lying and vulnerable to flooding at tidal levels in excess of one foot above high tide.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate Bay Avenue (CR-659) to a congruent height (at least 3 ft NAVD88) in floodprone areas (33rd to 28th, 20th to 18th, 9th to 2nd)		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base Flood Elevation	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	HMA and federal programs with local match
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan; Local drainage plans
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Improved drainage	High	Does not fully mitigate hazards
	Elevation	High	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bay Avenue (CR-659) Elevation	
Project Number:	2021-CapeMayCounty-023 (Former CMC 38)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects State property
Cost-Effectiveness	0	
Technical	1	Technically feasible
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	-1	Potential for environmental impacts
Social	1	Project mitigates social disruption
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	1	In progress
Agency Champion	1	County Engineering
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Communication Tower Mitigation		
Project Number:	2021-CapeMayCounty-024 (Former CMC 39)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane/Tropical Storm; Nor'easter; Severe Storm; Severe Winter Weather		
Description of the Problem:	The County is reliant upon several communication towers that are vulnerable to wind damage. The loss of the towers would hinder communication during emergency situations.		
Action or Project Intended for Implementation			
Description of the Solution:	Retrofit or replace county communications towers (Paris Grant Program towers) including those located on water towers, which are currently rated for winds less than Cat1 strength		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	65 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In Progress	Potential Funding Sources:	County and Paris Grant funds
Responsible Organization:	CMC OEM & Engineering working with facility owners and municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Emergency Operations Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Alternate communication system	High	Interoperability issues
	New towers	High	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Communication Tower Mitigation	
Project Number:	2021-CapeMayCounty-024 (Former CMC 39)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Enhances life safety/emergency operations
Property Protection	1	Makes County property more resilient
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	0	Potential environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Hurricane/Tropical Storm; Nor'easter; Severe Storm; Severe Winter Weather
Timeline	1	In Progress
Agency Champion	1	CMC OEM & Engineering working with facility owners and municipal support
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	CR-657 Beaver Dam Flood Assessment		
Project Number:	2021-CapeMayCounty-025 (Former CMC 43)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Certain portions of CR-657 near Beaver Dam are vulnerable to flooding owing to groundwater/high water table issues.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions at low areas along Court House-South Dennis Road (CR657) near Beaver Dam Road in Dennis Township.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium- High
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium- High	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In Progress - 5% complete	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering and Municipality	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-657 Beaver Dam Flood Assessment	
Project Number:	2021-CapeMayCounty-025 (Former CMC 43)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	1	In progress
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Shunpike Road (CR620) Flood Mitigation		
Project Number:	2021-CapeMayCounty-026 (Former CMC 44)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Shunpike Road in Middle Township is vulnerable to stormwater flooding from inland creeks and waterways.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along the entire length of Shunpike Road (CR620) in Middle Township.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Shunpike Road (CR620) Flood Mitigation	
Project Number:	2021-CapeMayCounty-026 (Former CMC 44)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Fishing Creek/Academy Road		
Project Number:	2021-CapeMayCounty-027 (Former CMC 45)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Fishing Creek/Academy Road (CR-639) is a road running through uplands and wetlands in mainland Lower Township. The road experiences nuisance stormwater flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Fishing Creek/Academy Road (CR639) in Lower Township.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In progress- 1% complete	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Fishing Creek/Academy Road	
Project Number:	2021-CapeMayCounty-027 (Former CMC 45)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	1	In progress
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Fidler Road (CR638) Drainage Mitigation		
Project Number:	2021-CapeMayCounty-028 (Former CMC 48)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Fidler Road experiences localized drainage issues and requires repaving.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Fidler Road (CR638) in Dennis Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF and permitting issues	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Fidler Road (CR638) Drainage Mitigation	
Project Number:	2021-CapeMayCounty-028 (Former CMC 48)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Shunpike Road (CR644) Flood Mitigation		
Project Number:	2021-CapeMayCounty-029 (Former CMC 50)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Shunpike Road in Lower Township runs through the mainland portion of Lower Township through both uplands and wooded wetlands. The road experiences flooding during rainstorms.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Shunpike Road (CR644) in Lower Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Shunpike Road (CR644) Flood Mitigation	
Project Number:	2021-CapeMayCounty-029 (Former CMC 50)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Railroad Avenue (CR626) Flood Mitigation		
Project Number:	2021-CapeMayCounty-031 (Former CMC 51)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	CR-626 runs through the upland portion of Middle Township near Rio Grande. The road experiences flooding issues owing to stormwater and drainage.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Railroad Avenue (CR626) in Middle Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Railroad Avenue (CR626) Flood Mitigation	
Project Number:	2021-CapeMayCounty-031 (Former CMC 51)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Seashore Road (CR626) Flood Mitigation		
Project Number:	2021-CapeMayCounty-031 (Former CMC 52)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Seashore Road runs from Middle Township to West Cape May through Middle Township. The road is predominantly located along uplands but experiences nuisance stormwater flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Seashore Road (CR626) in Lower Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Seashore Road (CR626) Flood Mitigation	
Project Number:	2021-CapeMayCounty-031 (Former CMC 52)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Dias Creek Road (CR612) Flood Mitigation		
Project Number:	2021-CapeMayCounty-032 (Former CMC 53)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood; Hurricane and Tropical Storm		
Description of the Problem:	Dias Creek Road runs between Route 47 and Cape May Courthouse through wetlands, forest, and low-density residential areas. The area is subject to stormwater flooding. Flooding for one side of the road has been mitigated.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Dias Creek Road (CR612) in Middle Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Dias Creek Road (CR612) Flood Mitigation	
Project Number:	2021-CapeMayCounty-032 (Former CMC 53)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flood; Hurricane and Tropical Storm
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Goshen-Swainton Road (CR646) Flood Mitigation		
Project Number:	2021-CapeMayCounty-033 (Former CMC 55)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flooding		
Description of the Problem:	Goshen-Swainton Road (CR-646) runs east-west across Middle Township connecting the neighborhoods of Goshen and Swainton. The road traverses the Cape May National Wildlife Refuge and is impacted by stormwater flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Goshen-Swainton Road (CR646) in Middle Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	N/A	Goals Met:	1, 3, 4, 5, 6
Estimated Cost:	Medium	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	May not mitigate hazard
	Engineering study	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Goshen-Swainton Road (CR646) Flood Mitigation	
Project Number:	2021-CapeMayCounty-033 (Former CMC 55)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Will mitigate life safety impacts
Property Protection	1	Protects County property
Cost-Effectiveness	1	Study allows understanding of flooding issue
Technical	1	Project is technically feasible
Political	0	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project will mitigate potential environmental damages
Social	0	
Administrative	1	Project will coordinate administration
Multi-Hazard	1	Severe Weather, Flooding
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	West Cape May Drainage Improvements		
Project Number:	2021-CapeMayCounty-034 (Former CMC 58)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane & Tropical Storm, Severe Weather, Flooding		
Description of the Problem:	The Perry Street (CR-633) outfall in West Cape May receives and conveys the Borough's drainage. The outfall requires reconfiguration due to the volume of water, causing the potential for backups		
Action or Project Intended for Implementation			
Description of the Solution:	Develop a stormwater master plan for West Cape May.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium- decreased nuisance flooding
Useful Life:	N/A	Goals Met:	1, 3, 4, 6
Estimated Cost:	Low	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Short Term	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Local stormwater plan/Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Ad hoc improvements	Medium	Does not mitigate
	Stormwater Plan	Low	Proactively address flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	West Cape May Drainage Improvements	
Project Number:	2021-CapeMayCounty-034 (Former CMC 58)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project enhances drainage
Social	1	Mitigates disruption due to loss of road
Administrative	1	
Multi-Hazard	1	Hurricane & Tropical Storm, Severe Weather, Flooding
Timeline	1	Short Term
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	Supports municipal efforts
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Ocean Drive (CR619) Shore Protection at Townsends Inlet		
Project Number:	2021-CapeMayCounty-035 (Former CMC 60)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	Townsends Inlet in Avalon experiences wave overtopping due to a lack of beach fill and protective measures. This threatens traveling vehicles and the integrity of the roadway.		
Action or Project Intended for Implementation			
Description of the Solution:	Install shore protection along Ocean Drive (CR619) at Townsends Inlet in Avalon.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Medium
Useful Life:	40 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	Low	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 10 years
Estimated Time Required for Project Implementation:	In progress- full implementation DOF	Potential Funding Sources:	County and local funding
Responsible Organization:	County Engineering/ Planning with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road abandonment	Medium	Not feasible
	Shore protection	Low	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Ocean Drive (CR619) Shore Protection at Townsends Inlet	
Project Number:	2021-CapeMayCounty-035 (Former CMC 60)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports evacuation
Property Protection	1	Protects County property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	0	Potential environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion
Timeline	1	In progress- full implementation DOF
Agency Champion	1	County Engineering/Planning with municipal support
Other Community Objectives	1	Supports municipal initiatives
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Ocean Drive (CR619) Flood Mitigation at Nummy Island		
Project Number:	2021-CapeMayCounty-036 (Former CMC 62)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	Ocean Drive runs for just over a mile in Middle Township between Stone Harbor and Grassy Sound. The road traverses a low-lying marsh island and can be impacted by tides between three and four feet above typical high tide.		
Action or Project Intended for Implementation			
Description of the Solution:	Install shore/roadway protection along Ocean Drive (CR619) in Middle Township		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	30 Years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Less than five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	HMA Grants, County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Roadway Abandonment	Low	Loss of access
	Shore protection	High	Continued use of roadway
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Ocean Drive (CR619) Flood Mitigation at Nummy Island	
Project Number:	2021-CapeMayCounty-036 (Former CMC 62)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports evacuation
Property Protection	1	Protects County property
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	0	Potential environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion
Timeline	0	Long Term DOF
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	West Cape May Drainage Improvements		
Project Number:	2021-CapeMayCounty-036 (Former CMC 58)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane & Tropical Storm, Severe Weather, Flooding		
Description of the Problem:	The Perry Street outfall in West Cape May receives and conveys the Borough's drainage. The outfall requires reconfiguration due to the volume of water, causing the potential for backups		
Action or Project Intended for Implementation			
Description of the Solution:	Develop a stormwater master plan for West Cape May.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium- decreased nuisance flooding
Useful Life:	N/A	Goals Met:	1, 3, 4, 6
Estimated Cost:	Low	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Short Term	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Local stormwater plan/Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Ad hoc improvements	Medium	Does not mitigate
	Stormwater Plan	Low	Proactively address flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	West Cape May Drainage Improvements	
Project Number:	2021-CapeMayCounty-036 (Former CMC 58)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project enhances drainage
Social	1	Mitigates disruption due to loss of road
Administrative	1	
Multi-Hazard	1	Hurricane & Tropical Storm, Severe Weather, Flooding
Timeline	1	Short Term
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	Supports municipal efforts
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Goshen Road (CR615) Drainage Improvements		
Project Number:	2021-CapeMayCounty-037 (Former CMC 63)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather; Hurricane and Tropical Storm		
Description of the Problem:	Goshen Road (CR-615) traverses through forested uplands and is vulnerable to stormwater flooding along a portion of its route in Middle Township.		
Action or Project Intended for Implementation			
Description of the Solution:	Construction of storm drain pipe to minimize flooding on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium- decreased nuisance flooding
Useful Life:	N/A	Goals Met:	1, 3, 4, 6
Estimated Cost:	Low	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Short Term	Potential Funding Sources:	County and Local Funding
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Local stormwater plan/Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Ad hoc improvements	Medium	Does not mitigate
	Storm drain construction	Low	Address flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Goshen Road (CR615) Drainage Improvements	
Project Number:	2021-CapeMayCounty-037 (Former CMC 63)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Project enhances drainage
Social	1	Mitigates disruption due to loss of road
Administrative	1	
Multi-Hazard	1	Hurricane & Tropical Storm, Severe Weather, Flooding
Timeline	1	In progress
Agency Champion	1	County Engineering with municipal support
Other Community Objectives	1	Supports municipal efforts
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	34 th Street Stormwater Pump Station		
Project Number:	2021-CapeMayCounty-041 (Former CMC-77)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	34 th Street/Roosevelt Boulevard (CR-623) is a major thoroughfare into Ocean City and also an evacuation route. The AADT on 34 th Street ranges from nearly 12,500 vehicles in the off-season to nearly 25,000 vehicles in the summer months. The route is vulnerable to stormwater and tidal flooding owing to the low-lying elevation of the roadway and the lack of a structural barrier to flooding along Roosevelt Boulevard in the wetlands section.		
Action or Project Intended for Implementation			
Description of the Solution:	The County proposes to install a stormwater pump station serving 34 th Street to alleviate nuisance flooding on the road and maintain the utility of the evacuation route during flooding events.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Life safety- maintenance of evacuation route utility
Useful Life:	30 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Less than five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	HMGP; County/local funds; FMA
Responsible Organization:	Cape May County Public Works/County Engineer; City of Ocean City	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan, Local stormwater master plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Enhanced drainage	High	Does not completely mitigate flooding
	Pump station	High	Continued function of roadway
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	34 th Street Stormwater Pump Station	
Project Number:	2021-CapeMayCounty-041 (Former CMC-77)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	Enhances drainage
Social	1	Mitigates disruption due to lack of road service
Administrative	1	
Multi-Hazard	1	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF
Agency Champion	1	Cape May County Public Works/County Engineer; City of Ocean City
Other Community Objectives	1	Supports city initiatives
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Strathmere Drainage Improvements		
Project Number:	2021-CapeMayCounty-043 (Former CMC-79)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	The Strathmere section of Upper Township is a low-lying barrier island community. Commonwealth Ave/CR-619 is the major north-south route through Strathmere and connects the neighborhood to evacuation routes to the north in Ocean City and to the South in Sea Isle City. When Commonwealth Avenue is flooded, evacuation from the neighborhood is impeded. The Avenue will continue to experience inhibited access during rain and tidal events.		
Action or Project Intended for Implementation			
Description of the Solution:	The County, in conjunction with Upper Township, proposes improvements to Commonwealth Avenue to alleviate drainage issues and reduce flooding. Proposed upgrades include upgrading, upsizing, and redirecting stormwater outfall pipes to allow for the enhanced drainage of stormwater. Stormwater pump stations will be considered for feasibility.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	40 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Less than five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County
Responsible Organization:	CMC Engineering Working with Upper Township	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan, Repetitive Loss Area Analysis
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	Not currently feasible
	Drainage Improvements	High	Mitigation of flooding issues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Strathmere Drainage Improvements	
Project Number:	2021-CapeMayCounty-043 (Former CMC-79)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	Project enhances drainage
Social	1	Project mitigates social disruption due to loss of road service
Administrative	1	
Multi-Hazard	1	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF
Agency Champion	1	CMC Engineering Working with Upper Township
Other Community Objectives	1	Supports Township initiatives
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Sea Isle City Drainage Improvements		
Project Number:	2021-CapeMayCounty-044 (Former CMC-80)		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	CR-619 (Landis Avenue) and CR-625 (JFK Boulevard) are major thoroughfares in Sea Isle City and carry stormwater drainage infrastructure. The City experiences frequent nuisance flooding on these streets.		
Action or Project Intended for Implementation			
Description of the Solution:	The County proposes to undertake drainage improvements to these roadways and coordinate with Sea Isle City to facilitate drainage in the vicinity. Outfall pipes require upgrading and upsizing. Stormwater pump stations will be considered.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduced disruption due to stormwater flooding
Useful Life:	30 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County Funds; BRIC
Responsible Organization:	CMC Engineering working with Sea Isle City	Local Planning Mechanisms to be Used in Implementation if any:	Local drainage plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevations	High	Not currently feasible at scale
	Drainage improvements	Medium	Mitigated flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Sea Isle City Drainage Improvements	
Project Number:	2021-CapeMayCounty-044 (Former CMC-80)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	Project enhances drainage
Social	1	Project mitigates social disruption due to loss of road service
Administrative	1	
Multi-Hazard	1	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Long Term DOF
Agency Champion	1	CMC Engineering working with Sea Isle City
Other Community Objectives	1	Supports City initiatives
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Construct a Sea Wall barrier around the Ocean City Wastewater Treatment Facility		
Project Number:	2021-CapeMayCounty-046		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	The Ocean City Wastewater Treatment Facility located at 45 th and Simpson Ave in Ocean City treats all of the wastewater from the island of Ocean City, NJ. It is a critical piece of infrastructure that currently is not hardened against a major flood. Furthermore, it resides directly adjacent to the intercostal waterway and just two city blocks from the Atlantic Ocean. In the event of a major flood caused by hurricane, nor'easter storm or the like that resulted in the facility going completely underwater, the facility's ability to treat wastewater from the island of Ocean City would be compromised. In the worst case scenario, the facility could be out of service for several weeks.		
Action or Project Intended for Implementation			
Description of the Solution:	The construction of a sea wall around the perimeter of the Ocean City Wastewater Facility would mitigate the catastrophic flood risk.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500 Year	Estimated Benefits (losses avoided):	Eliminate or reduce risk of loss of the Wastewater Treatment facility essential to public health of Ocean City.
Useful Life:	50	Goals Met:	1, 3, 4, 6
Estimated Cost:	\$5,000,000 - \$10,000,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	10 years
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	FMA; BRIC; County Funds
Responsible Organization:	CMCMUA Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Construct Sea Wall	5,000,000 - \$10,000,000	Mitigate current risk
	Install flood gates on doors, hatches and manholes	\$100,000 - \$500,000	Risk of catastrophic outage still present. Could help with smaller storm surges that only last a short period.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Construct a Sea Wall barrier around the Ocean City Wastewater Treatment Facility	
Project Number:	2021-CapeMayCounty-046	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Staff at facility protected
Property Protection	1	Protect MUA property
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	1	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Storm; Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	3 years
Agency Champion	1	CMCMUA Engineer
Other Community Objectives	1	Capital Improvement Plan; County
Total	13	
Priority (High/Med/Low)	High	



9.2 BOROUGH OF AVALON

This section presents the jurisdictional annex for the Borough of Avalon. The annex includes a general overview of the Borough of Avalon; an assessment of the Borough of Avalon's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.2.1 Staff and Local Stakeholder Involvement in Annex Development

The Borough of Avalon followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.2-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Richard Dean, Sr., OEM Coordinator Address: 3100 Dune Drive. Avalon, NJ 08202 Phone Number: (609) 967-5920 Email: edean@avalonboro.org		Name / Title: Paul Short, Sr., Code Enforcement Official, Dep. OEM Coordinator Address: 1401 Dune Drive Phone Number: (609) 967-5920
NFIP Floodplain Administrator		
Name / Title: Richard Dean, Sr., Construction Official Address: 3100 Dune Drive. Avalon, NJ 08202 Phone Number: (609) 967-5920 Email: edean@avalonboro.org		
Name	Title	Method of Participation
Richard Dean	OEM Coordinator, Construction Official	Author of annex, reviewed and signed off on annex
Paul Short, Sr.	Code Enforcement Official, Dep. OEM Coordinator	Completed stakeholder survey
Scott Wahl	Business Administrator	Meetings on project details and establishment of priorities, reviewed and signed off on annex
Tom Thornton	Borough Engineer	Author of Avalon Floodplain Mitigation Plan, technical expertise
James Craft	Fiscal/CFO	Reviewed and signed off on annex
Amanda Seltzer	Land Use Planner	Reviewed and signed off on annex
Stephen M. Camp	Operation Coordinator	Reviewed and signed off on annex
Jeff Christopher	Chief, Police Department	Reviewed and signed off on annex



9.2.2 Jurisdiction Profile

Avalon is a resort and residential community located on the northern portion of Seven Mile Island in Cape May County, New Jersey. The Borough is known for its spectacular beaches and natural resources. It is bordered to the north by Townsends Inlet, to the west by Great Sound and Gravens Thorofare/Intracoastal Waterway, to the east by the Atlantic Ocean, and to the south by Stone Harbor, with which Avalon shares Seven Mile Island. Much of Avalon's land area is preserved open space inclusive of thousands of acres of saline wetlands and upland dune habitats.

According to the U.S. Census, the 2010 population for the Borough of Avalon was 1,334. The estimated 2018 population was 1,409, a 5.6 percent increase from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 1.8 percent of the population is 5 years of age or younger and 51.1 percent is 65 years of age or older. With 37 percent of the population aged 70 or older, it must be assumed that as much as one-third of the population would suffer from mild to severe age-related disability. Since the Borough of Avalon is a resort community, and tourism is the primary industry, swelling the seasonal population to around 50,000 people in mid-summer. Multiple means of communication are employed in attempt to reach the resident and seasonal population during in-season emergencies. Communities must deploy a support system which may include seasonal workers, that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.2.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.2-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.2-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.2-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	83	83	54	54	100	100	91	91	75	75
Multi-Family	0	0	0	0	0	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	0	0	9	9	0	0

* Only location-specific hazard zones or vulnerabilities identified.

9.2.4 Capability Assessment

The Borough of Avalon performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:



- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.2.4). The Borough of Avalon identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> • State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019, effective March 14, 2020. • Borough Building and Construction Code, Chapter 20, Adopted by the Borough Council and Amended 1-23-2019. The Construction Official shall be the chief administrator of the enforcing agency. • The Borough adopted Chapter 19 of Avalon Borough Code in 2013 entitled “Flood Damage Prevention”, with amendments adopted in 2015, 2017, and 2020 by Avalon Borough Council. • The Borough has established the position of Floodplain Coordinator, who is responsible for review of the Floodplain Development Permit. • The Borough requires a separate permit for development in the 100-year floodplain. 					
Zoning Code	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> • State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. • Borough Zoning Regulations, Chapter 27, Adopted by the Borough Council, 2002. Purpose is to guide and regulate the orderly growth and development of the Borough of Avalon in accordance with a duly enacted comprehensive Master Plan. • The Borough integrates mitigation into this section by encouraging elevations in the SFHA up to 3 feet above the BFE and by requiring new development to protect from flooding by maintaining the integrity of the stormwater management system. 					
Subdivisions	Yes	County & Local	Yes – if municipality has a	Yes	-



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
			Planning Board		
Comment: <ul style="list-style-type: none"> Borough Subdivision and Site Plan Review Ordinance, Chapter 26, Adopted by Borough Council in 2008. Purpose is to promote orderly growth and development in the Borough of Avalon through the positive application of high standards of design and construction, contribute to the overall quality of the environment and to further the goals and objectives of the Borough's Master Plan and subsequent re-examinations and the purpose of the Borough's Zoning Ordinance. Aspects of this Ordinance have integrated the hazard mitigation plan as this section requires in its Design Standards; dune protection, energy conservation, limiting impacts to vegetation and other natural features, encouraging green building techniques, flood protection, soil conservation, landscaping, nonstructural stormwater controls and open space. 					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Borough Stormwater Regulations, Chapter 30, Adopted by Borough Council in 2006. Purpose is to establish minimum stormwater management requirements and controls for all major developments undertaken in the Borough of Avalon. In addition, it is the policy initiative of this Section for the design of Flood control, groundwater recharge, and pollutant reduction to be provided through nonstructural or low impact techniques before relying on structural Best Management Practices. Aspects of this Ordinance have been incorporated into the mitigation plan by way of substantial efforts toward the provision of environmentally sensitive, nonstructural stormwater management techniques that maximize water quality and groundwater recharge, and minimize flooding. 					
Post-Disaster Recovery	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Borough Administration maintains contracts with FEMA approved vendors for post disaster recovery and services. 					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none"> N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. 					
Growth Management	No	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Plan Endorsement was required to extend CAFRA Centers and is often an incentive for grants and some permit approvals. Locally, the municipal zoning official is the point of contact, and any growth plans are remanded to the Avalon Planning-Zoning Board and Borough Council for joint approval. 					
Site Plan Review	Yes	County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Borough Subdivision and Site Plan Review Ordinance, Chapter 26, Adopted by Borough Council in 2008. Purpose is to promote orderly growth and development in the Borough of Avalon through the positive application of high standards of design and construction, contribute to the overall quality of the environment and to further the goals and objectives of the Borough's Master Plan and subsequent re-examinations and the purpose of the Borough's Zoning Ordinance. 					



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> Aspects of this Ordinance have been integrated into mitigation plan as this section requires in its Design Standards, dune protection, energy conservation, limiting impacts to vegetation and other natural features, encouraging green building techniques, flood protection, soil conservation, landscaping, nonstructural stormwater controls and open space. 					
Environmental Protection	Yes	Federal, State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Pursuant to N.J.S.A. 40:56A-1 the Borough has established the Environmental Commission. The purpose of the Commission is the protection, development or use of natural resources, including water resources, within the Borough. The Environmental Commission is empowered to conduct research in the use or possible use of open land areas of the Borough and may coordinate the activities of unofficial bodies organized for similar purposes. The Commission maintains an Environmental Resource Inventory of all open areas, publicly and privately owned, including open marshlands, swamps and other wetlands, in order to obtain information on the proper use of such areas and may from time to time recommend to the Planning Board plans and programs for inclusion in a Municipal Master Plan. The Environmental Commission may, subject to the approval of the Borough Council, acquire property. Such acquisition may be to acquire the fee or any lesser interest, development right, easement, including conservation easement, covenant, or other contractual right, including a conveyance on conditions or with limitations or reversions, as may be necessary to acquire, maintain, improve, protect, limit the future use of or otherwise conserve and properly utilize open spaces and other land and water areas in the Borough. The Environmental Commission participates, to the fullest extent possible, in review by the NJDEP of applications for development within the Beach Dune Area in accordance with N.J.A.C. 7:7-4.1 et seq. The Environmental Commission is the municipal custodian of the Avalon Dune Vegetation Management Plan, which regulates plantings and other activities in the dunes, as well as limits plantings during rehabilitation to approved native species. In accordance with Avalon Borough Code Chapter 23, Section 5, upon receipt of an application deemed complete by the Secretary of the Planning/Zoning Board in accordance with Section 23-4 above, the Planning/Zoning Board shall forward a copy of the application to the Environmental Commission of the Borough of Avalon. The Environmental Commission shall make any recommendations concerning same to the Planning/Zoning Board. The Planning/Zoning Board shall give due regard to any recommendation of the Environmental Commission. 					
Flood Damage Prevention	Yes	Federal, State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective September 27, 2017. Borough Flood Damage Prevention Ordinance, Chapter 19, Adopted by Borough Council in 2013 and amended through 2020. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: <ul style="list-style-type: none"> Protect human life and health; Minimize expenditure of public money for costly flood control projects; Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public and risk to those individuals who are providing rescue efforts; Minimize prolonged business interruptions; Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard; Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; Ensure that potential buyers are notified that property is in an area of special flood hazard; and Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. Integrated mitigation actions in this Section include methods and provisions for: a. Restricting or prohibiting uses which are potentially dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; b. Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; c. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters; d. Controlling filling, grading, dredging, and other development which may increase flood damage; and, e. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas. 					
Wellhead Protection	No	-	No	No	-
Comment:					
Emergency Management	Yes	Local	No	No	-



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of hazard mitigation been integrated? If yes-how? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:				
<ul style="list-style-type: none"> The Borough has a comprehensive Emergency Management webpage and plans for mitigation, response, and recovery from flood events. The fire department and emergency management coordinator continue to work with the water and sewer utility on the fire hydrant replacement program. This ongoing program replaces approximately 12 fire hydrants each year to upgrade the firefighting capability and remove older obsolete hydrants from service without the need for capital expenditure. 				
Climate Change	No	-	No	No -
Comment:				
Disaster Recovery Ordinance	No	-	No	No -
Comment:				
Disaster Reconstruction Ordinance	No	-	No	No -
Comment:				
Other	Yes	State & Local	No	No -
Comment:				
<ul style="list-style-type: none"> The Water and Sewer Ordinance, Chapter 14, was adopted by the Borough Council in 2000. It contains Section 14-15, Water Emergencies which could be expanded to include mitigation actions. The power of the municipality to acquire, construct, finance, operate and maintain water supply facilities and sewerage services is provided by N.J.S.A. 40A:31-1 et seq., and N.J.S.A. 40A:26A-4 et seq. The purpose of Article II, Sewers, is to provide for the maximum possible beneficial public use of the wastewater facilities through regulation of sewer construction, sewer use and wastewater discharges and provide procedures for complying with the requirements. The Code Enforcement Official is charged with ongoing municipal survey of the integrity of sewer service cleanouts adjacent to or on privately owned land, and is empowered to compel owners to maintain the sewer service openings watertight. Borough Code Section 14-23.7 provides standards for maintaining sewer cleanout openings. 				
Planning Documents				
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes -
Comment:				
<ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. Borough Master Plan Re-examination, adopted April 11, 2017 by the combined Planning/Zoning Board. Purposes of the Master Plan include, providing protection from flooding, Promoting the use of shoreline protection measures and the use of green building with these integrating Mitigation Plan objectives; <ul style="list-style-type: none"> Implement the Borough's 2015 Flood Mitigation Plan Research additional Bay Back improvements to alleviate flooding Research additional outfall pipes and pumping systems to handle stormwater Develop a flood proofing education program for businesses Research possible State and Federal grant funding for flood protection Develop a program or zoning ordinances to assist owners in the elevation of residential structures which exist below the FEMA Base Flood Elevation (BFE) + 3' Identify and evaluate properties with repetitive flood losses Identify and evaluate streets with repetitive flooding problems Encourage the installation of additional check valves on outfall pipes Develop vegetation recommendations for living shorelines, berms and dunes Encourage the use of alternative shoreline methods Encourage LEED construction 				



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> In 2020 the Borough passed Ordinance 810-2020 establishing the "Environmental Trust Fund of the Borough of Avalon," in accordance with N.J.S.A 40A:5-29, to establish a fund to accept bequests, legacies, and gifts, and to dedicate those, and such other funds as the Borough Council may approve, to protect or improve the ecology or environment of the Borough of Avalon. 	Yes	Local	No	Yes	2021-Avalon-001, -002, -007
Capital Improvement Plan Comment: <ul style="list-style-type: none"> The Borough has a 2020 Capital Improvement Program, adopted by the Borough Council on April 22, 2020 in the amount of \$2,618,000.00. The Program includes but is not limited to funding for underground utility, roadway, storm water, and bulkhead improvements. The Borough has completed projects and has projects underway that are actions that are included in the Borough's mitigation efforts. The Borough has committed funding for flood mitigation and resiliency improvements to the firehouse. The project will be funded in phases over the next 3 years with the goals of elevating equipment in the firehouse to protect from flood damage, and upgrading the firehouse to ADA compliance to improve usability by citizens during flood emergencies when the firehouse is utilized as a temporary evacuation transition center. In 2020 a \$2.1 million project was approved to install a storm drain pump system at 78th Street and Ocean Drive to help in the control of nuisance and tidal flooding in the area. In 2021 the Borough will begin funding improvements to Bay Park Marina between 53rd and 57th Streets on Ocean Drive. The project is currently in the design phase and details include elevating the parking area, replacing the bulkhead, enhancing and establishing new living shoreline, and improvements to structures on the site to current flood design standards. In 2021 the Borough will seek funding for improvements to the stormwater drainage system from 9th to 22nd Streets east of Avalon Avenue. The project will establish an additional gravity storm drain, and upgrade and improve pump capacity at the existing 11th Street storm water pump station to help alleviate nuisance flooding in the north end beach blocks basin. This project is currently in the planning and engineering phase. 	Yes	Local	No	Yes	-
Disaster Debris Management Plan Comment: <ul style="list-style-type: none"> The Borough does not have a dedicated plan for Disaster Debris Management but does have a comprehensive Solid Waste Management Ordinance, Chapter 17, adopted in 2013. The Ordinance promotes the proper collection and disposal of solid waste and recyclable materials. The Borough had also banned the use of polystyrene/plastic foam and single-use plastic. On the Borough's Emergency Management Web Page http://www.avalonemergency.org reference is made to Disaster Debris Management. It states that the Borough has planned for the removal of debris and materials that would block and clutter local streets in the community. A contract for that service with Phillips & Jordan has also been approved. This company is a world-wide expert on debris clearance and removal following a natural disaster. The company has also provided remediation following major ice storms, oil spills, and floods. The Borough OEM maintains a list of previously approved by FEMA debris collection sites for quick future deployment when the need arises. 	Yes	Local	No	Yes	2021-Avalon-005
Floodplain or Watershed Plan Comment: <ul style="list-style-type: none"> Borough Floodplain Management Plan Evaluation Report 2017 & 2015 Comprehensive Floodplain Management Plan. The plan is currently undergoing 2020 review. The Plan contains a number of Action Items and their status that have integrated the County's Hazard Mitigation Plan. Building Ecological Solutions to Coastal Community Hazards (BESCCCH), dated December 14, 2016. The BESCCCH Team was asked to specifically address flooding in certain sections of the Borough's business district caused by bay waters and the slow retreat of those waters. While the strategies recommended in the brief report will not prevent the flooding, they could lessen the impact by enhancing natural features along certain sections of the bay shoreline and saltmarshes. 	Yes	Local	Yes	Yes	-
Stormwater Management Plan Comment: <ul style="list-style-type: none"> The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. The Borough has a Stormwater Management Ordinance cited above and stormwater controls are incorporated into Site Plan and Subdivision reviews and included in the Utility Element of the Master Plan Re-Examination. The Borough does not have a separate Stormwater Management Plan that comprises the total area of the community, but they do have the Avalon Drainage Study which focuses on the north end of the Borough, it is dated May 16, 2018. The Plan sought a 	Yes	Local	Yes	Yes	-



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>solution to the north end flooding that seemed to occur during intense, short duration rain events, such as a 10-year storm. Based on the findings of the Plan, two pump stations are recommended, along with improvements to the capacity of the stormwater conveyance system.</p> <ul style="list-style-type: none"> The projects identified in the Avalon Drainage Study advance aspects of the HMP. 					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none"> The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. Avalon Borough Code Section 7.3 prohibits illegal littering and dumping on both land and into the stormwater system. The water and sewer utility is required by contract to maintain stormwater inlet basins, including the requirement that basins be cleaned on an annual basis. The Avalon Department of Public Works sweeps stormwater inlets after all flooding and/or heavy rain events. 					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	No	--
<p>Comment:</p> <ul style="list-style-type: none"> The Borough has a Dune Vegetation Management Plan, dated December 2009. The goals of the Plan are to; Maintain a healthy, diverse dune system comprised primarily of native species; Establish a science-based approach to evaluating and managing dune vegetation, in a manner to achieve the goals of the Borough; To identify problems associated with invasive plant species in the dune system and to define the nature and extent of the related issues; To develop a Dune Vegetation Management Plan that addresses control of invasive plant species; To provide management standards and techniques that allow for the improvement of the vegetative component of the dune ecosystem; and to identify and protect dune vegetation die back areas. The protection and maintenance of the dune system retains wildlife habitat, but also advances aspects of mitigation as the dune provides flood protection to the barrier island. 					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	State & Local	Yes – if located in a coastal zone	Yes	-
<p>Comment:</p> <ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq. The Borough has a Beach and Dune Protection Ordinance, Chapter 23, which was adopted in 2006 and amended in 2009. The purposes of the Ordinance include that: <ul style="list-style-type: none"> The Borough of Avalon is situated on a barrier island known as Seven Mile Beach, one (1) of eight (8) barrier islands along the coast of New Jersey. Certain portions of the beach and dunes bordering on the Atlantic Ocean consisting of the entire length of the inlet and oceanfront shorelines from the Townsends Inlet Bridge to 80th Street, inclusive, and the same being the boundary lines of the Borough of Avalon, New Jersey, have in the past suffered, and will continue to suffer, severely from damage caused by storms and wind-driven storm tides, at which times the ocean encroaches upon the land and causes serious damage to public and private property and endangers the safety and welfare of the public. The Borough Council acknowledges that this encroachment of the ocean and the causing of over-wash areas on the island is a normal and natural occurrence on a barrier island and, in fact, is the very mechanism by which a barrier island withstands the impact of a major coastal storm. The situation created along the beach and dunes by reason of such storm tides and resulting damage has been so serious that many millions of dollars of both public and private funds have been expended for the replenishment of sand 					



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>and vegetation, and erection of bulkheads, sand fences and other supportive structures intended to prevent encroachment by the ocean and beach and dune erosion</p> <ul style="list-style-type: none"> Continuing beach erosion along the Atlantic seaboard, along with the gradual rise of the ocean level, has created an immediate and imminent danger to persons and property in the Borough of Avalon by reason of the destruction of the sand barriers which protect the Borough's oceanfront. Consequently, it has become necessary to the health and welfare of the public to maintain the integrity of the system of dune and supportive structures on both public and private property within the Borough of Avalon. The interference with or the depletion of the beach and dunes tends to more easily permit encroachment by the ocean and, in the opinion of the Council of the Borough of Avalon, the conditions recited above make it imperative that it regulate and control the disturbance, removal or redistribution of sand and/or vegetation on or from the beach and dunes. Therefore, with few exceptions, it is unlawful for any person or persons, including any natural person, corporation, partnership, association or any of their agents or employees to disturb, remove, or redistribute any sand and/or vegetation on or from privately owned property located within the Beach Dune Area. <ul style="list-style-type: none"> The Borough approved the preparation of a Beach Protection Study in April 2020. The protection of the shoreline, beach and dune system are all aspects of the actions that have been integrated into the HMP. 					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"> The Borough has a Community Forestry Management Plan. It is a 5-year Plan approved by the NJDEP. A Community Forestry Management Plan approved by the New Jersey State Forest Service is an essential guide to successfully achieving a healthy, safe, and sustainable community forest. The Plan also ensures that the Borough has taken the necessary first step toward compliance with the Shade Tree and Community Forestry Assistance Act. Compliance by the Borough of Avalon affords the community increased liability protection under the Tort Claims Act. The Plan includes aspects of the HMP as it incorporates actions to control invasive species, in addition to dune protection, erosion control and advancing Climate Change initiatives. 					
Transportation Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> The Borough addresses transportation planning in the Circulation Element of its Master Plan Re-examination, adopted April 11, 2017 by the Joint Planning/Zoning Board. 					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> The Borough was part of a November, 2016 Case Study, "Climate Adaptation: The State of Practice in U.S. Communities" the Plan discusses the Borough's comprehensive efforts to protect against flooding, to increase shoreline protections measures, to further public outreach and education and to seek additional state and federal funding to implement planned projects. The Plan discusses many of the Borough's accomplishments to address the increase in the severity of storm events related to Climate Change, along with ongoing and proposed actions incorporated as aspects of the HMP. The Borough of Avalon participates in the Sustainable New Jersey program and has achieved Bronze recognition for three straight years, 2017 through 2020. Among the required actions is conducting periodic vulnerability assessments and building climate change estimates into resiliency plans to mitigate damage due to ocean water rise. 					
Tourism Plan	Yes	Local	No	No	No
Comment: <ul style="list-style-type: none"> Annually, the Borough creates a Tourism-Vacation Guide, "7 Mile Beach". It features highlights on the best lodging, dining, shopping and activities throughout Avalon and Stone Harbor. The Borough has one of the few remaining high dune systems in existence has long protected the area from development. The Borough has created the Avalon Dune and Beach Trail between 48th and 44th Streets in the dunes. This interactive 1.1-mile walk provides information along the path explaining the dune ecological system from the beach front to the back of the dunes landward. It is on the annual field trip list for many southern New Jersey schools and is available to everyone free of charge year-round. 					
Business Development Plan	No	-	No	-	-
Comment:					



Table 9.2-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how?	Have aspects of hazard mitigation been integrated? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. The Borough's Emergency Support Function annexes are living documents that are reviewed frequently by the various department heads or emergency managers in charge of them to ensure that the annexes remain relevant at all times. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none"> The Borough of Avalon Municipal Coastal Vulnerability Assessment, dated May, 2016, while not a THIRA by name, identifies the vulnerability of the community's assets to a series of flood hazard scenarios and examines how the flood events will affect the functional capacity of critical buildings, services, infrastructure, businesses, ecological systems, and residents. The Plan includes many short- and long-term recommendations for addressing the identified vulnerabilities that are mitigation actions some of which are aspects of the HMP. The Borough just completed a study of nuisance flooding in the east blocks between 10th and 24th Streets, and the Borough is currently planning mitigation action that includes improving stormwater run-off in the area. The Borough continues to augment the gravity stormwater systems along and west of Ocean Drive by installing stormwater pumps to remove flood water from streets. Most recently Borough Council has approved the installation of a stormwater pump at 78th Street and Ocean Drive. 					
Post-Disaster Recovery Plan	Yes	Local	No	No	-
Comment:					
<ul style="list-style-type: none"> In 2017 the previous post-disaster recovery annex was updated and absorbed into the Emergency Operations Plan as ESF-14A. The ESF is activated by the Emergency Management Coordinator a need for recovery operation has been identified in the damage assessment. Long-term recovery is managed by the Municipal Business Administrator under the direction of the Mayor. 					
Continuity of Operations Plan	Yes	Local	No	Yes	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none"> The Borough has completed a "Getting to Resilience" Report, dated September 2015. The five topics covered by the Plan include; Risk & Vulnerability, Public Engagement, Planning Integration, Disaster Preparedness & Recovery, and Hazard Mitigation Implementation. The Borough has undertaken and completed the majority of the recommendations in the Plan, most of which are aspects of the HMP that have been integrated. 					

Table 9.2-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. The Borough of Avalon is largely built out. Borough land is fully inventoried and dedication to open space



Criterion	Response
	or build-out is well over 99 percent of available land area.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

Table 9.2-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning/Zoning
Mitigation Planning Committee	Yes	Administration, Floodplain Administrator
Environmental Board / Commission	Yes	Avalon Environmental Commission
Open Space Board / Committee	No	Avalon is built out, no new open space is available
Economic Development Commission / Committee	No	Avalon has no plans for new business zone development
Warning Systems / Services (mass notification system, outdoor warning signals)	Yes	Code Red (mass notification system); the Avalon Emergency website are dedicated to communication of hazard related information.
Maintenance program to reduce risk	Yes	Department of Public Works
Mutual aid agreements	Yes	Numerous mutual aid agreements
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Joseph Maffei, Planning/Zoning Board
Engineers or professionals trained in building or infrastructure construction practices	Yes	Mott, MacDonald – Engineers and Planners
Planners or engineers with an understanding of natural hazards	Yes	Mott, MacDonald – Engineers and Planners
Staff with training in benefit/cost analysis	Yes	Mott, MacDonald – Engineers and Planners
Staff with training in green infrastructure	Yes	Taylor Design Group
Staff with education/knowledge/training in low impact development	Yes	Taylor Design Group
Surveyor	Yes	Mott, MacDonald – Engineers and Planners
Stormwater engineer	Yes	Mott, MacDonald – Engineers and Planners
Personnel skilled or trained in GIS applications	Yes	Mott, MacDonald – Engineers and Planners
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	Yes	Dr. Farrell, L. Tedesco
Emergency manager	Yes	OEM Coordinator
Watershed planner	Yes	Mott, MacDonald – Engineers and Planners
Environmental specialist	Yes	Dr. Farrell, L. Tedesco
Grant writers	Yes	Triad Associates
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

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





Table 9.2-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.2-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Business Administrator Scott Wahl
Do you have personnel skilled or trained in website development?	Yes – Business Administrator Scott Wahl
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes – Flooding from storms has been identified as the primary hazard in Avalon. On the front page of the municipal website is a section titled, “Flood Information Links.” Under the title are links to the Avalon Emergency website, a web page explaining that Avalon is in a flood hazard zone and what that means, a link to the USGS real-time flood gauge at Ingram Thorofare, historical flood data, and links to helpful flood related websites.
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes. Automated Facebook and Instagram flood hazard mitigation messages are posted weekly.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes. The Floodplain Management Committee and the Environmental Commission are composed of Borough officials and members of the general public from target sectors related to the work of the committees.
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Yes. Code Red (mass notification system), the Avalon Emergency website are dedicated to communication of hazard related information.

COMMUNITY CLASSIFICATIONS

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

Table 9.2-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	3	5/1/2020
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	TBD	TBD
Public Protection (Fire ISO Protection Class)	Yes	3	2019





Program	Participating?	Classification	Date Classified
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	10/4/2017

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.2-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.2-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Department
Who is your floodplain administrator? (name, department/position)	R. Edward Dean, Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes.
What is the date that your flood damage prevention ordinance was last amended?	July 8, 2020. Ord. No. 807-2020
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceeds. A design flood elevation of base flood elevation (NAVD88) plus 3 feet is required for new construction and substantial improvements of existing structures in the Borough. This exceeds minimum design flood elevation by 2 feet. Ordinances were adjusted in 2017 with new BFE data and 3 feet of freeboard is required over BFE for residential construction. Commercial construction and substantial improvements shall either be constructed in accordance with the DFE requirements or floodproofed in accordance with ASCE 24. Building codes



Criterion	Response
	continue to be enforced. 2018 IBC is now in effect and includes language regarding floodplain construction to incorporate the Borough DFE into the building code.
When was the most recent Community Assistance Visit or Community Assistance Contact?	October 2020
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No.
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Yes. The region is currently under re-study by FEMA Region 2.
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes.
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes. The Borough is always seeking to improve its CRS classification.
How many flood insurance policies are in force in your jurisdiction?*	3,797 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	1,939 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$26,664,883 in payments
Do you maintain a list of properties that have been damaged by flooding?	Yes.
Do you maintain a list of property owners interested in flood mitigation?	Yes.

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Floodplain Management:** The Borough Staff supports homeowners who desire to remediate their repetitive loss properties and the Construction Office continues to implement the Repetitive Loss Reduction Plan. The Public Works Department and Engineer conduct flood mitigation training of Borough staff.
- **Emergency Management:** The Borough has a strong web presence with a very informative site. It includes storm and weather information, local and regional media outlets that provide continuous information, information for reacting to an emergency or an evacuation, traffic information, power outage maps, and helpful information videos and important Borough contact information. The Borough Staff maintains pre-disaster contracts with disaster recovery contractor for debris removal and pursues pre-disaster contracts for providing home and family services for emergency personnel during disasters. Additionally, the Borough continues to maintain pre-disaster contract for disaster-recovery services of public buildings and facilities, maintains contract for portable generator services for evacuation shelter, and maintains contract with local bus company for evacuation



service for shut-ins. The Water System Operator and Engineer provide emergency connections for portable generator at oceanfront pump stations.

- **Ecosystem Management:** The Borough Staff continues to conduct regular beach and dune maintenance activities. The Borough Staff and volunteers are continuing to support the volunteer dune grass planting program. The Borough Engineer and Staff are continuing to explore opportunities to restore degraded tidal marsh in back bay utilizing thin-layer placement of dredged material. The Borough Staff continues to implement the dune grass fertilization program. The Borough Staff continues to implement invasive species management and mitigation.
- **Public Outreach:** The Construction Office continues to support outreach efforts to provide informational materials to homeowners, builders, and realtors regarding floodplain management. The Office also generates increased interest in floodplain management among homeowners and business owners. interest in floodplain management among homeowners and business owners. The Borough Engineer maintains tide reference gauges to provide residents with a means to more accurately interpret public announcements related to flooding levels and surges. The Borough Staff continues to provide flood warnings and information on: 9a- local cable channel, 9b- website, 9c- AM 1630 radio station, and 9d- social media.

9.2.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of Avalon's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.2-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.2-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Losses in the Borough totaled \$12 million due to infrastructure/property damage, beach damage, and debris management.
September 3-6, 2016	Tropical Storm Hermine, High Surf	No	Slow moving tropical cyclone Hermine caused several days of 8 to 12 feet of surf breaking on Atlantic Ocean shorelines. Cape May County beaches experienced moderate erosion.	The Borough experienced \$200,000 in damage to its engineered beach*.
September 29, 2016	Nor'easter	*No	A stalled frontal boundary caused heavy rain and high tides throughout the region.	\$300k mostly engineered beach damage with increased beach and dune vulnerability; beach and dune system already heavily damaged from previous storms in 2015 and 2016*
July 29, 2017	Coastal Flood and Heavy Rain	No	A rare summertime Nor'easter tracked just offshore producing heavy rain, thunderstorms and wind. Coastal flooding and beach erosion also occurred.	The Borough spent \$10,000 on debris removal.



Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
March 4, 2018	Coastal Flood	*No	A large and very deep area of low pressure moved slowly east over the open waters of the North Atlantic Ocean through Sunday March 4th. This led to a variety of weather hazards during this time frame. Strong Northwest winds with gusts up to around 60 mph occurred on March 2nd and 3rd. This led to widespread damage to trees and power lines, causing extensive power outages across the region. Minor coastal flooding over multiple tide cycles occurred along the New Jersey coast March 2nd through 4th.	The Borough experienced \$4.63 million in damage to its beach and dunes.
October 27, 2018	Coastal Flood	No	Strong low pressure moved northward along the coasts of Delaware and New Jersey on October 27. The system brought moderate to major coastal flooding and high winds to the coastal counties of New Jersey during the morning and early afternoon hours. Moderate coastal flooding occurred along the back bays, Delaware Bay and other tidal waterways in the county. There was widespread roadway flooding with water reaching some buildings.	The Borough spent \$20,000 on debris removal.
January 20, 2020 and continuing	January 20, 2020 and continuing	Yes	A novel form of coronavirus (SARS-CoV-2) spread rapidly worldwide in late 2019-2020, with the northeastern United States being particularly hard-hit.	The Borough experienced \$30,000 in expenses from the pandemic (estimated as of 12/10/2020). As of December 22 nd , 2020, the Borough has had 53 cases and no fatalities.
July 10, 2020	Tropical Storm Fay	No	Tropical Storm Fay made landfall near the border of Ocean and Atlantic County bringing heavy rain and flash flooding.	The Borough spent \$30,000 on debris removal.
September 29, 2020	Tropical Storm Isaias	Yes	Tropical Storm Isaias	The storm cost \$150,000 in debris removal, emergency response, beach and dune damage.

Source: Borough of Avalon, 2020

Note: *Avalon beach and dune system are engineered under control of the US Army Corps. Of Engineers. Funding for beach and dune replenishment is through the Corps.

9.2.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of Avalon risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of Avalon.

- Number of repetitive loss (RL) properties: 146





- Number of severe repetitive loss (SRL) properties: 34
- Number of RL/SRL properties that have been mitigated: 80

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.2-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
21st. Street Bridge	Bridge	X	X
25th. Street Bridge	Bridge	X	X
Avalon Canal Bridge	Bridge	X	X
Avalon Branch Library	Library	X	X
AVALON VOLUNTEER FIRE DEPARTMENT	Fire Stations	X	X
Commodore Bay Marina	Marinas	X	X
Sunrise Marina	Marinas	X	X
Avalon Bay Park Marina	Marinas	X	X
Avalon Police Department	Police Stations	X	X
Avalon OEM	EOC	X	X
Avalon Branch Library	Library	X	X
8Th St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
19Th St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
23Rd St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
29Th St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
26Th St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
32Nd St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
33Rd St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
34Th St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
21St St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
22Nd St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
11Th St Stormwater Pump Station	Wastewater Treatment Facilities	X	X
COMMUNITY HALL	Polling Places		X
AVALON RESCUE	EMS	X	X
AVALON ELEMENTARY SCHOOL	Education	X	X
Avalon	Municipal Facilities	X	X
BORO OF AVALON Municipal Hall	Municipal Facilities	X	X
CAPE MAY COUNTY MUA	MUA	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The Borough experiences Nuisance flooding of the north end beach block area. Design and cost estimates underway. The Borough intends to fund and complete the project in the north end of town in the beach blocks from 10th St. to 19th St. in 2021.
- Avalon experiences tidal flooding of Ocean Drive and surrounding residential neighborhood from Bay Park Marina.



- The Borough has a Continuity of Operations Plan (CoOP) that requires updating to address hazards and government functions.
- The National Weather Service's StormReady Program recognizes communities that recognize natural hazard vulnerability and take steps to inform residents and prepare for those events to take place. Avalon is seeking to be recognized in this program.
- The Borough has an adopted floodplain management plan that assists with its CRS rating. The plan will be undergoing a five-year re-examination in 2021.
- Avalon has a large visitor base and second home population that do not have readily available resources or knowledge of potential flooding event. The Borough seeks to provide a locally controlled means to notify residents of impending flooding.
- Avalon's back bay waterfront feature stretches of bulkheads that prevent erosion and protect upland properties from wave damage. Bulkheads have been replaced piecemeal and are at varying heights. Low-lying bulkheads cause water to inundate during surge events.
- Borough owned bulkheads are being replaced at 20th St. and Fifth Ave., 26th St. and Ocean Drive, and 28th Street and Ocean Drive. Other bulkhead replacements are under review to be funded in 2021 – 2022.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Avalon that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Avalon has significant exposure. A map of the Borough of Avalon hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Avalon. The Borough of Avalon has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, Avalon assented to the proposed hazard ranking.



Table 9.2-13. Borough of Avalon Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
High	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Medium

9.2.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
PP-6 / 7.1.2-8	Support homeowners who desire to remediate their repetitive loss properties.	Borough Staff	Ongoing capability		
PP-3 / 7.1.2-5	Continue to implement the Repetitive Loss Reduction Plan.	Construction Office	Ongoing capability		
PP-4 / 7.1.2-6	Continue to pursue funding opportunities to address repetitive loss properties.	Borough Staff	Ongoing capability		
PR-1 / 7.1.1-1	Continued participation in CRS program.	Borough Staff	Ongoing capability		
PR-2 / 7.1.1-2	Implement, evaluate, and revise FMP annually.	POC – R. Edward Dean, OEM Coordinator; Scott Wahl OEM Deputy Coordinator	Ongoing capability		
PP-1 / 7.1.2-3	Comply with NFIP policies.	R. Edward Dean, Construction Official, Floodplain Administrator	Ongoing capability		



Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
PP-5 / 7.1.2-7	Continue to require three-foot freeboard.	Construction Office, Borough Flood Loss Prevention Ordinance	Ongoing capability		
PP-7 / 7.1.2-9	Maintain verified benchmarks per CRS requirements	Borough Engineer	Ongoing capability		
PP-8 / 7.1.2-10	Enforce Coastal A Zone Standards for V-Zone Construction.	Construction Office	Ongoing capability		
ES-1 / 7.1.4-1	Develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing capability		
ES-2a / 7.1.4-2	Maintain mutual aid agreements with neighboring communities.	Borough Administration	Ongoing capability		
PR-7, 8 / 7.1.1-7, 8	Conduct flood mitigation training of Borough staff.	Public Works Department (and Engineer)	Ongoing capability		
SP-1 / 7.1.5-1	Construct additional pump stations along County Road 619 (Ocean Drive).	Borough Staff and Engineer	Complete		
SP-2 / 7.1.5-3	Elevate Borough-owned back-bay bulkheads.	Borough Staff and Engineer	In progress	X	2021-AvalonBoro-007
SP-3 / 7.1.5-4	Encourage back-bay fronting residents to elevate bulkheads.	Borough Staff	Ongoing capability		
PI-1 / 7.1.6-1	Continue public outreach to encourage installation of FEMA-compliant flood vents.	Construction Office	Ongoing capability		
PP-2 / 7.1.2-4	Continue to monitor and survey the beaches.	Borough Engineer	Ongoing capability		
PR-3 / 7.1.1-3	Continue to enforce stormwater management ordinances.	Construction Office	Ongoing capability		
NR-1 / 7.1.3-1	Continue to pursue opportunities to preserve open space.	Construction Office	Ongoing capability		
(former BA-16)	Continue to enforce building codes and re-evaluate ordinances for	Construction Office	Ongoing capability		



Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	potential positive amendments.				
PR-4 / 7.1.1-4	Continue to enforce building codes.	Construction Office	Ongoing capability		
PR-5 / 7.1.1-5	Re-evaluate ordinances for potential positive amendments.	Construction Office	Ongoing capability		
SP-9 / 7.1.5-11	Continue to conduct regular beach and dune maintenance activities	Borough Staff	Ongoing capability		
NR-2 / 7.1.3-2	Continue volunteer dune grass planting program.	Borough Staff and Volunteers	Ongoing capability		
NR-3 / 7.1.3-3	Continue to protect the high dunes	Borough Staff	Ongoing capability		
(former BA-19)	Continue outreach efforts to provide informational materials to homeowners, builders, and realtors regarding floodplain management. Generate increased interest in floodplain management among homeowners and business owners. interest in floodplain management among homeowners and business owners.	Construction Office	Ongoing capability		
PI-2 / 7.1.6-2	Continue to provide information materials to homeowners, builders, and realtors regarding floodplain management.	Borough Staff	Ongoing capability		
NR-4 / 7.1.3-4	Continue stream scouring and illicit connection programs.	DPW and Borough Engineer	Ongoing capability		
ES-2c / 7.1.4-2	Maintain pre-disaster contracts with disaster recovery contractor for debris removal.	Borough Staff	Ongoing capability		
ES-2c / 7.1.4-2	Pursue pre-disaster contracts for providing home and family services for emergency personnel during disasters.	Borough Staff	Ongoing capability		



Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
ES-2d / 7.1.4-2	Continue to maintain pre-disaster contract for disaster-recovery services of public buildings and facilities.	Borough Staff	Ongoing capability		
ES-2e / 7.1.4-2	Maintain Contract with Cumberland County Board of Vocational Education to provide evacuation sheltering services.	Borough Staff	No progress		
ES-2f / 7.1.4-2	Maintain contract for portable generator services for evacuation shelter.	Borough Staff	Ongoing capability		
ES-2g / 7.1.4-2	Maintain contract with local bus company for evacuation services for shut-ins.	Borough Staff	Ongoing capability		
SP-4 / 7.1.5-5	Install SCADA systems for oceanfront pump stations.	Water System Operator and Engineer	Ongoing capability		
SP-5 / 7.1.5-6	Provide emergency connections for portable generator at oceanfront pump stations.	Water System Operator and Engineer	Ongoing capability		
SP-6 / 7.1.5-7	Increase the capacity of the stormwater system where deficiencies are revealed.	Borough Engineer	In progress	X	2020-AvalonBoro-001
ES-3 / 7.1.4-3	Maintain ID card program to control re-entry into Borough after major disasters requiring evacuation.	Borough Staff	Ongoing capability		
ES-4 / 7.1.4-4	Implement program to keep motorists off Ocean Drive during flooding events.	Borough Staff	Ongoing capability		
ES-5 / 7.1.4-5	Research app for mobile devices to use for flood hazard notifications and emergencies.	Borough Staff	No progress		
ES-6 / 7.1.4-6	Expand "Code Red" system to include tourists and visitors.	Borough Staff	Ongoing capability		
ES-7 / 7.1.4-7	Consider signage and/or reverse lane system for	Borough Staff and Engineer	No progress		



Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	30th Street.				
ES-8 / 7.1.4-8	Maintain tide reference gauges to provide residents with a means to more accurately interpret public announcements related to flooding levels and surges.	Borough Engineer	Ongoing capability		
ES-9a – 9d / 7.1.4-9	Continue to provide flood warnings and information on: 9a - local cable channel 9b – web site 9c – AM 1630 radio station 9d – social media	Borough Staff	Ongoing capability		
ES-9e / 7.1.4-9	Continue to provide flood warnings over community-wide public address system	Borough Staff	Ongoing capability		
ES-9f / 7.1.4-9	Continue to use Variable Message Signs along roadways to alert public of emergencies.	Borough Staff	Ongoing capability		
ES-10 / 7.1.4-10	Maintain public records at remote location.	Borough Staff	Ongoing capability		
ES-11 / 7.1.4-11	Maintain operation of mobile pet shelter.	Borough Staff	Ongoing capability		
ES-12 / 7.1.4-12	Maintain flood response vehicle fleet.	Department of Public Works	Ongoing capability		
ES-13 / 7.1.4-13	Maintain Continuity of Operations / Continuity of Government Plan.	Borough Staff	Ongoing capability		
PR-6 / 7.1.1-6	Monitor and inspect 8th Street jetty and North End Seawall for settlement or damage.	Borough Engineer	Complete		
SP-8 / 7.1.5-10	Evaluate north end shore protection and beach stabilization alternatives from pending municipal	Borough Engineer and Staff	Ongoing capability		



Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	engineer's report.				
NR-5 / 7.1.3-5	Explore opportunities to restore degraded tidal marsh in back bay utilizing thin-layer placement of dredged material.	Borough Engineer and Staff	Ongoing capability		
NR-6 / 7.1.3-6	Continue to implement dune grass fertilization program.	Borough Staff	Ongoing capability		
NR-7 / 7.1.3-7	Maintain and enforce adopted sediment control ordinance for swimming pool dewatering.	Borough Staff	Ongoing capability		
NR-8 / 7.1.3-8	Continue to implement invasive species management and mitigation.	Borough Staff	Ongoing capability		
PI-3 / 7.1.6-3	Develop and implement system to provide public with understanding of relationship to forecasted storm surge to actual flooding conditions.	Borough Staff and Engineer	Ongoing capability		
PI-4 / 7.1.6-4	Establish and publicize designated locations for parking cars during high tidal conditions.	Borough Staff and Engineer	Ongoing capability		
PI-5 / 7.1.6-5	Provide flood hazard educational programs for public at library.	Borough Staff	Ongoing capability		
PI-6 / 7.1.6-6	Maintain Borough-wide elevation map for brochures.	Borough Staff and Engineer	Ongoing capability		
PI-7 / 7.1.6-7	Continue to inform public about flood hazards through Mayor's presentations to various community groups.	Mayor	Ongoing capability		
PI-8 / 7.1.6-8	Provide information to applicable property owners regarding the Repetitive Loss Reduction Plan.	Construction Office	Ongoing capability		



Table 9.2-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
PI-9 / 7.1.6-9	Expand public education of flood hazards through all available media channels	Borough Staff	Ongoing capability		

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of Avalon participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough of Avalon participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.2-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Avalon would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.2-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.2-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-AVALON-001	North End Stormwater Mitigation Project	<p>Problem: The Borough experiences Nuisance flooding of the north end beach block area. Design and cost estimates underway. The Borough intends to fund and complete the project in the north end of town in the beach blocks from 10th St. to 19th St. in 2021.</p> <p>Solution: The Borough proposes to increase stormwater drainage capacity in the area. Upgrade stormwater pump station(s). Design and cost estimates underway. The Borough intends to fund and complete the project in the north end of town in the beach blocks from 10th St. to 19th St. in 2021.</p>	Existing	Flood; Severe Weather; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 5	Borough Engineer, Middlesex Water Co., Borough Administration	Local, FMA, HMGP	Decrease in occurrence and severity of north end nuisance flooding	High	2021	High	SIP	PP
2021-AVALON-002	Bay Park Marina Rehabilitation	<p>Problem: Avalon experiences tidal flooding of Ocean Drive and surrounding residential neighborhood from Bay Park Marina.</p> <p>Solution: The Borough proposes to regrade marina basin to control flooding of the surrounding area. Install new bulkhead to current standards. Utilize natural flood barrier and turtle nesting habitat in areas without bulkhead to control flooding. Install new boat ramp to current design standards (safety). Elevate marina administration building for resiliency.</p>	Existing	Flood; Severe Weather; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 5	Borough Engineer, Taylor Design Group, Borough Administration, Avalon Recreation	Local, Cape May County Open Space, FMA, HMGP	Reduced tidal flooding impact in residential neighborhood surrounding the marina	\$4.7 million	2021 - 2022	High	SIP	PP
2021-AVALON-003	Adopt CoOP	<p>Problem: The Borough has a Continuity of Operations Plan (CoOP) that requires updating to address hazards and government functions.</p> <p>Solution: The Borough proposes to Review, amend, adopt new CoOP for the Borough of Avalon</p>	Existing – out of date	All hazards	1, 3, 4, 6	Borough Administration, Borough Office of Emergency Management	Local	Establish continuity of operations plan for both Emergency Management and	\$10 K	2021	High	LPR	ES



Table 9.2-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-AVALON-004	StormReady Status	<p>Problem: The National Weather Service's StormReady Program recognizes communities that recognize natural hazard vulnerability and take steps to inform residents and prepare for those events to take place. Avalon is seeking to be recognized in this program.</p> <p>Solution: Avalon proposes to complete requirements for Borough to be recognized as a StormReady Community</p>	New	All hazards	1, 3, 4, 6	Avalon Administration, Avalon Office of Emergency Management, DPW, Borough Engineer	Local	Recovery periods Storm Ready Community designation	\$10 K	2021	High	LPR, EAP	ES
2021-AVALON-005	Evaluate, and revise Floodplain Mitigation Plan (FPM) – 5-year review	<p>Problem: The Borough has an adopted floodplain management plan that assists with its CRS rating. The plan will be undergoing a five-year re-examination in 2021.</p> <p>Solution: The FPM will be fully reviewed in 2021, presented to Borough Council and members of the public, and adopted in late 2021.</p>	Existing	Flood; Severe Weather; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	Borough Engineer, Avalon OEM, Avalon Chamber of Commerce	Local	Increase awareness of flood hazard zones in resort	\$10 K	2021	High	LPR	PI
2021-AVALON-006	Establish a local tide gauge	<p>Problem: Avalon has a large visitor base and second home population that do not have readily available resources or knowledge of potential flooding event. The Borough seeks to provide a locally controlled means to notify residents of impending flooding.</p> <p>Solution: The Borough proposes to install local tide gauge that can be coordinated with data sets to provide early warning of impending tidal flooding</p>	New	All hazards	1, 2, 3, 4, 6	Borough Administration, Borough Engineer, DPW	Local, HMGP	Early notification of impending flood events	\$50 K	2021	High	EAP	PI
2021-AVALON-007	Bulkhead improvements	Problem: Avalon's back bay waterfront feature stretches of bulkheads that prevent erosion and protect upland properties from wave damage. Bulkheads have been replaced piecemeal and are at varying heights. Low-lying bulkheads	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate	1, 3, 4, 6	Avalon Administration, DPW, Borough Engineer	Local, FMA, HMGP	Reduce tidal flooding impact	Unknown	2021 & 2022	High	SIP	PP



Table 9.2-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		<p>cause water to inundate during surge events.</p> <p>Borough owned bulkheads are being replaced at 20th St. and Fifth Ave., 26th St. and Ocean Drive, and 28th Street and Ocean Drive. Other bulkhead replacements are under review to be funded in 2021 – 2022.</p> <p>Solution: In 2020, Avalon completed the replacement of the 21st Street bulkhead and awarded a contract for the replacement of bulkheads at 22nd Street/Sixth Avenue, 26th Street at Ocean Drive, and 80th Street. The 72nd Street bulkhead at Ocean Drive will also be replaced in 2021. In 2021, Avalon will consider replacing one or more bulkheads, including the 23rd Street, 29th Street, 33rd Street, and 34th Street bulkheads along Ocean Drive. The replacement of these bulkheads to a higher elevation will result in reduction in flooding from major tidal events.</p>		Change and Sea Level Rise									

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

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



- *Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.*
- *Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.*

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*



Table 9.2-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-AVALON-001	North End Stormwater Mitigation Project	1	1	0	1	1	1	0	1	1	1	1	1	1	0	11	High ⚠
2021-AVALON-002	Bay Park Marina Rehabilitation	1	1	1	1	1	1	-1	1	1	1	1	1	0	0	10	High
2021-AVALON-003	Adopt Continuity of Operations Plan	1	0	1	1	1	1	1	0	1	1	1	1	1	0	11	High
2021-AVALON-004	Storm Ready Community	1	1	1	1	1	0	0	0	1	1	1	1	0	0	9	High
2021-AVALON-005	Evaluate, and revise Floodplain Mitigation Plan (FPM) – 5-year review	1	1	1	1	1	0	1	1	1	1	0	1	1	1	12	high
2021-AVALON-006	Establish local tide gauge	1	1	1	1	1	0	0	1	1	1	0	1	1	1	11	High
2021-AVALON-007	Bulkhead improvements	1	1	0	1	1	1	0	1	1	1	0	1	1	1	11	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.2-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and SLR	X		X			X		
Coastal Erosion	X		X					
Disease Outbreak	X		X					
Drought	X		X					
Flood	X		X			X		
Hurricane	X		X			X		
Nor'Easter	X		X			X		
Severe Weather	X		X			X		
Severe Winter Weather	X		X					
Tsunami	X		X					
Wildfire	X		X					

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.2-1. Borough of Avalon Hazard Area Extent and Location Map 1

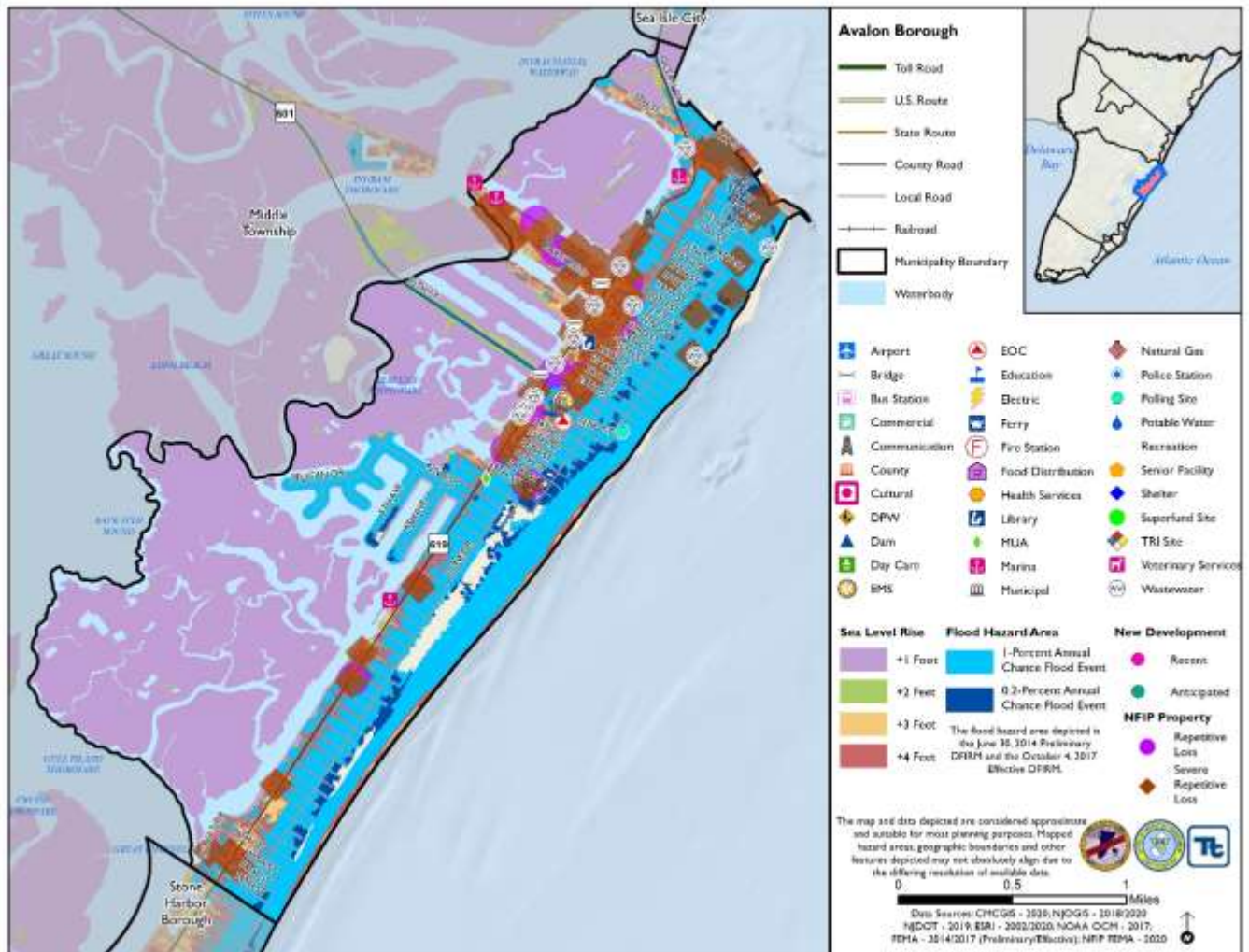




Figure 9.2-2. Borough of Avalon Hazard Area Extent and Location Map 2

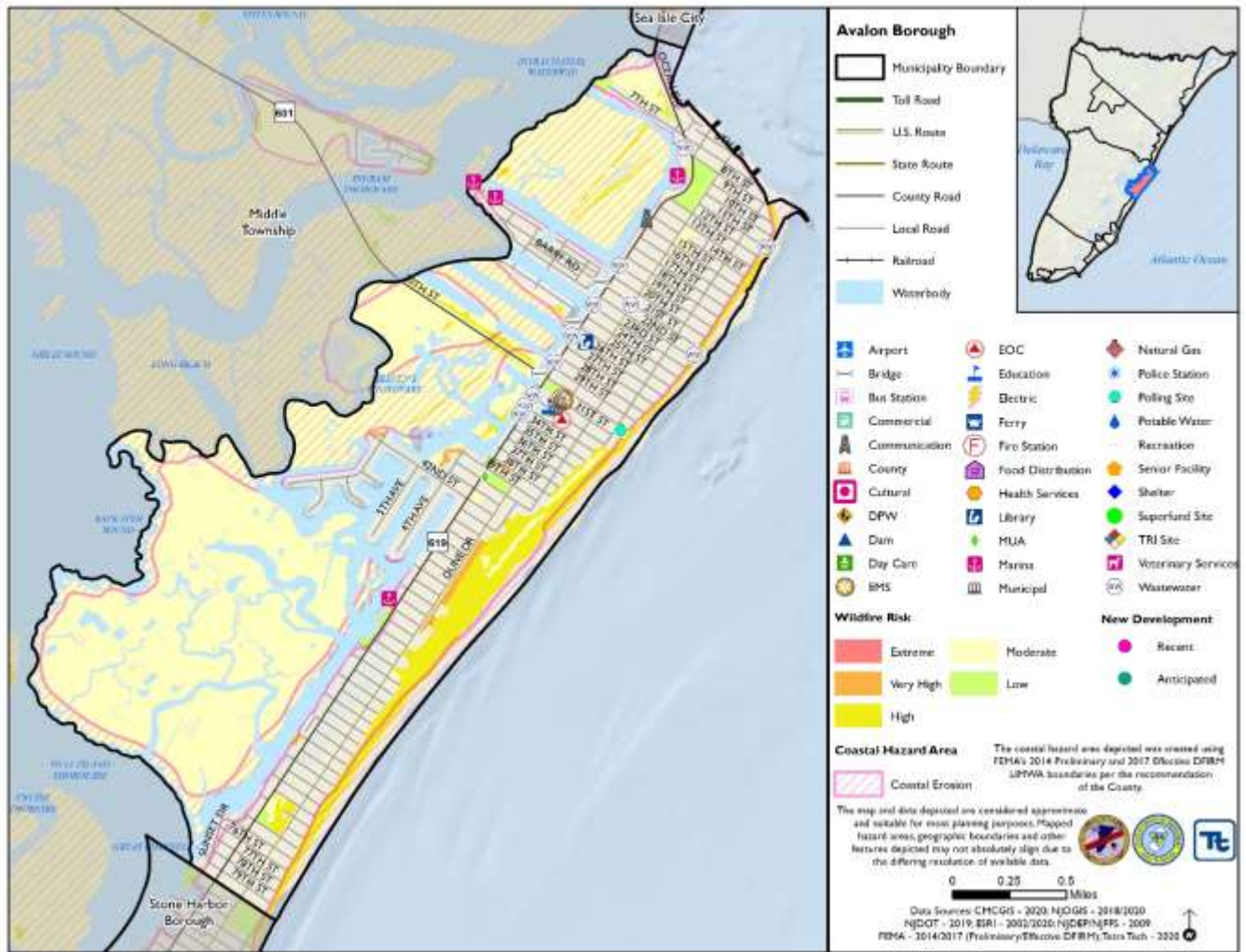
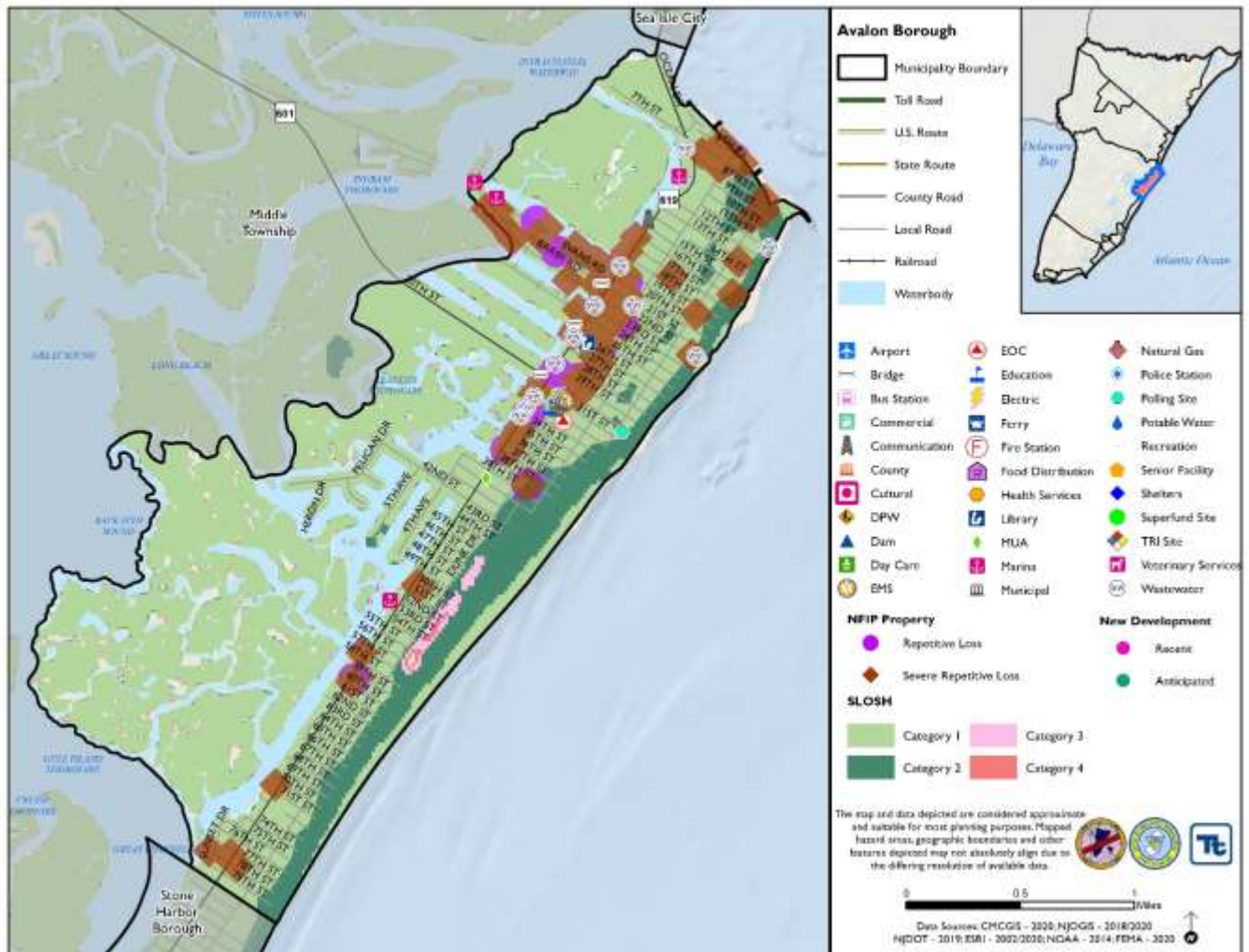




Figure 9.2-3. Borough of Avalon Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	North End Stormwater Mitigation Project		
Project Number:	2021-AVALON-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	The Borough experiences Nuisance flooding of the north end beach block area. Design and cost estimates underway. The Borough intends to fund and complete the project in the north end of town in the beach blocks from 10th St. to 19th St. in 2021.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough proposes to increase stormwater drainage capacity in the area. Upgrade stormwater pump station(s). Design and cost estimates underway. The Borough intends to fund and complete the project in the north end of town in the beach blocks from 10th St. to 19th St. in 2021.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Decrease in occurrence and severity of north end nuisance flooding
Useful Life:	50 years	Goals Met:	1, 3, 4, 5
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within two years
Estimated Time Required for Project Implementation:	2021	Potential Funding Sources:	Local, FMA, HMGP, BRIC
Responsible Organization:	Borough Engineer, Middlesex Water Co., Borough Administration	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	Cost prohibitive
	Drainage improvements	High	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	North End Stormwater Mitigation Project	
Project Number:	2021-AVALON-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Maintains road/emergency access
Property Protection	1	
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	Project is supported by the Borough
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	Project mitigates social disruption due to lack of services
Administrative	1	
Multi-Hazard	1	Project addresses multiple types of flooding hazards
Timeline	1	
Agency Champion	1	Borough serves as project champion
Other Community Objectives	0	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Bay Park Marina Rehabilitation		
Project Number:	2021-AVALON-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Avalon experiences tidal flooding of Ocean Drive and surrounding residential neighborhood from Bay Park Marina.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough proposes to regrade marina basin to control flooding of the surrounding area. Install new bulkhead to current standards. Utilize natural flood barrier and turtle nesting habitat in areas without bulkhead to control flooding. Install new boat ramp to current design standards (safety). Elevate marina administration building for resiliency.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduced tidal flooding impact in residential neighborhood surrounding the marina
Useful Life:	30 years	Goals Met:	1, 3, 5
Estimated Cost:	\$4.7 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 3 years
Estimated Time Required for Project Implementation:	2021-2022	Potential Funding Sources:	Local, Cape May County Open Space, FMA, HMGP
Responsible Organization:	Borough Engineer, Taylor Design Group, Borough Administration, Avalon Recreation	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Shoreline hardening	High	Not ecological
	Marina Rehab	\$4.7m	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bay Park Marina Rehabilitation	
Project Number:	2021-AVALON-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Inhibits inundation of adjacent properties
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	1	Project is supported by the Borough
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	Project mitigates social disruption due to flooding
Administrative	1	
Multi-Hazard	1	Project addresses multiple hazards
Timeline	1	
Agency Champion	0	
Other Community Objectives	0	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Bulkhead improvements		
Project Number:	2021-AVALON-007		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	<p>Avalon's back bay waterfront feature stretches of bulkheads that prevent erosion and protect upland properties from wave damage. Bulkheads have been replaced piecemeal and are at varying heights. Low-lying bulkheads cause water to inundate during surge events.</p> <p>Borough owned bulkheads are being replaced at 20th St. and Fifth Ave., 26th St. and Ocean Drive, and 28th Street and Ocean Drive. Other bulkhead replacements are under review to be funded in 2021 – 2022.</p>		
Action or Project Intended for Implementation			
Description of the Solution:	<p>In 2020, Avalon completed the replacement of the 21st Street bulkhead and awarded a contract for the replacement of bulkheads at 22nd Street/Sixth Avenue, 26th Street at Ocean Drive, and 80th Street. The 72nd Street bulkhead at Ocean Drive will also be replaced in 2021. In 2021, Avalon will consider replacing one or more bulkheads, including the 23rd Street, 29th Street, 33rd Street, and 34th Street bulkheads along Ocean Drive. The replacement of these bulkheads to a higher elevation will result in reduction in flooding from major tidal events.</p>		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Reduce tidal flooding impact
Useful Life:	30 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	Unknown-high	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within two years
Estimated Time Required for Project Implementation:	2021 & 2022	Potential Funding Sources:	Local, FMA, HMGP
Responsible Organization:	Avalon Administration, DPW, Borough Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Drainage
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Bulkhead Removal	High	Loss of land
	Bulkhead elevation	Unknown-high	Enhanced mitigation
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bulkhead improvements	
Project Number:	2021-AVALON-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Bulkhead improvements protect adjacent properties
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	Borough supports the project
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	Borough is capable of administering projects
Multi-Hazard	0	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



9.3 CITY OF CAPE MAY

This section presents the jurisdictional annex for the City of Cape May. The annex includes a general overview of the City of Cape May; an assessment of the City of Cape May's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.3.1 Hazard Mitigation Planning Team

The City of Cape May followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation). The following individuals are the City of Cape May's identified HMP update primary and alternate points of contact and NFIP Floodplain Administrator.

Table 9.3-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Updated Primary Point of Contact	Alternate Point of Contact
Name / Title: Jerry Inderwies, Jr., City Manager Address: 643 Washington St, Cape May, NJ 08204 Phone Number: (609) 884-9537 Email: Jinderwies@capemaycity.com		Name / Title: Michael Voll, City Manager Address: 643 Washington St, Cape May, NJ 08204 Phone Number: (609) 884-9537 Email: mvoll@capemaycity.com	Name / Title: Joseph Picard, PW Superintendent Address: 833 Canning House Lane, Cape May, NJ 08204 Phone Number: (609) 884-9570 Email: joep@capemaycity.com
NFIP Floodplain Administrator			
Name / Title: Louis Belasco, Floodplain Manager Address: 643 Washington St, Cape May, NJ 08204 Phone Number: (609) 884-9545 Email: assessor@capemaycity.com			
Name		Title	Method of Participation
Lou Belasco		CRS Coordinator/Tax Assessor	NFIP Floodplain Administrator, Annex Contribution, Review/Attended Meetings
Joseph Picard, PW Superintendent		DPW Superintendent	Alternate Point of Contact, Annex Contribution/Annex Review
Jerry Inderwies, Jr.		City Manager	Primary Point of Contact, Meeting Attendance/Annex Review
Clarence F. Lear		Mayor	Reviewed and Signed Off on Annex
Thomas Thornton		Engineer	Reviewed and Signed Off on Annex
Neil Young		Fiscal/CFO	Reviewed and Signed Off on Annex
Lou Vito, Jr.		Building Code Official	Reviewed and Signed Off on Annex
Craig Hurlless		Land Use Planner	Reviewed and Signed Off on Annex
Anthony Marino		Chief, Police Department	Reviewed and Signed Off on Annex
Alexander Coulter		Chief, Fire Department	Took Stakeholder Survey, Reviewed and Signed Off on Annex
Rick Lundholm		Deputy Fire Chief	Took Stakeholder Survey
Christine Bry		Director of People Operations, Cape May Brewing Company	Took Stakeholder Survey



9.3.2 Jurisdiction Profile

Cape May is a city at the southern tip of Cape May Peninsula in Cape May County, New Jersey, where the Delaware Bay meets the Atlantic Ocean. It is bounded on the north by the Township of Lower, on the east and the south by the Atlantic Ocean and Delaware Bay, and on the west by the Township of Lower, and Borough of West Cape May. It is part of the Ocean City Metropolitan Statistical Area.



According to the U.S. Census, the 2010 population for the City of Cape May was 3,607. The estimated 2017 population was 3,491, a 3.2 percent decrease from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 5.6 percent of the population is 5 years of age or younger and 29.3 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.3.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.3-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.3-1 at the end of this annex illustrates the geographically delineated hazard areas and the location of potential new development.

Table 9.3-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	16	0	17	0	5	0	6	0	24	0
Multi-Family	0	0	0	0	0	0	0	0	2	0
Other (commercial, mixed-use, etc.)	2	0	2	1	2	1	1	0	1	0
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
DiDonato Tract	Residential		13		Pittsburgh and Missouri Aves		Special Flood Hazard Area		Approved	



Pela Development	Residential	15	New York Ave (1500 Block)	Special Flood Hazard Area	Active
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Desalination Plant Expansion	Governmental	1	830 Canning House Lane	Special/Moderate Flood Hazard Area	Planning and Permitting

* Only location-specific hazard zones or vulnerabilities identified.

9.3.4 Capability Assessment

The City of Cape May performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.3.4). The City of Cape May identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)City Construction Codes, Uniform, Chapter 199, Adopted by City Council in 1997 & Amended in entirety 10-20-2015.In 2016, the City amended this Chapter, adding 199-6. Certificate of Flood Damage Prevention Compliance. This Section requires the inspection of buildings, structures, or units prior to transfer of title to determine compliance with the Flood Damage Prevention Ord. as an example integrating mitigation.The City can add green building and other resiliency constructions methods with incentives as a possible mitigation action.					



Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Zoning Code	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. City Zoning Code, Chapter 525, Adopted by City Council in 1997 & amended in entirety 12-2-2004 with subsequent amendments. The purposed of this Section are consistent with the purposes on the Municipal Land Use Law. Article VI – Beach Strand and Dune Stabilization Districts, incorporate aspects of mitigation planning. It is the intent of the Beach Strand and Dune Stabilization Districts to protect the City's important beach resources from development and use that is inconsistent with their natural character or which could have an adverse impact on them. 					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Subdivision of Land, Chapter 445, Adopted by City Council in 1997 and subsequently amended. The purpose of this Chapter shall be to provide rules, regulations and standards to guide land subdivision in Cape May City in order to promote the public health, safety, convenience and general welfare of the City and to carry out the objectives of the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.). It shall be administered to insure the orderly growth and development, the conservation, protection and proper use of land and adequate provisions for circulation, utilities and services, and the conservation and environmental protection of all land, water and air resources within the jurisdiction of Cape May City. The Subdivision Ordinance requires a subdivider of any lands having natural features such as watercourses, floodplains, wetlands or sand dune areas shall, as a condition of completeness of his application pursuant to § 445-9, secure and submit to the Secretary of the Planning Board at the time of filing a written determination from all applicable state and federal jurisdictions, as to the exact extent and location of such natural resources. 					
Stormwater Management	yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Stormwater Management Ordinance, Chapter 437, Adopted by City Council, May 10, 2005. It is the purpose of this article to establish minimum stormwater management requirements and controls for "major development," as defined in § 437-2 of this chapter. In an effort to protect local water quality and human health, for purposes of this Article I of Chapter 437, major development as defined for new, redevelopment projects and infill projects in the City of Cape May is more stringent than as defined in the New Jersey Stormwater Rule (N.J.A.C. 7:8). As an aspect of mitigation, this Chapter requires stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards in § 437-4 of this chapter. To the maximum extent practicable, these standards shall be met by incorporating nonstructural stormwater management strategies into the design. The standards in this Chapter apply only to new major development and are intended to minimize the impact of stormwater runoff on water quality and water quantity in receiving water bodies and maintain groundwater recharge. 					
Post-Disaster Recovery	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Natural Disasters, Access Limited During, Chapter 331, Adopted by City Council, May 21, 2004. The Ordinance limits access to the City following a natural disaster. In the event that the City is evacuated due to natural disaster and the Department of Emergency Management, 					



Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
after consulting with the Chief of Police, determines that such disaster has resulted in damage which requires substantial cleanup, including, without limitation, damage to the City's roads, traffic signals and/or public utilities, the Department of Emergency Management may issue an order which allows only City employees and individuals who own property within the City to enter the City, but only after such time as the City has been substantially cleaned up, including, without limitation, the clearing of roads, repair of traffic signals and repair of public utilities.					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. <ul style="list-style-type: none">Real Estate disclosure of flood hazards could become an Ordinance Requirement for Real Estate Agents and/or a written policy for disclosing a property's Flood information. Also, providing flood insurance information for impacted properties could be an additional requirement. It should be noted that Section 258-3 of the City's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard					
Growth Management	No	State, County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance ; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.Cape May City – State Agency Opportunities and Constraints Analysis, January 10, 2011, no formal adoption indicated. The Office for Planning Advocacy (OPA) and our State Agency partners have preliminarily assessed local opportunities and constraints in the City of Cape May relating to existing development, current zoning regulations, infrastructure and natural resources. This report provides for a comparison of information within the Municipal Self-Assessment Report with the most up-to-date regional and statewide data to determine whether trend growth, or the continuance of existing development patterns, is sustainable and viable based on the information provided. trend growth can then be compared to plan growth, or that which is aligned with the New Jersey State Development and Redevelopment Plan (State Plan) and is based on the principles of smart growth. Although this is not an Ordinance, it does address the City's efforts toward consistency with the State Plan.Flood Hazard Areas were included in the Analysis – It stated that the recently adopted Flood Hazard Area Control Act rule (NJAC 7:13) regulates development within the floodplain and the Riparian Zone (50 - 300 feet adjacent to the water). Under this rule all projects that are adjacent to a “regulated water” that is designated C1 or is upstream within the HUC 14 of a “regulated water”, regardless of whether they are mapped, require a Flood Hazard Area Control Act permit. Cape May City should take the Flood Hazard Area Control Act and associated buffers into consideration when performing visioning requirements of Plan. There are no Groundwater Recharge Areas, Wellhead Protection Areas or Priority Species Habitat mapped by DEP. The City is welcome to use more detailed data that it has collected regarding any of these environmental constraints.					
Site Plan Review	Yes	County & Local?	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.					



Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> Site Plan Review, Chapter 417, Adopted by City Council, May 12, 2004 and subsequently amended. As it relates to mitigation purposed of this Chapter are to: <ul style="list-style-type: none"> Preserve existing natural resources and give proper consideration to the physical constraints of the land. Develop proper safeguards to minimize the impact on the environment, including but not limited to soil erosion and sedimentation and air and water pollution. Ensure the provision of adequate water supply, drainage and stormwater management, sanitary facilities, and other utilities and services. 					
Environmental Protection	No	-	No	-	-
Comment: <ul style="list-style-type: none"> The Site Plan Review Ordinance, Chapter 417, does require an Environmental Impact Statement as part of the application for Preliminary Site Plan approval, but there is not a Environmental Protection Ordinance. 					
Flood Damage Prevention	Yes	Federal, State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Floodplain Damage Prevention, Chapter 258, Adopted by City Council in 1997 & Amended in its entirety 8-1-2017. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: <ul style="list-style-type: none"> Protect human life and health; Minimize expenditure of public money for costly flood control projects; Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public and risk to those individuals who are providing rescue efforts; Minimize prolonged business interruptions; Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard; Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; Ensure that potential buyers are notified that property is in an area of special flood hazard; and Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. Integrated mitigation actions in this Section include methods and provisions for: a. Restricting or prohibiting uses which are potentially dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; b. Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; c. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters; d. Controlling filling, grading, dredging, and other development which may increase flood damage; and, e. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas. In a Special Flood Hazard Area regulated residential construction is required to have two feet of freeboard above the BFE. 					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	Yes	Local/HPC	No	Yes	-
Comment: Addition to allow electric vehicle charging stations; solar panels; energy aggregation.					
Disaster Recovery Ordinance	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Natural Disasters, Access Limited During, Chapter 331, Adopted by City Council, May 21, 2004. The Ordinance limits access to the City following a natural disaster. In the event that the City is evacuated due to natural disaster and the Department of Emergency Management, after consulting with the Chief of Police, determines that such disaster has resulted in damage which requires substantial cleanup, including, without limitation, damage to the City's roads, traffic signals and/or public utilities, the Department of Emergency Management may issue an 					



Table 9.3-3. Planning, Legal and Regulatory Capability

				Have aspects of this been integrated into your mitigation plan?	
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
order which allows only City employees and individuals who own property within the City to enter the City, but only after such time as the City has been substantially cleaned up, including, without limitation, the clearing of roads, repair of traffic signals and repair of public utilities.					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">Open Space and Recreation Land Acquisition, Development and Maintenance, Chapter 356, adopted by City Council in 2002 & amended in its entirety on 6-6-2016. The purpose of this chapter is to establish a minimum annual appropriation for open space and recreation land acquisition and associated costs, which shall include, without limitation, legal, appraisal, survey, engineering and preservation acquisition debt servicing in order to provide a guaranteed source of funds to match Green Acres funding and for the development and maintenance of open space and recreation land.The acquisition and maintenance of open space is an aspect of mitigation included in the HMP.					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.New master plan adopted 2019Master Plan Re-examination, adopted by the City Planning Board, 2-27-2009 – Revised 3-13-2009. Among the Re-examination's recommendations are the following mitigation aspects:<ul style="list-style-type: none">As the beaches are the first line of protection from flooding and waves from storms approaching from the sea, continual preservation and enhancement of the beach and dunes shall remain a priority.The City should continue to enforce flood protection standards for development and implement flood protection/mitigation projects as funding allows.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none">Capital Planning and Sustainability - The Cape May City Governing Body has successfully integrated its long-range planning agenda with the long-term financial and capital improvement programs to create a comprehensive and systematic sustainability approach for the City over the next two decades.					
Disaster Debris Management Plan	Yes	Local/County	Yes	Yes	-
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none">Floodplain Management Plan Annual Progress Report 9-15-2015 as required to maintain CRS credits for the Comprehensive Floodplain Management Plan.The Plan contains a number of Action Items that have been or can be integrated in the Hazard Mitigation Plan.					
Stormwater Management Plan	Yes	Local	Yes	Yes	-
Comment:					



Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. 					
Stormwater Pollution Prevention Plan	No	-	Yes	-	-
Comment: <ul style="list-style-type: none"> The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. 					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> There is no formal Habitat Conservation Plan but the City has pledged to support the NJ Wildlife Action Plan. The City of Cape May supports all the goals of the Atlantic Coast section of Fish and Wildlife's Action Plan. They protect piping plovers each year with roped off sections of the beach for their nesting areas and by putting up signs about the plover's nesting. Dune protection is also a huge concern for Cape May government as they are stabilizing and growing the dunes. Wildlife Interaction Plan. In 2008, the City of Cape May created the City of Cape May Beach Management Plan for the Protection of Federally & State-Listed Species. This plan was developed in concert with the NJDEP Division of Fish and Wildlife and the US Fish and Wildlife Service, New Jersey Field Office. The City submitted its 2016 Municipal Public Access Plan (MPAP)—the 5-year follow-up to the 2011 plan. 					
Economic Development Plan	No	-	No	No	-
Comment:					
Shoreline Management Plan	Yes	State/Local	Yes – if located in a coastal zone	Yes	-
Comment: <ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq. The City has been a participant of the beach replenishment program. The City of Cape May is continuing to maintain the City of Cape May Beach Management Plan for the Protection of Federally and State-Listed Species (March 2008). 					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Community Forestry Management Plan, 1-31-2017. The management of the community forest and the administration of the community forest' program is a cooperative effort between the mayor, council, city manager, public works, planning, emergency management, city solicitor, 					



Table 9.3-3. Planning, Legal and Regulatory Capability

				Have aspects of this been integrated into your mitigation plan?	
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<i>Shade Tree Commission, Historic Preservation Committee and the residents of the City of Cape May. A new development in the administration of the municipal government has been the new role of the City Manager in the day-to-day administration of city.</i> <ul style="list-style-type: none">After a severe weather event the Shade Tree Commission members assess their districts and work with representatives of the Public Works Department, Emergency management and private contractors to address all of the damage and respond immediately. The Shade Tree Commission will continue with the existing storm damage assessment procedures and develop additional procedures for extreme storm damage situations.					
Transportation Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">The Master Plan has a Circulation Element.					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Climate Mitigation and Adaption, submitted to Sustainable NJ, June 2014. Key findings from flood risk mapping that occurred as part of this plan exercise are: 1) critical municipal structures are located outside of the flood risk zone on the areas of highest elevation within city limits, 2) the city's sea wall provides mitigation from V zone flooding located along the city's beaches with most commercial and residential structures located on the opposite side of Beach Avenue, 3) the marsh and open green spaces located along the Cape Island Creek in the northwestern area of the city provide mitigation for flooding and sea level rise. Increasing green space land use and informing residents of potential sea level rise impacts in this area could be provided to increase resilience, 4) the impact of flooding and sea level rise in the Bucks Landing area is one of the greatest potential risks to the city. The City could work in conjunction with Lower Township to develop strategies for mitigating risk at this critical transportation junction.					
Tourism Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none">There is no formal Tourism Plan, but the City and Business Community provide substantial web and in print information concerning Cape May points of interest, activities and events.					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.Cape May City has an Emergency Communications Section in their Emergency Operations Plan per state requirements. A new Emergency Management Coordinator was appointed in 2016 and he has been ensuring that all emergency plans are up to date. The current plan was just re-approved in February 2017. The City's main form of communication is through the Reverse 9-1-1 system. They call their system Code Red and any resident, homeowner, or even vacationer can sign up to receive emergency alerts through this system via the City's website—on the home page.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					



Table 9.3-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Continuity of Operations Plan	Yes	Local	Yes	Yes	-
<i>Comment:</i> Part of Emergency Management Plan.					
Public Health Plan	Yes	Local	No	Yes	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					

Table 9.3-4. Development and Permitting Capability

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

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the City of Cape May.

Table 9.3-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Cape May Planning Board
Mitigation Planning Committee	No	
Environmental Board / Commission	Yes	Cape May Environmental Commission
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Siren system throughout town; and PA system along beachfront – usually used for public notification, thunderstorms, severe surf conditions, lost children; Reverse 911.
Maintenance program to reduce risk	Yes	City of Cape May - DPW, Water / Sewer Dept. The City of Cape May, NJDEP, and USFW is maintaining storm water drains and outfalls along Beach Drive (CR603) in Cape May City. The City of Cape May, the DEP, and ALS are maintaining current beach replenishment and dune erosion protection measures, as they are essential to safeguard oceanfront and harbor front land uses (from Master Plan).



Staff/Personnel Resource	Available?	Department/Agency/Position
Mutual aid agreements	Yes	City of Cape May, West Cape May, Cape May Point, U.S. Coast Guard Base, Lower Township, Cape May County
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning and Zoning Engineer/Planner &
Engineers or professionals trained in building or infrastructure construction practices	Yes	City Engineer
Planners or engineers with an understanding of natural hazards	Yes	Planning and Zoning Engineer/Planner &
Staff with training in benefit/cost analysis	Yes	Consultant
Staff with training in green infrastructure	Yes	City Engineer
Staff with education/knowledge/training in low impact development	Yes	City Engineer
Surveyor	Yes	City Engineer
Stormwater engineer	Yes	City Engineer
Personnel skilled or trained in GIS applications	Yes	City Engineer (Mott MacDonald),
Local or state water quality professional	Yes	Water Department
Scientist familiar with natural hazards in local area	Yes	Stockton; Gretchen Whitman at Nature Center
Emergency manager	Yes	City OEM Coordinator
Watershed planner	Yes	City Engineer
Environmental specialist	Yes	City Engineer
Grant writers	Yes	Consultants & City of Cape May
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the City of Cape May.

Table 9.3-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the City of Cape May.



Table 9.3-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes- Laurie Taylor
Do you have personnel skilled or trained in website development?	Yes- Daniel Shustack
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes, The Floodplain Management Page covers the hazard mitigation options and strategies.
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes, Information is available through the Office of Emergency Management Facebook page
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes, The City has several Citizen's Committees that meet on monthly and bi-monthly intervals. The Beach Safety Committee studies and review beach safety issues; The Sewall Committee explores the costs, funding resources, timetable and options for reinforcing and extending the existing seawall. And the Public Safety Building Committee studies the feasibility and options of constructing a new facility to house the fire department, rescue squad, police department, office of emergency management and related city operations
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	No

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the City of Cape May.

Table 9.3-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	5	Oct. 1, 2020
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	May 2013
Public Protection (Fire ISO Protection Class)	Yes	04	April 27, 2015
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	December 13, 2017

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.3-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and Sea Level Rise	Strong
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Strong



Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Hurricane	Strong
Nor’Easter	Strong
Severe Weather	Strong
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The City has access to resources to determine the possible impacts of climate change upon the municipality through NOAA and NJDEP websites, and the Getting to Resiliency Study. The administration understands the City’s position along the front edge of sea level rise. Sea level rise was covered in the placement of the public safety building and a topic in the effectiveness of our current seawall.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.3-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction & Zoning
Who is your floodplain administrator? (name, department/position)	Louis Belasco, CFM
Are any certified floodplain managers on staff in your jurisdiction?	Yes, two
What is the date that your flood damage prevention ordinance was last amended?	August 1, 2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceed
When was the most recent Community Assistance Visit or Community Assistance Contact?	March 13, 2018
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	The floodplain administrator is currently adequately trained for floodplain management responsibilities, although additional training would be welcome.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes and yes
How many flood insurance policies are in force in your jurisdiction?*	1,666 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	1,118 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$9,262,941
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION





- The City Department of Public Works and Engineering continues to support property mitigation, acquisition, and relocation.
- The City of Cape May continues to support dune enhancement (continuing ongoing programs of annual planting and installation of new dune fence).
- The City of Cape May is participating in and supporting a multi-jurisdictional effort between Lower, City of Cape May and West Cape May to control flooding in the Meadows.
- Cape May County and the Borough of Cape May Point is encouraging and working with County to install duckbill valves on County storm water outfalls (some 9+ county owned and the City pumping facilities on Queen Street).
- The County of Cape May and City of Cape May is continuing efforts to consolidate and reduce the number of outfalls that need to be maintained.
- The City of Cape May, NJDEP, JCPL, are EPA are partnering to continue to perform storm drain maintenance twice a year.
- The City of Cape May is partnering with the County to continue quarterly emergency management team meetings and perform annual drills.
- The City of Cape May attained a Silver certification from Sustainable Jersey. The City received credit for a Climate Adaptation: Flooding Risk activity, Vulnerable Population Identification for Emergencies, Water Conservation Education Programs, and a Tree Maintenance program.

9.3.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The City of Cape May's history of federally declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.3-11 provides details regarding municipal-specific loss and damages the City experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.3-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 23, 2016	Winter Storm Jonas	DR-4264	Coastal storm with major coastal flooding and high winds.	Although the County was impacted, the City of Cape May did not report damages.
July 10, 2020	Tropical Storm Fay	No	Tropical Storm with moderate flooding and high winds.	Various structures were damaged throughout the City and numerous trees were toppled.
January 20, 2020-continuing	Covid-19 Pandemic	DR-4488, EM-3451	The coronavirus pandemic resulted in hospitalizations, death.	The City was impacted by required business and school closures and mask/social distancing requirements.
August 4, 2020	Tropical Storm Isaias	Pending	Tropical Storm with high winds.	Various structures were damaged throughout the City and numerous trees were toppled.

Source: NOAA NCEI 2020, FEMA 2020

9.3.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the City of Cape May risk assessment results and data used to determine the hazard ranking.



REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the City of Cape May.

- Number of repetitive loss (RL) properties: 129
- Number of severe repetitive loss (SRL) properties: 8
- Number of RL/SRL properties that have been mitigated: 81

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.3-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
US COAST GUARD TRAINING CENTER	Fire Stations		X
U.S. COAST GUARD TRAINING CENTER CAPE MAY	Superfund Sites		X
U.S. COAST GUARD TRAINING CENTER CAPE MAY	TRI Sites		X
Department of Public Works	DPW	X	X
Fuel Island	DPW	X	X
Lifeguard Headquarters	EMS	X	X
Roseman's Boat Yard	Marinas	X	X
Cape May Marine	Marinas	X	X
Harborview Marina	Marinas	X	X
MUA Pump Station	MUA	X	X
KIWANIS CLUB	Polling Places	X	X
CORINTHIAN YACHT CLUB	Polling Places	X	X
Elevated Water Storage Tank	Potable Water Facilities	X	X
Reverse Osmosis Plant	Potable Water Facilities	X	X
Well 6	Potable Water Facilities	X	X
USDOT COAST GUARD TRAINING CTR	Superfund Sites	X	X
North St Pump Station	Wastewater Treatment Facilities	X	X
Madison Ave Pump Station	Wastewater Treatment Facilities	X	X
Sewer Lift Station	Wastewater Treatment Facilities	X	X
Storm Water Pumping Station	Wastewater Treatment Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- Cape May's Fire and OEM are housed in a functionally obsolete building. The Fire and OEM building is susceptible to wind and rain damage and lacks an emergency command center.
- City Hall is functionally obsolete. It is a Contributing Building in the City's Historic District. It contains the City Administrative and police functions. The building requires updates to continue functioning in its current capacity to respond to natural hazards and be more resilient to hazard events.
- Various Public Buildings lack back up power. This results in disrupted operations when the City is impacted by power outages and hazard events.



- Cape May has longstanding water supply issues owing to overdrawing wells and intrusion of saltwater into freshwater aquifers. The City has one of the first reverse-osmosis desalinization plant and requires additional upgrades to remain functional. The facility requires a rebuild.
- The City has a large visitor and second-home population during the summer season and fall/spring shoulder seasons. Informing these visitors and part-time residents of natural hazards is a challenge due to a lack of awareness of emergency resources.
- Delaware Avenue/CR-640 connects the US Coast Guard Training Center to Cape May and evacuation routes to the north. Delaware Avenue is protected from Cape May Harbor by a rip-rap system that is subject to erosion and provides inconsistent protection.
- The Cape May beach promenade protects the City from destructive storm surge and high tides. Currently the promenade seawall provides a consistent level of protection except for a gap between Madison Avenue and Wilmington Avenue. At this location there is a low rock wall and decrepit timber bulkhead. This gap presents a major vulnerability for a storm surge event in the eastern section of the City. A feasibility study for a new promenade wall was partially financed through a FMA grant.
- The Cape May promenade is a seawall that extends along the beachfront and protects the City from storm surge. The seawall is deteriorating in some sections and requires an overall elevation to account for rising sea levels.
- Cape May is vulnerable to nuisance and stormwater flooding due to low-lying land elevations near Cape Island Creek and Frog Hollow. The City has installed stormwater pump stations to mitigate the flood risk. However, if the pumps fail due to severe storms, the stormwater pumps will not be able to function.
- The Venice Avenue pump station is located in a low-lying section of the City near Cape Island Creek. The pump station provides service to nearby properties. The land near the pump station floods when tide levels are just one foot above typical high tides. The Cape May Police force is staffed in West Cape May (with the exception of Administration). Venice Avenue is an essential route back to the City of Cape May.
- Cape May has widely varying elevation ranging from areas of relative high ground near the City Center to low-lying former wetlands area in the periphery of the City. Due to the density of development and existing geography, large-scale flood protection infrastructure requires careful planning to maintain the historic integrity of the City and protect the existing ecosystems.
- Cape May's Back Bay areas do not have the same structural protection as the oceanfront areas. Though certain portions of the waterfront received bulkheads (such as Harbor Lane in 2014), additional mitigation is needed to create a ring of protection for the City and surrounding communities.
- Cape May has various low-lying streets found throughout the City. These streets are plagued by regular nuisance flooding, particularly in the western and eastern ends of the City as well as the Elmira Street corridor. A combination of high tides and rainfalls will cause nuisance flooding that hinders access to the areas for residents and for emergency vehicles.
- Sewell Point is a roughly 130-acre tract of undeveloped land located between the City's center and the Coast Guard Training Center. The land is privately owned, located in the Special Flood Hazard Area, and is subject to litigation over proposed development. The wetlands serve as a natural floodplain buffer.
- Cape May has a number of repetitive loss, severe repetitive loss, and substantially damaged properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. Progress has been made on elevating buildings and reconstructing new buildings that are more resistant to flooding.
- The dunes play an important role in the protection of Cape May's beaches and structures. Dune plantings take place regularly to help maintain and protect the dunes. However, non-indigenous plants have begun to take over the dunes, causing eyesores and threatening the dune grass.
- Quick moving storm systems or quickly moving beach related hazards can result in beachgoers being caught unaware. Currently, the need to evacuate the beach and seek shelter is met by beach staff but this is slow and not efficient at times. The City has begun installation of a Beachfront Public Address System to meet this need.



HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the City of Cape May that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the City of Cape May has significant exposure. A map of the City of Cape May hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the City of Cape May. The City of Cape May has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the City assented to the proposed hazard mitigation ranking.

Table 9.3-13. City of Cape May Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
Medium	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Medium

9.3.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.



Table 9.3-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CCM-1a (former CCM-11)	Property Mitigation Support – Retrofit	City DPW and Engineering	In Progress	X	2021-CapeMayCity-015
CCM-1b (former CCM-1b)	Property Mitigation Support – Acquisition/Relocation	City DPW and engineering	In Progress	X	2021-CapeMayCity-015
CCM-2 (former CCM-2)	Continue and enhance participation in CRS.	USACE and NJDEP; support from City	In Progress	X	
CCM-3 (former CCM-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex.		In Progress	X	2021-CapeMayCity-015
CCM-4 (former CCM-8 (CMC-18)	Install shoreline protection for Delaware Avenue (CR-640; entrance to Coast Guard Base) along the Cape May Harbor in the City of Cape May. County has met with USACE and NJDEP on this previously.	City DPW and Engineering	In Progress	X	2021-Cape May City-006
CCM-5 (former CCM-10)	Install a cap on the existing seawall from Madison Avenue to Wilmington Avenue	County Engineering, with City of Cape May	In Progress	X	2021-Cape May City-007
CCM-6 (former CCM-11)	Seawall repair / replacement - please see the interim initiative following	County Engineering with the City of Cape May	In Progress	X	2020-Cape May City-008
CCM-7 (former CCM-12 (CMC-32)	Install backup power to two storm water pump stations at Madison Avenue and Grant Street in Cape May City.	City DPW and Engineering, County of Cape May	In Progress	X	2020-Cape May City-009
CCM-8 (former CCM-13)	Upgrade Venice Avenue pump station (increased capacity, backup power)	County of Cape May, as supported by the City	In Progress	X	2020-Cape May City-010
CCM-9 (former CCM-14)	Work with County GIS to leverage recent LIDAR elevation data to identify areas that need a berm to prevent back bay flooding	City along with USFW and NJDEP, Cape May Point	In Progress	X	2020-Cape May City-011
CCM-10 (former CCM-15)	Based on findings of previous initiative, develop and implement a program to install dikes/barriers to protect from back bay flooding	County Engineering with municipal support	In Progress	X	2020-Cape May City-012



Table 9.3-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CCM-11 (former CCM-16)	Dune Enhancement – Continue ongoing programs of annual planting and installation of new fence	City of Cape May	In Progress	X	2021-CapeMayCity-016
CCM-12 (former CCM-17)	Participate and support a multi-jurisdictional effort between Lower, City of Cape May and West Cape May to control flooding in the Meadows – gate valve on east end.	City of Cape May	Ongoing Capability		
CCM-13 (former CCM-18)	Encourage and work with County to install duckbill valves on County storm water outfalls (some 9+ county owned and the City Pumping facilities on Queen Street).	County of Cape May and Borough of Cape May Point	Ongoing Capability		
CCM-14 (former CCM-19)	Work with county who owns and manages outfall pipes to continue efforts to consolidate and reduce the number of outfalls that need to be maintained.	County of Cape May and City of Cape May	Ongoing Capability		
CCM-15 (former CCM-20)	Elevation of roadways – determine elevations and causes of flooding on Elmira Street	Work with county who owns and manages outfall pipes to continue efforts to consolidate and reduce the number of outfalls that need to be maintained (e.g., as was done when they built the county Grant Street Pumping Station and combined the Jackson, Windsor, Grant and Patterson outfall pipes). This is a consideration for the east end of the City.	In Progress	X	2020-Cape May City-013
CCM-16 (former CCM-21)	Maintain the reverse 911 system in the City	County of Cape May	Ongoing Capability		
CCM-17 (former CCM-22)	Continue to maintain the City of Cape May Beach Management Plan for the Protection of Federally and State-Listed Species (March 2008).	City of Cape May	Ongoing Capability		



Table 9.3-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CCM-18 (former CCM-23 (CMC-57)	Maintain storm water drains and outfalls along Beach Drive (CR603) in Cape May City	City of Cape May, NJDEP, and USFW	Ongoing Capability		
CCM-19 (former CCM-24)	Installation of back-up generators – water wells 5 and 7	City of Cape May and County of Cape May	Completed		
CCM-20 (former CCM-25)	Installation of a back-up generator for the Cape May City Elementary School	City of Cape May	Completed- 2018		
CCM-21 (former CCM-26)	Installation of a new water well (#8) and back-up generator	City of Cape May	Completed		
CCM-22 (former CCM-27)	CHP Micro Grid for critical City facilities	City of Cape May	No Progress, no longer a priority		
CCM-23 (former CCM-28)	Siren Warning System	City of Cape May, BPU	In Progress	X	2020-Cape May City-005
CCM-24	Outdoor public announcement system on beachfront	City of Cape May	Completed		
CCM-25	Integrate the Hazard Mitigation Plan with the Master Plan.	City of Cape May	Completed		
CCM-26	Acquire Sewell Point wetlands (from Master Plan)	Cape May City Planning Board	No Progress	X	2020-Cape May City-015
CCM-27	Maintain current beach replenishment and dune erosion protection measures as they are essential to safeguard oceanfront and harbor front land uses (from Master Plan)	City of Cape May, DEP, ALS	Ongoing Capability		
CCM-28	Acquire lands and consolidate ownership of the areas bordered by St. John Street, Lafayette and the Cape May Elementary School to facilitate an upgrade in active recreation. Playground equipment and playing field equipment needs upgrading. (from Master Plan)	City of Cape May, ACE, DEP	Completed		
CCM-29	Continue to perform storm drain maintenance twice a year (from Floodplain Management Plan)	City of Cape May, NJDEP, JCPL, NJEPA	Ongoing Capability		



Table 9.3-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CCM-30	Continue quarterly emergency management team meetings and perform annual drills.	City of Cape May, County	Ongoing Capability		
CCM-31	Installation of a back-up generator for the Cape May Convention Hall. This facility could provide temporary sheltering during non-flood related emergencies.	City of Cape May, County	In Progress	X	2020-Cape May City-003

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The City of Cape May participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The City of Cape May participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.3-15 summarizes the comprehensive-range of specific mitigation initiatives the City of Cape May would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.3-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.3-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-Cape May City-001	New Fire and OEM Department Building	Problem: Cape May's Fire and OEM are housed in a functionally obsolete building. The Fire and OEM building is susceptible to wind and rain damage and lacks an emergency command center. Solution: Construct a new state of the art fire and OEM building that houses an emergency control center and enhances the ability of the City to respond to hazards.	New	All hazards	1, 2, 3, 4, 6	Cape May City Administration/Fire Department	CDBG; City funds	Enhanced operations and interoperability of first responder departments	\$7 million	1-3 years	High	SIP	ES
2020-Cape May City-002	City Hall and Police Station Modernization	Problem: City Hall is functionally obsolete. It is a Contributing Building in the City's Historic District. It contains the City Administrative and police functions. The building requires updates to continue functioning in its current capacity to respond to natural hazards and be more resilient to hazard events. Solution: Facilitate the modernization of the building to ensure critical functions during hazard events.	Existing	All hazards	1, 2, 3, 4, 6	Cape May City Administration/Police Department	CDBG; City Funds	Increased City capabilities to all hazards	High	Within three years	High	SIP	ES
2020-Cape May City-003 (Former CCM-31)	Backup Power for Critical Facilities	Problem: Various Public Buildings lack back up power. This results in disrupted operations when the City is impacted by power outages and hazard events. Solution: Installation of a back-up generator for the Cape May Convention Hall. This facility could provide temporary sheltering during non-flood related emergencies.	Existing	All	1, 2, 3, 4	City Administration and Department of Public Works	BRIC; Local match	Continued operation of critical facilities during power outages	\$1.2 M	<1 year	Medium	SIP	ES
2020-Cape May City-004	Desalinization Plant Upgrades	Problem: Cape May has longstanding water supply issues owing to overdrawing wells and intrusion of saltwater into freshwater aquifers. The City has one of the first reverse-osmosis desalinization plant and requires additional upgrades to remain functional. The facility requires a rebuild.	Existing	Sea Level Rise, Drought	1, 3	Cape May City Water and Sewer	NJ I-Bank; Local match; EPA	Enhanced provision of potable water for	High	Medium term	High	SIP	NR



Table 9.3-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: Upgrade Desalinization plant-- - rebuild and new facility and advance planning/engineering.						Cape Island					
2020-Cape May City-005	Transient Population Emergency Awareness	Problem: The City has a large visitor and second-home population during the summer season and fall/spring shoulder seasons. Informing these visitors and part-time residents of natural hazards is a challenge due to a lack of awareness of emergency resources. Solution: Develop a geo-fencing alert system that will push alerts to all internet connected devices within the municipal boundaries. Additionally, develop a city-wide siren system to reach visitors in the City regardless of location and length of stay.	New	All	2, 3, 4	Cape May City OEM	City funds	Greater awareness of natural hazards	Low	Less than a year	High	EAP	PI
2020-Cape May City-006 (Former CCM-4)	CR-640/Coast Guard Shoreline Protection (See 2020-CapeMayCounty-014)	Problem: Delaware Avenue/CR-640 connects the US Coast Guard Training Center to Cape May and evacuation routes to the north. Delaware Avenue is protected from Cape May Harbor by a rip-rap system that is subject to erosion and provides inconsistent protection. Solution: Install shoreline protection for CR-640 (entrance to Coast Guard Base) along the Cape May Harbor in the City of Cape May.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 3, 5	County Engineering and USACE	US Army Corps of Engineers; BRIC; USCG	High	High	In progress	High	SIP	PP
2020-Cape May City-007 (Former CCM-5)	Cape May Promenade Seawall Extension	Problem: The Cape May beach promenade protects the City from destructive storm surge and high tides. Currently the promenade seawall provides a consistent level of protection except for a gap between Madison Avenue and Wilmington Avenue. At this location there is a low rock wall and decrepit timber bulkhead. This gap presents a major vulnerability for a storm surge event in the eastern section of the City. A feasibility study for a new promenade wall was partially financed through a FMA grant.	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 3, 4, 5	County Engineering , with City of Cape May Engineering ; US Army Corps, DEP	Local funding; Shore Protection Fund; US Army Corps; BRIC/FMA	High	Medium-High	Short-term D OF	High	SIP	SP



Table 9.3-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-Cape May City-008 (Former CCM-6)	Seawall Retrofit	<p>Solution: Install a cap on the existing seawall from Madison Avenue to Wilmington Avenue.</p> <p>Problem: The Cape May promenade is a seawall that extends along the beachfront and protects the City from storm surge. The seawall is deteriorating in some sections and requires an overall elevation to account for rising sea levels.</p> <p>Solution: Undertake a retrofit of the existing seawall to increase its elevation and continue to protect Cape May</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	County and City Engineering ; USACE	BRIC/HM GP; USACE; Shore Protection Fund	High	High	Long Term D OF	Medium	SIP	PP
2020-Cape May City-009 (Former CCM-7)	Cape May City Stormwater Pump Station Resilience (See 2020-CapeMayCounty -021)	<p>Problem: Cape May is vulnerable to nuisance and stormwater flooding due to low-lying land elevations near Cape Island Creek and Frog Hollow. The City has installed stormwater pump stations to mitigate the flood risk. However, if the pumps fail due to severe storms, the stormwater pumps will not be able to function.</p> <p>Solution: Install backup power to two stormwater pump stations at Madison Avenue and Grant Avenue in Cape May City. Work with the City to properly site the generator, which could be co-managed with the City to provide backup power for their station on Queen Street and Benton Avenue.</p>	Existing	Hurricane/ Tropical Storm, Nor'Easter , Severe Weather, Flooding	1, 3, 4, 5	City DPW and Engineering , County of Cape May	County Funded	High	Low (for City)	Long Term D OF	High	SIP	ES
2020-Cape May City-010 (Former CCM-8)	Venice Avenue Upgrades	<p>Problem: The Venice Avenue pump station is located in a low-lying section of the City near Cape Island Creek. The pump station provides service to nearby properties. The land near the pump station floods when tide levels are just one foot above typical high tides. The Cape May Police force is staffed in West Cape May (with the exception of Administration). Venice Avenue is an essential route back to the City of Cape May.</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4	Cape May City- Public Works	Local Budgets with HMA grants where applicable	High	High	<5 years	Medium	SIP	PP



Table 9.3-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: Upgrade Venice Avenue pump station (increased capacity, backup power)											
2020-Cape May City-011 (Former CCM-9)	Cape May Back Bay Flood Study	<p>Problem: Cape May has widely varying elevation ranging from areas of relative high ground near the City Center to low-lying former wetlands area in the periphery of the City. Due to the density of development and existing geography, large-scale flood protection infrastructure requires careful planning to maintain the historic integrity of the City and protect the existing ecosystems.</p> <p>Solution: Work with County GIS to leverage recent LIDAR elevation data to identify areas that need a berm to prevent back bay flooding</p>	N/A	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4	City along with USFWS and NJDEP, Cape May Point; Cape May County	Local and County budgets	Medium	Low-Medium	Ongoing	High	SIP	PR
2020-Cape May City-012 (Former CCM-10)	Cape May Back Bay Flood Mitigation Implementation	<p>Problem: Cape May's Back Bay areas do not have the same structural protection as the oceanfront areas. Though certain portions of the waterfront received bulkheads (such as Harbor Lane in 2014), additional mitigation is needed to create a ring of protection for the City and surrounding communities.</p> <p>Solution: Based on findings of previous initiative, develop and implement a program to install dikes/barriers to protect from back bay flooding.</p>	Existing/New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4, 5	City of Cape May Administration, USACE, NJDEP, Cape May County	Local budgets with USACE, NJDEP and HMA grants as applicable	High-enhanced protection throughout City	High	Long-term	Medium	SIP	SP
2020-Cape May City-013 (Former CCM-15)	Road Flood Mitigation Planning	Problem: Cape May has various low-lying streets found throughout the City. These streets are plagued by regular nuisance flooding, particularly in the western and eastern ends of the City as well as the Elmira Street corridor. A combination of high tides and rainfalls will cause nuisance flooding that hinders access to the areas for residents and for emergency vehicles.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise;	1, 3, 4	City Engineering with County support; West Cape May	County and local budgets with HMA funding; Transportation Trust Fund	High	High	Less than 5 years	Medium	SIP	SP



Table 9.3-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: Develop a plan for road elevations and drainage improvements in low-lying sections of the City impacted by nuisance stormwater and tidal flooding.		Severe Weather									
2020-Cape May City-014 (Former CCM-26)	Sewell Point Acquisition	<p>Problem: Sewell Point is a roughly 130-acre tract of undeveloped land located between the City's center and the Coast Guard Training Center. The land is privately owned, located in the Special Flood Hazard Area, and is subject to litigation over proposed development. The wetlands serve as a natural floodplain buffer.</p> <p>Solution: The City proposes to acquire the Sewell Point tract and conserve the land as open space, thereby reducing risk to existing development and preventing the addition of more structures in the floodplain.</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 5	Cape May City Planning Board; NJDEP; Cape May County	Federal, State, County, Local	High	High	Long	High	NSP	NR
2021-CapeMay City-015	Property Mitigation Support – Retrofit	<p>Problem: Cape May has a number of repetitive loss, severe repetitive loss, and substantially damaged properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. Progress has been made on elevating buildings and reconstructing new buildings that are more resistant to flooding.</p> <p>Solution: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with substantial damages, repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.</p>	Existing	Flood; Hurricane/ Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4	Floodplain Administrator, Homeowners	FMA; HMGP; Owner funds	High	High	Long Term D OF	High	SIP	PP



Table 9.3-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-CapeMay City-016	Dune System Enhancement	<p>Problem: The dunes play an important role in the protection of Cape May's beaches and structures. Dune plantings take place regularly to help maintain and protect the dunes. However, non-indigenous plants have begun to take over the dunes, causing eyesores and threatening the dune grass.</p> <p>Solution: Better maintenance will take place through researched, eco-friendly methods will improve the integrity of the dunes and help maintain a pristine appearance along the Promenade. Bi-Annual maintenance will be performed through a coordinated effort between local volunteers and Cape May City Public Works.</p>	N/A	Coastal Erosion, Hurricane, Nor'Easter, Tsunami	3, 5, 6	Public Works, local volunteers	City budget, environmental grants from state/federal sources and non-profits	Increased health and strength of protective dune system	Low	1 year	High	NSP	NR
2021-CapeMay City-017	Beachfront Public Address System	<p>Problem: Quick moving storm systems or quickly moving beach related hazards can result in beachgoers being caught unaware. Currently, the need to evacuate the beach and seek shelter is met by beach staff but this is slow and not efficient at times. The City has begun installation of a Beachfront Public Address System to meet this need.</p> <p>Solution: The City will complete installation of the Beachfront Public Address System.</p>	New	Severe Weather, Tsunami	1, 2, 4	Public Works, OEM	City budget	Increased emergency warnings	Medium	2 years	High	SIP	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:





- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.3-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2020-Cape May City-001	New Fire and OEM Department Building	1	1	1	1	1	1	1	1	1	0	1	1	1	0	12	High ▲
2021-Cape May City-002	City Hall and Police Station Modernization	1	1	1	1	1	1	1	1	1	0	1	1	1	0	12	High
2021-Cape May City-003 (Former CCM-31)	Backup Power for Critical Facilities	1	1	1	1	1	1	-1	-1	1	1	1	0	1	0	8	Medium
2021-Cape May City-004	Desalinization Plant Upgrades	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2021-Cape May City-005	Transient Population Emergency Awareness	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Cape May City-006 (Former CCM-4)	CR-640/Coast Guard Shoreline Protection (See 2021-CapeMayCounty-014)	1	1	1	1	1	1	-1	-1	1	0	1	1	1	0	12	High
2021-Cape May City-007 (Former CCM-5)	Cape May Promenade Seawall Extension	1	1	1	1	1	1	-1	-1	1	1	1	1	1	1	12	High
2021-Cape May City-008 (Former CCM-6)	Seawall Retrofit	1	1	1	1	1	0	-1	-1	1	1	1	0	0	1	8	Medium
2021-Cape May City-009 (Former CCM-7)	Cape May City Stormwater Pump Station Resilience (See 2021-CapeMayCounty-021)	1	1	1	1	1	1	-1	-1	1	0	1	1	1	0	12	High
2021-Cape May City-010 (Former CCM-8)	Venice Avenue Upgrades	1	1	1	1	1	1	-1	0	1	1	0	0	1	0	8	Medium
2021-Cape May City-011 (Former CCM-9)	Cape May Back Bay Flood Study	1	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
2021-Cape May City-012 (Former CCM-10)	Cape May Back Bay Flood Mitigation Implementation	1	1	1	0	1	0	-1	-1	1	1	1	1	1	1	9	High



Table 9.3-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2020-Cape May City-013 (Former CCM-15)	Road Flood Mitigation Planning	1	1	1	1	1	1	-1	0	1	1	0	0	1	0	8	Medium
2020-Cape May City-014 (Former CCM-26)	Sewell Point Acquisition	1	1	1	1	1	1	3	1	1	1	1	1	1	1	14	High
2021-CapeMayCity-015	Property Mitigation Support – Retrofit	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-CapeMayCity-016	Dune System Enhancement	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-CapeMayCity-017	Beachfront Public Address System	1	0	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.3-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and SLR	X	X	X	X	X	X	X	X
Coastal Erosion		X	X	X	X	X	X	X
Disease Outbreak			X		X			X
Drought			X	X	X		X	X
Flood	X	X	X	X	X	X		X
Hurricane	X	X	X	X	X	X	X	X
Nor'Easter	X	X	X	X	X	X	X	X
Severe Weather	X		X	X	X			X
Severe Winter Weather			X		X			X
Tsunami			X	X	X		X	X
Wildfire			X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.3-1. City of Cape May Hazard Area Extent and Location Map 1

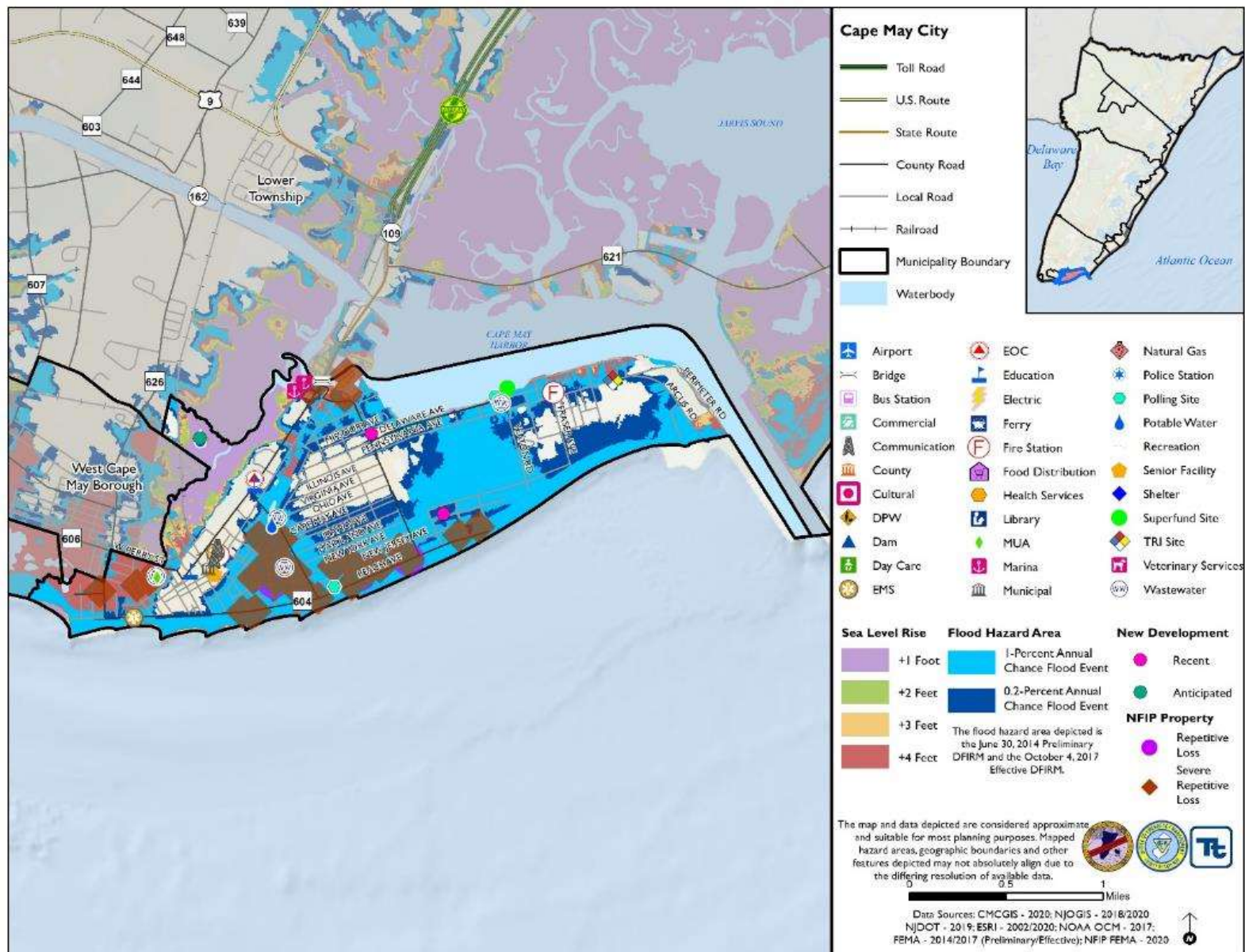




Figure 9.3-2. City of Cape May Hazard Area Extent and Location Map 2

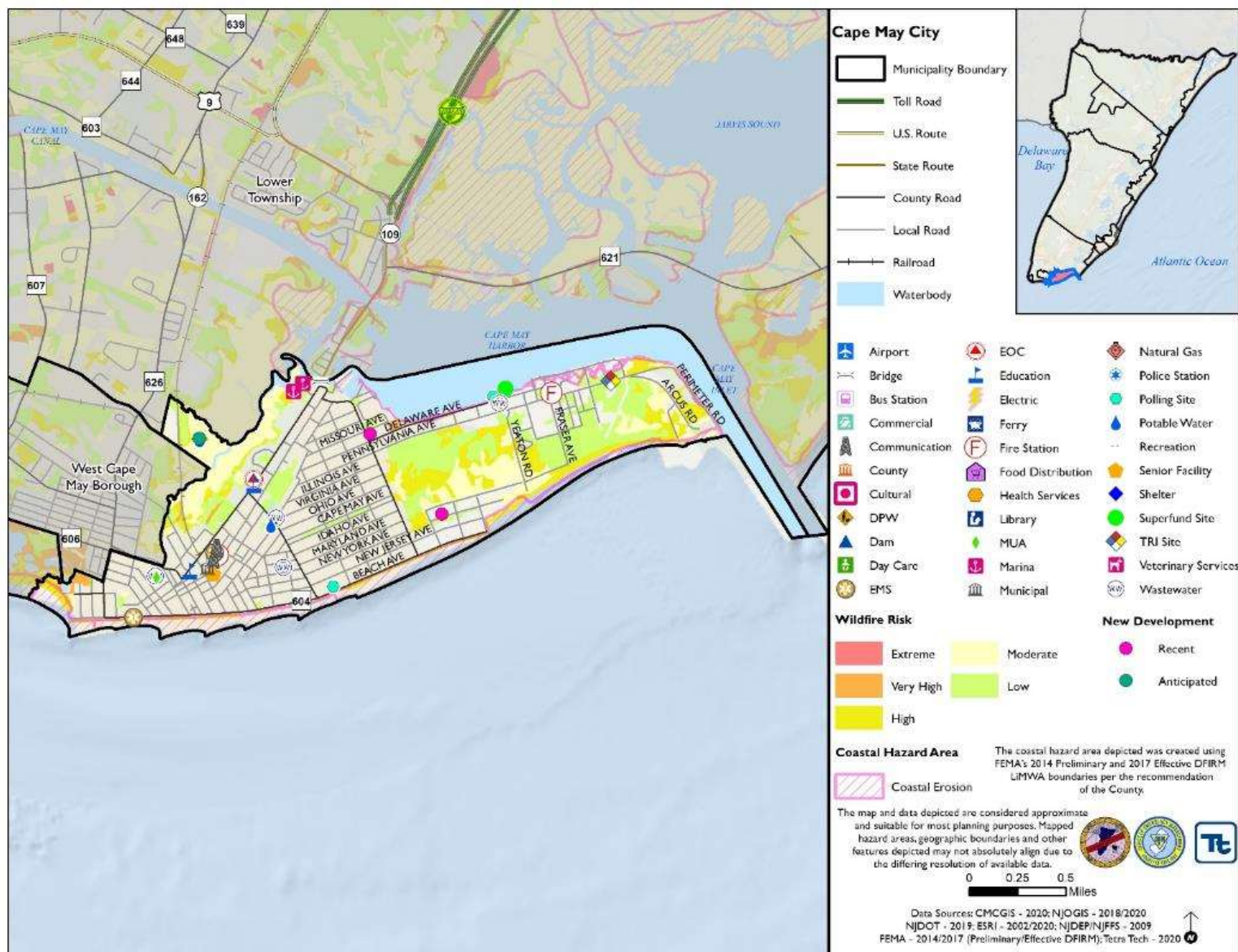
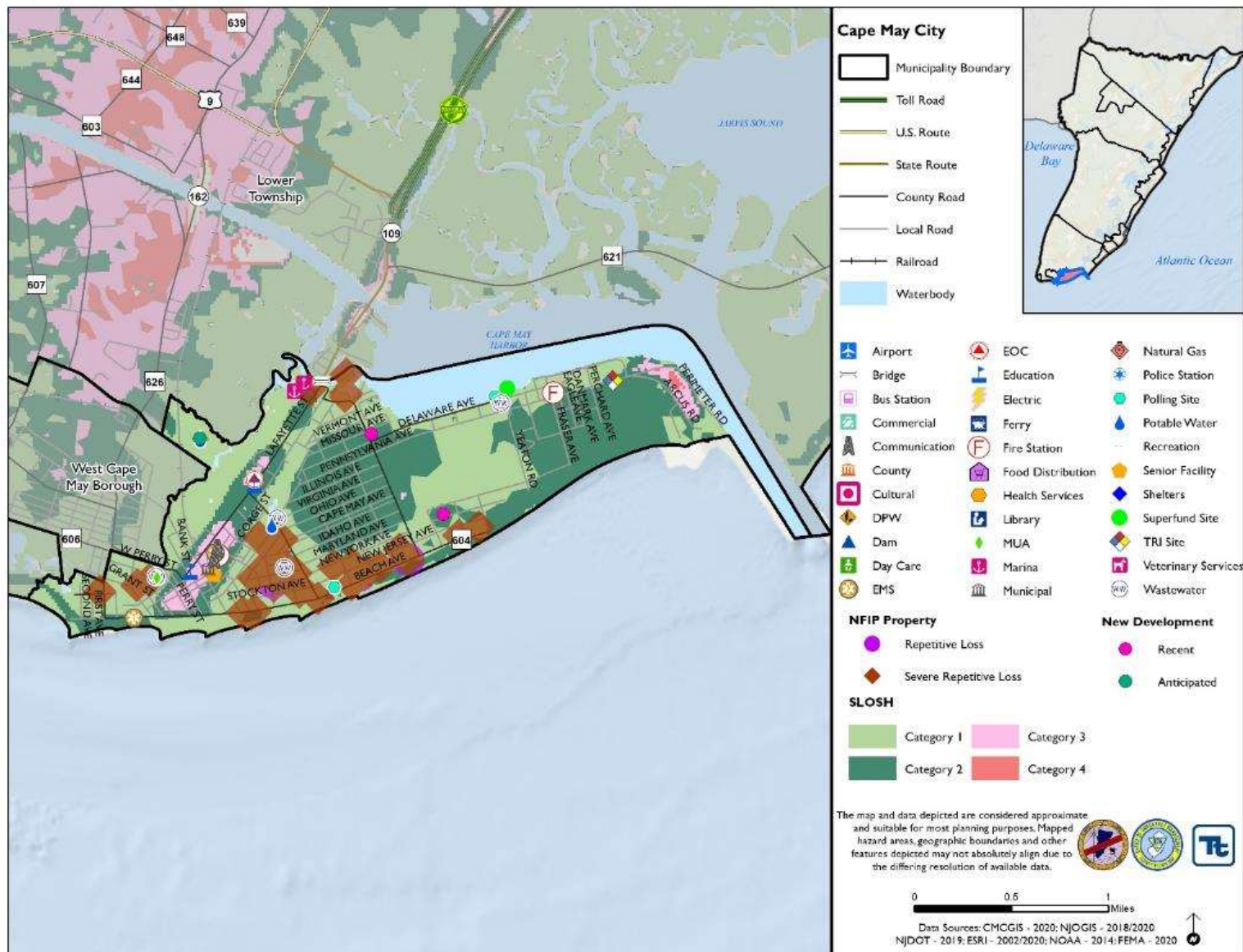




Figure 9.3-3. City of Cape May Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	New Fire and OEM Department building		
Project Number:	2021-Cape May City-001		
Risk / Vulnerability			
Hazard(s) of Concern:	All		
Description of the Problem:	Cape May's Fire and OEM are housed in a functionally obsolete building. The Fire and OEM building is susceptible to wind and rain damage and lacks an emergency command center.		
Action or Project Intended for Implementation			
Description of the Solution:	Construct a new state of the art fire and OEM building that houses an emergency control center and enhances the ability of the City to respond to hazards.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	Increased response capabilities to all hazards
Useful Life:	50 years	Goals Met:	1, 2, 3, 4, 6
Estimated Cost:	\$8,000,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1-3 years
Estimated Time Required for Project Implementation:	3 months	Potential Funding Sources:	CDBG; City Funds
Responsible Organization:	City Administration	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Combined facility	High	Cost prohibitive
	New fire/OEM building	\$8M	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	New Fire and OEM Department building	
Project Number:	2021-Cape May City-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Improves and modernizes the City's Fire, EMS, and OEM functions
Property Protection	1	Improves and modernizes the City's Fire, EMS, and OEM functions
Cost-Effectiveness	1	The current building has outlived its useful life
Technical	1	The current building has outlived its useful life
Political	1	Approved in a public Referendum in 2020
Legal	1	Yes, it is a municipal building
Fiscal	1	The project in conjunction with the needed Police Department and City Hall building renovations would need outside funding.
Environmental	1	No environmental issues are known at this time
Social	1	Keeps City functions located in the neighborhood they have been located for the past 100+ years.
Administrative	0	Outside professionals will be needed
Multi-Hazard	1	Covers all identified Hazards; current location is no in a flood zone
Timeline	1	1-3 years
Agency Champion	1	Local Government
Other Community Objectives	0	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	City Hall and Police Station Modernization		
Project Number:	2021-Cape May City-002		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	City Hall is functionally obsolete. It is a Contributing Building in the City's Historic District. It contains the City Administrative and police functions. The building requires updates to continue functioning in its current capacity to respond to natural hazards and be more resilient to hazard events.		
Action or Project Intended for Implementation			
Description of the Solution:	Facilitate the modernization of the building to ensure critical functions during hazard events.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	Increased City capabilities to all hazards
Useful Life:	50 years	Goals Met:	1, 2, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Plan
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2-3 years
Estimated Time Required for Project Implementation:	3 months	Potential Funding Sources:	CDBG; City Funds
Responsible Organization:	City Administration	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Combined facilities	\$15M	Cost prohibitive
	Facility revamp	High-TBD	Cost feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	City Hall and Police Station Modernization	
Project Number:	2021-Cape May City-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Improves and modernizes the City's Police functions
Property Protection	1	
Cost-Effectiveness	1	Combines Police and Administrative Government functions into a single building
Technical	1	The building has existed for 100 years in its current location
Political	1	Updates the City's Elected Officials offices
Legal	1	Yes, it is a municipal building
Fiscal	1	The project in conjunction with the needed Fire Department building replacement would need outside funding.
Environmental	1	No environmental issues are known at this time
Social	1	Keeps City functions located in the neighborhood they have been located for the past 100+ years.
Administrative	0	Outside professionals will be needed
Multi-Hazard	1	Covers all identified Hazards; current location is not in a flood zone
Timeline	1	4-5 years
Agency Champion	1	Local Government
Other Community Objectives	0	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power for Critical Facilities		
Project Number:	2021-Cape May City-003		
Risk / Vulnerability			
Hazard(s) of Concern:	All		
Description of the Problem:	Various Public Buildings lack back up power. This results in disrupted operations when the City is impacted by power outages and hazard events.		
Action or Project Intended for Implementation			
Description of the Solution:	Install 1500 kW Generators for City Hall and Convention Hall, and a 3000kW generator for the new Fire Station. The Convention Hall can provide temporary sheltering during non-flood related emergencies.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	High	Estimated Benefits (losses avoided):	Increased response capabilities to all hazards
Useful Life:	20 years	Goals Met:	1, 2, 3, 4
Estimated Cost:	\$1,200,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	< 1 year
Estimated Time Required for Project Implementation:	3 months	Potential Funding Sources:	City funds; BRIC
Responsible Organization:	City Administration and Department of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Microgrid	High	Too costly
	Distributed generators	Medium	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power for Critical Facilities	
Project Number:	2021-Cape May City-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project protects critical facility property
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	1	
Legal	1	Project is legally possible
Fiscal	-1	
Environmental	-1	
Social	1	Project mitigates social disruption due to loss of services
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	City supports project
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Desalinization Plant Upgrades		
Project Number:	2021-Cape May City-004		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards Sea Level Rise, Drought		
Description of the Problem:	Cape May has longstanding water supply issues owing to overdrawing wells and intrusion of saltwater into freshwater aquifers. The City has one of the first reverse-osmosis desalinization plant and requires additional upgrades to remain functional. The facility requires a rebuild.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to upgrade Desalinization plant--- rebuild and new facility and advance planning/engineering.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500 Year	Estimated Benefits (losses avoided):	Enhanced provision of potable water for Cape Island
Useful Life:	350 years	Goals Met:	1, 3
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Less than one year
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	NJ I-Bank; Local match; EPA
Responsible Organization:	Cape May City Water and Sewer	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	New water source	High	Cost prohibitive
	Desalinization plant	High	Effective
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Desalinization Plant Upgrades	
Project Number:	2021-Cape May City-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Maintains potable water supply
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	Project is politically supported
Legal	1	Project is legally feasible
Fiscal	0	Project requires funding support
Environmental	1	Mitigates environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	City can champion with partners
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	CR-640/Coast Guard Shoreline Protection		
Project Number:	2021-CapeMay-006 (Former CCM-4) 2021-CapeMayCounty-014 (Former CMC 21)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	Delaware Avenue/CR-640 connects the US Coast Guard Training Center to Cape May and evacuation routes to the north. Delaware Avenue is protected from Cape May Harbor by a rip-rap system that is subject to erosion and provides inconsistent protection.		
Action or Project Intended for Implementation			
Description of the Solution:	Install shoreline protection/bulkhead for CR-640 (entrance to Coast Guard Base) along the Cape May Harbor in the City of Cape May.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 5
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	In progress	Potential Funding Sources:	US Army Corps of Engineers; BRIC; USCG
Responsible Organization:	County Engineering and USACE	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road Abandonment	Low	No access to Sewell Point/USCG
	Shore protection	High	Continued protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-640/Coast Guard Shoreline Protection	
Project Number:	2021-CapeMayCounty-014 (Former CMC 21)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects inhabitants of landward properties
Property Protection	1	Protects landward properties
Cost-Effectiveness	1	
Technical	1	Project is technically possible
Political	1	
Legal	1	
Fiscal	-1	
Environmental	-1	May cause adverse impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Project will address multiple hazards
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	Protects Coast Guard base
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Cape May Promenade Seawall Extension		
Project Number:	2021-Cape May City-007 (Former CCM-5)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	The Cape May beach promenade protects the City from destructive storm surge and high tides. Currently the promenade seawall provides a consistent level of protection except for a gap between Madison Avenue and Wilmington Avenue. At this location there is a low rock wall and decrepit timber bulkhead. This gap presents a major vulnerability for a storm surge event in the eastern section of the City. A feasibility study for a new promenade wall was partially financed through a FMA grant.		
Action or Project Intended for Implementation			
Description of the Solution:	Install a cap on the existing seawall from Madison Avenue to Wilmington Avenue.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 4, 5
Estimated Cost:	Medium-High	Mitigation Action Type:	Structure and Infrastructure Plan
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Short-term DOF	Potential Funding Sources:	Local funding; Shore Protection Fund; US Army Corps; BRIC/FMA
Responsible Organization:	County Engineering, with City of Cape May	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan; Feasibility Study; Master Plan; Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Seawall removal	Medium	Loss of protection
	Seawall Extension	Medium-High	Enhanced protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Cape May Promenade Seawall Extension	
Project Number:	2021-Cape May City-007 (Former CCM-5)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Protects landward properties
Cost-Effectiveness	1	Value of protected properties exceed project
Technical	1	
Political	1	
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	-1	Potentially adverse impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Multiple hazards mitigated
Timeline	1	
Agency Champion	1	City will champion, stakeholder agencies are involved
Other Community Objectives	1	
Total	High	
Priority (High/Med/Low)	12	



Action Worksheet			
Project Name:	Seawall Retrofit		
Project Number:	2021-Cape May City-008 (Former CCM-6)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	The Cape May promenade is a seawall that extends along the beachfront and protects the City from storm surge. The seawall is deteriorating in some sections and requires an overall elevation to account for rising sea levels.		
Action or Project Intended for Implementation			
Description of the Solution:	Undertake a retrofit of the existing seawall to increase its elevation and continue to protect Cape May		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	BRIC/HMGP; USACE; Shore Protection Fund
Responsible Organization:	County Engineering and Municipality; USACE	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Seawall removal	Medium	Loss of protection
	Seawall retrofit	High	Enhanced protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Seawall Retrofit	
Project Number:	2021-Cape May City-008 (Former CCM-6)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	Technically feasible to elevate promenade
Political	1	Politically feasible
Legal	0	
Fiscal	-1	Project requires funding support
Environmental	-1	Potentially adverse environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	0	
Agency Champion	0	City supports, requires coordination
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Cape May City Stormwater Pump Station Resilience		
Project Number:	2021-CapeMay-009 (Former CCM-7) 2021-CapeMayCounty-021 (Former CMC 33)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Cape May is vulnerable to nuisance and stormwater flooding due to low-lying land elevations near Cape Island Creek and Frog Hollow. The City has installed stormwater pump stations to mitigate the flood risk. However, if the pumps fail due to severe storms, the stormwater pumps will not be able to function.		
Action or Project Intended for Implementation			
Description of the Solution:	Install backup power to two stormwater pump stations at Madison Avenue and Grant Avenue in Cape May City. Work with the City to properly site the generator, which could be co-managed with the City to provide backup power for their station on Queen Street and Benton Avenue.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500 Year	Estimated Benefits (losses avoided):	High
Useful Life:	30 Years	Goals Met:	1, 3, 4, 6
Estimated Cost:	Medium (not high \$ cost)	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	HMA grants with local match
Responsible Organization:	County Engineering and Municipality	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan/Local Plans
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Microgrid	High	Too costly
	Backup generator	Medium	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Cape May City Stormwater Pump Station Resilience	
Project Number:	2021-CapeMayCounty-021 (Former CMC 33)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Maintains road access for emergencies
Property Protection	1	Protection of pump station
Cost-Effectiveness	1	
Technical	1	
Political	1	Project is politically supported
Legal	1	Project is legally feasible
Fiscal	-1	Project requires funding support
Environmental	-1	
Social	1	Prevents social disruption
Administrative	1	City can administer project
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Venice Avenue Upgrades		
Project Number:	2021-Cape May City-010 (Former CCM-8)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	The Venice Avenue pump station is located in a low-lying section of the City near Cape Island Creek. The pump station provides service to nearby properties. The land near the pump station floods when tide levels are just one foot above typical high tides.		
Action or Project Intended for Implementation			
Description of the Solution:	Upgrade Venice Avenue pump station (increased capacity, backup power)		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500 Year Flood Elevation	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	<5 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	Local Budgets with HMA grants where applicable
Responsible Organization:	Cape May City	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Pump Station abandonment	low	Loss of service
	Pump Station Enhancements	Medium	Enhanced service
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Venice Avenue Upgrades	
Project Number:	2021-Cape May City-010 (Former CCM-8)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Will enhance existing pump station
Cost-Effectiveness	1	
Technical	1	
Political	1	Project is politically supported
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	Plan prevents social disruption
Administrative	1	
Multi-Hazard	0	
Timeline	0	
Agency Champion	1	City will support
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Cape May Back Bay Flood Study		
Project Number:	2021-Cape May City-011 (Former CCM-9)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	Cape May has widely varying elevation ranging from areas of relative high ground near the City Center to low-lying former wetlands area in the periphery of the City. Due to the density of development and existing geography, large-scale flood protection infrastructure requires careful planning to maintain the historic integrity of the City and protect the existing ecosystems		
Action or Project Intended for Implementation			
Description of the Solution:	Work with County GIS to leverage recent LIDAR elevation data to identify areas that need a berm to prevent back bay flooding		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Medium
Useful Life:	TBD by study	Goals Met:	1, 3, 4
Estimated Cost:	Low-Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long-term DOF	Potential Funding Sources:	Local and County budgets
Responsible Organization:	City of Cape May, USACE, NJDEP, Cape May County	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Back bay floodgates plan	High	Cost prohibitive
	Holistic floodplain plan	Low	Examines feasibility
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Cape May Back Bay Flood Study	
Project Number:	2021-Cape May City-011 (Former CCM-9)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Planning will protect life safety
Property Protection	1	Planning will protect properties upon implementation
Cost-Effectiveness	1	
Technical	1	Planning will examine technical feasibility
Political	1	Political support exists
Legal	1	
Fiscal	1	
Environmental	0	Potential environmental impacts
Social	1	Planning will prevent social disruption
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	City will champion
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Cape May Back Bay Flood Mitigation Implementation		
Project Number:	2021-Cape May City-012 (Former CCM-10)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	Cape May's Back Bay areas do not have the same structural protection as the oceanfront areas. Though certain portions of the waterfront received bulkheads (such as Harbor Lane in 2014), additional mitigation is needed to create a ring of protection for the City and surrounding communities.		
Action or Project Intended for Implementation			
Description of the Solution:	Based on findings of previous initiative, develop and implement a program to install dikes/barriers to protect from back bay flooding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High- enhanced protection throughout City
Useful Life:	35-100 years	Goals Met:	1, 3, 4, 5
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Ongoing; Long-term DOF.	Potential Funding Sources:	Local budgets with USACE, NJDEP and HMA grants as applicable
Responsible Organization:	County Engineering with municipal support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan; Proposed Back Bay Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Back bay floodgates	High	Cost prohibitive
	Holistic floodplain plan	High	Technically feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Cape May Back Bay Flood Mitigation Implementation	
Project Number:	2021-Cape May City-012 (Former CCM-10)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects residents from flooding
Property Protection	1	Protects City projects
Cost-Effectiveness	1	
Technical	0	
Political	1	City support exists
Legal	0	Potential for legal challenges
Fiscal	-1	Project requires funding support
Environmental	-1	Potential adverse environmental impacts
Social	1	
Administrative	1	
Multi-Hazard	1	Addresses multiple flood hazards
Timeline	1	
Agency Champion	1	City will serve as champion
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



9.4 BOROUGH OF CAPE MAY POINT

This section presents the jurisdictional annex for the Borough of Cape May Point. The annex includes a general overview of the Borough of Cape May Point; an assessment of the Borough of Cape May Point's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.4.1 Staff and Local Stakeholder Involvement in Annex Development

The Borough of Cape May Point followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.4-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Ed Grant, Borough Administrator Address: PO Box 490 Cape May Point, NJ 08212 Phone Number: (609) 884-8468x25 Email: egrant@capemaypoint.org		Name / Title: Anita vanHeeswyk, Deputy Mayor, Commissioner Revenue and Finance Address: PO Box 490 Cape May Point, NJ 08212 Phone Number: (609) 884-8468x17 Email: avanheeswyk@capemaypoint.org
NFIP Floodplain Administrator		
Name / Title: Lou Belasco, Floodplain Administrator Address: PO Box 490 Cape May Point, NJ 08212 Phone Number: (609) 884-8468 Email: cmpfloodinfo@gmail.com		
Name	Title	Method of Participation
Ed Grant	Borough Administrator	Primary Point of Contact
Anita vanHeeswyk	Deputy Mayor, Commissioner Revenue and Finance	Alternate Point of Contact, provided information and data, contributed to mitigation strategy, reviewed draft annex and provided feedback
Lou Belasco	Floodplain Administrator	NFIP Floodplain Administrator, provided information and data, reviewed and signed off on annex
Robert Moffatt	Mayor	Reviewed and signed off on annex
Jim Craft	Fiscal/CFO	Reviewed and signed off on annex
Bill Gibson	Emergency Manager, Public Works Director	Reviewed and signed off on annex
Robert Shepanski	Fire Department	Reviewed and signed off on annex
Bruce Graham	Engineer	Reviewed and signed off on annex



9.4.2 Jurisdiction Profile

Cape May Point is a Borough at the southwestern tip of Cape May Peninsula in Cape May County, New Jersey, where the Delaware Bay meets the Atlantic Ocean. It is bounded on the north by the Township of Lower, on the east by portions of the Township of Lower and the Borough of West Cape May and the City of Cape May, on the south by the Atlantic Ocean and Delaware Bay, and on the west by the Delaware Bay. It is part of the Ocean City Metropolitan Statistical Area. Cape May Point is home to the Cape May Light.



According to the U.S. Census, the 2010 population for the Borough of Cape May Point was 291. The estimated 2018 population was 188, a 35.4 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 0 percent of the population is 5 years of age or younger and 64.9 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.4.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.4-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.4-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.4-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	8	6	3	3	6	5	8	8	8	8
Multi-Family	0	0	0	0	0	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	0	0	0	0	0	0
Property or Development Name	Type of Development	# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development		
Recent Major Development and Infrastructure from 2015 to Present										
None identified										
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
None anticipated										

* Only location-specific hazard zones or vulnerabilities identified.



9.4.4 Capability Assessment

The Borough of Cape May Point performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community's adaptive capacity for the impacts of climate change.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.4.4). The Borough of Cape May Point identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">• State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)• Construction Codes, Uniform, Chapter 75, Adopted by the Board of Commissioners. There is hereby established in the Borough of Cape May Point a State Uniform Construction Code enforcing agency to be known as the Department of Construction Inspection. The Construction Official shall be the chief administrator of the enforcing agency. Although a separate permit is required to build in the SFHA.• The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">• State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.• Zoning, Chapter 150, Adopted by the Board of Commissioners, 1988 with subsequent amendments.• Mitigation aspects of this Chapter include:					



Table 9.4-3. Planning, Legal and Regulatory Capability

		Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
	<ul style="list-style-type: none">All utility service connections to all new construction or, substantial improvement as defined in Article II of Chapter 90, Flood and Storm Zones, shall be underground.No structural expansion or alteration which creates any nonconformity or extends or expands any existing nonconformity shall be permitted unless a variance has been granted, except that raising an entire structure to comply with the flood ordinance is permitted so long as the structure is not otherwise expanded or relocated.It is the intent that the Beach Zone to protect the Borough's important beach resources from development and use that is inconsistent with their natural character or which could have an adverse impact on them. Would the Borough be interested in adding other mitigating aspects to this Chapter that more clearly indicate Floodplain Management as supported by Zoning?				
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 – the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Subdivision of Land, Chapter 149, adopted by the Board of Commissioners in 1988, revised through 2013. The purpose of this chapter is to provide rules, regulations and standards to regulate the division or subdivision of lots within the Borough. The Ordinance contains basic land subdivision requirements.					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Stormwater Control, Chapter 129, adopted by the Board of Commissioners in 2006. It is the purpose of this Chapter that flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include bath environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.As Mitigation measures it is required by this Chapter that in timing of stormwater runoff will not increase flood damage at or downstream of the site.It is also required that post-construction stormwater runoff into tidal flood hazard areas if the increased volume of stormwater runoff will not increase flood damages below the point of discharge; or in tidal flood hazard areas, stormwater runoff quantity analysis in accordance with paragraphs this Chapter shall only be applied if the increased volume of stormwater runoff could increase flood damages below the point of discharge.Structural stormwater management measures shall be designed to take into account the existing site conditions, including, for example, environmentally critical areas, wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage are and drainage patterns.					
Post-Disaster Recovery	No	N/A	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-



Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>Comment: N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.</p> <ul style="list-style-type: none">Real Estate disclosure of flood hazards could become an Ordinance Requirement for Real Estate Agents and/or a written policy for disclosing a property's Flood information. Also, providing flood insurance information for impacted properties could be an additional requirement. It should be noted that Section 90-1.3 of the Borough's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard.					
Growth Management	Yes	Yes	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.Zoned R1 (single family only). Strict FAR (floor area ratio)					
Site Plan Review	No	-	Yes – if municipality has a Planning Board	-	-
<p>Comment:</p> <ul style="list-style-type: none">Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.Cape May Point has no parcels large enough for subdivisions.					
Environmental Protection	Yes	State & Local	No	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">Stormwater Control, Chapter 129, contains a section requiring an Environmental Site Analysis as follows; A written and graphic description of the natural and manmade features of the site and its environs. This description should include a discussion of soil conditions, slopes, wetlands, waterways and vegetation on the site. Particular attention should be given to unique, unusual, or environmentally sensitive features and to those that provide particular opportunities or constraints for development.Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department Landscape Project or Natural Heritage Database established under N.J.S.A. 13:15-15.147 through 15.150, particularly <i>Helonias bullata</i> (swamp pink) and/or <i>Clemmys muhinebergi</i> (bog turtle).There is also a fairly active Environmental Commission in the Borough, established under Chapter 14.					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
<p>Comment:</p> <p>The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.</p> <ul style="list-style-type: none">Flood Damage Prevention, Chapter 90, adopted by the Board of Commissioners in 1988 & amended through 2017. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: a. .Protect human life and health b. Minimize expenditure of public money for costly flood control projects ;c Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; d. Minimize prolonged business interruptions.					



Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"><i>In order to accomplish its purposes, this ordinance includes methods and provisions for: a. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; b. Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; c. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; d. Controlling filling, grading, dredging, and other development which may increase flood damage; and, Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.</i><i>A Development Permit shall be obtained before construction or development begins, including placement of manufactured homes, within any area of special flood hazard established in subsection 90-3.2.</i><i>CMP Code Chapter 90-5.2a3 already requires 2 feet of freeboard.</i>					
Wellhead Protection	Yes	State	Yes	Yes	-
Comment: Administered by NJ DEP.					
Emergency Management	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"><i>Emergency Services, Chapter 12, adopted by the Board of Commissioners in 2008.</i><i>The County of Cape May consists of sixteen (16) municipalities, eleven (11) of which have municipal police or fire departments operating for or within the Borough of Avalon, City of Cape May, Township of Lower, Township of Middle, City of North Wildwood, City of Ocean City, City of Sea Isle City, Borough of Stone Harbor, Borough of West Wildwood, City of Wildwood or the Borough of Wildwood Crest, which regularly interact and provide assistance to each other in police, medical or fire related emergencies.</i>					
Climate Change	No	-	No	-	2021-Cape May Point-011
Comment:					
Disaster Recovery Ordinance	No	-	No	-	2021-Cape May Point-011
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	2021-Cape May Point-011
Comment:					
Other Sustainability Study	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"><i>Water and Sewer Utility, Chapter 146, adopted by the Board of Commissioners in 1988 and amended through 2018. The Borough's Ordinance for regulating potable water use and wastewater discharges is comprehensive and contains mitigating aspects.</i><i>Any person receiving a supply of water for any purpose from the Water and Sewer Utility of the Borough shall be subject to the rules and regulations established by this chapter.</i><i>The purpose of this Article is to provide for the maximum possible beneficial public use of the wastewater facilities through regulation of sewer construction, sewer use and wastewater discharges.</i><i>It shall be unlawful to discharge without an NPDES permit to any natural outlet within the Borough of Cape May Point or in any area under its jurisdiction</i>					
Planning Documents					
Comprehensive / Master Plan	Yes	State and Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"><i>2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be</i>					



Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.</p> <ul style="list-style-type: none">• Master Plan, adopted by the Borough Planning Board with revisions, August, 2008. Master Plan Re-examination Report, adopted by the Borough Planning Board, March 13, 2017.• The 2017 report contains sufficient detail for the Proposed Land Use Districts Map and regulations whereby it may be considered an amendment to the master plan and, as such, serve directly as the basis for changes to the land development ordinance and zoning map. Additionally, the Municipal Public Access Plan (MPAP), the report entitled "Getting to Resilience" and the "Coastal Vulnerability Assessment Report" are hereby incorporated within the Master Plan as technical appendices to inform the other plan elements.• Beach Damage and Saltwater Intrusion is a concern for the Borough. Exposure to coastal storms from the east, south and west threaten the Borough's beaches and dunes, which if breached, create a saltwater intrusion hazard. Goals of the Plan include creating a strategic process of mitigation actions for the Borough to build and strengthen resilience to effects of coastal storm events, including flood hazards and storm surges.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment:					
Disaster Debris Management Plan	No	-	No	-	2021-Cape May Point-010
Comment:					
Floodplain or Watershed Plan	Pending	Local	No	Yes Pending	2021-Cape May Point-009
Comment: A Watershed Management Plan is currently underway for CRS credit by the Stockton Coastal Research Center.					
Stormwater Management Plan	Yes CMP Code Chap 129	Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">• The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.• The 2007 Master Plan contains a Stormwater Element. This Municipal Stormwater Management Plan (MSWMP) documents the strategy for the Borough of Cape May Point to address storm water related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25, Municipal Storm water Regulations and contains all of the required elements described in N.J.A.C. 7:8 Storm water Management Rules. The plan addresses groundwater recharge, storm water quantity, and storm water quality impacts by incorporating storm water design and performance standards for new major development, defined as projects that disturb one or more acre of land. These standards are intended to minimize the adverse impact of storm water runoff on water quality and water quantity and the loss of groundwater recharge that provides base flow in receiving water bodies. The plan describes long-term operation and maintenance measures for existing and future storm water facilities.• As part of the mitigation section of the storm water plan, specific storm water management measures are identified to lessen the impact of existing development.• Administered by Cape May Point Code Enforcement or Cape May Police Department.					
Stormwater Pollution Prevention Plan	Yes	State and Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">• The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants					



Table 9.4-3. Planning, Legal and Regulatory Capability

		Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component</p> <ul style="list-style-type: none">As referenced under Stormwater Management Plan above, the Stormwater Element of the Master Plan also addresses Stormwater Pollution Prevention, which contains a number of mitigation measures, such as; To continue the rebuilding and maintenance program for the Lower Cape May County meadows, including the Cape May Point beaches, and protect dunes and beaches from further erosion; Preserve Lake Lily in its restored state, and maintain the lake in a suitable fashion for fish and other wildlife to survive; Preserve and add to the native vegetation of the area; Provide a healthy and wholesome environment for the native and migrating birds, butterflies, marine and terrestrial wildlife; Encourage conservation of potable water; Encourage and preserve “Open Space” where and whenever possible; Maintain the high standard of air quality in Cape May Point; Preserve our discounted flood insurance rate by following Federal and State building requirements.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none">The Borough’s 2007 Master Plan contains a Conservation Plan. The Conservation Plan, while not a mandatory element of the Master Plan, is one of the most important optional plans authorized under enabling legislature. The Conservation Plan for Cape May Point, New Jersey is provided here for the preservation, conservation, and utilization of the Borough’s natural resources. Areas covered include Geology and Soils, Hydrology, Meteorology, Vegetation, and Wildlife. The Plan will provide guidance as to resource planning, and management priorities and strategies.There are areas within Cape May Point that are more vulnerable and arguably more essential to wildlife than other places, and protective measures should concentrate on these sensitive areas. Such areas include all the dunes and the environs of Lake Lily. In order to control the quality of water run-off that drains into the Lake from much of the Borough, homeowners and gardeners throughout the Borough should be encouraged not to use chemical fertilizers. As mitigating measures, the Plan recommends that in order to achieve best conservation practices, the Borough code should be amended in terms of landscaping guidelines, lighting standards, and carrying capacity for native habitat.					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	Local	Yes – if located in a coastal zone	Yes	-



Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq. This regulation does not require a Plan but does regulate most development activities in the Coastal Zone within a certain distance from the Shoreline.Annual Review for 2019 of the Cape May Point NJ Municipal Beaches, dated May 30, 2019. The annual survey of the nine cross section stations on the municipal beach was completed by the Stockton University Coastal Research Center (CRC) on May 1 & 2, 2019. These were compared to previous surveys that were conducted April 2017 and April 2018. The findings included in this report complete the annual review of the municipal beaches just prior to the 2019 beach bathing season. The findings by Cell are as follow: Cells 0 (Lighthouse Ave.) and 1 (Lehigh Ave.) do not have reef structures; the beaches at Lighthouse and Lehigh Avenue gained substantial new sand and remain stable to accretive. Both beaches have steep slopes into deep water with strong tidal currents into and out of Delaware Bay. Cell 2 at Whilldin Avenues, the shoreline position (zero datum) is approximately 90 feet distance from the breakwater structure. Depth of the scour trough landward of the units has decreased to - 7.05 feet NAVD88 with less than 2 feet of the reef structure now exposed above the sea floor around the units. The swimming area remains limited, especially closer to the groins but should be manageable mid-beach this year. The greatest risk is unwitting contact with the barnacle encrusted reef crest generating cuts and abrasions. Wave surge should be far less than when 6-7 feet of height existed between the reef crest and the landward seafloor. The CRC again recommends installing a line of floats indicating the maximum distance for swimming that should be about 20 feet from the breakwater reef.Cell 3 at Coral Avenue, the shoreline position remained relatively constant; the breakwater units in May 2019 were approximately 100 feet from the shoreline position (zero datum). The space between the water's edge and the reefs filled in dramatically as did the offshore region beyond the reef structure. Wave turbulence over the structures should be minimal this season because about 2 feet of reef structure is exposed above the seafloor. The reduction in exposed reef structure above the sand surface reduces the wave turbulence over the reef and makes for safer swimming. Cell 4 (Lake Ave.) has no structures offshore and a relatively flatter nearshore slope. This site remains overall a good option for a swimming beach in Cape May Point this season and the recreational berm is about the same this year. The relatively shallow slope platform in the water between groins make wading and swimmer relatively safer for beach patrons. Cells 5 (Cape Ave.) and 6 (Pearl Ave.) contain the newer submerged breakwater units but they pose minimal risk for swimming in 2019. Both reef structures lie in greater than -8 feet of water approximately 200 hundred feet from the shoreline at low tide. The landward trough filled in at Cell 5 as well, generating a fairly flat area between the reef and the shoreline. The "Double Tee" structure in Cell 6 is buried with additional sand. Swimming near the groins should always be avoided since the units are slightly closer to the beach adjacent to the rocks. Cell 7 at Stites Avenue benefited from a stable berm area enhancing the recreational value of the beach, this paired with the shallow offshore platform will offer a relatively safe option for swimming. The beach is narrower in 2019, but only by 13 feet. Cell 8 at Alexander Avenue has remained at last year's width, but the available recreational area has been substantially improved at this beach since 2005, especially in the seaward dune slope region. The sand lost from Alexander Avenue does not accumulate on the Sunset Beach segment, but adds to the sediment layers on the nearshore Delaware Bay floor instead					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Circulation Element, Cape May Master Point Borough Master Plan, adopted by the Borough Planning Board, February 17, 2016. Although an Element of the Master, this Circulation Plan was completed separately. The goal of this element is to preserve Cape May Point's walkable character and shared streets through measures that increase actual and perceived safety for pedestrians, cyclists, drivers, residents, vacationers, and daily visitors. The goals include to: maintain and enhance the multimodal nature of the Borough's streets; Use engineering, enforcement, and education to encourage people to walk or bike and discourage driving to local destinations; Accommodate visitors through policies that promote pedestrians and bicycle use that reduce parking difficulties for them and local residents; Maintain parking and roadway design standards consistent with the character of the Borough and in concert with applicable engineering standards.Bike Walk Cape May, A Plan for both Cape May City and Cape May Point. 2016. The proposed recommendations outline a range of engineering, education, enforcement, and encouragement concepts and strategies to enhance bicycle and pedestrian mobility					



Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
throughout the two communities. Prioritized and implemented over time, as funding is available, they will foster higher levels of walking and biking activity, spur economic activity along the commercial corridors, support tourism, and create a more robust network to link residents and tourists with the places they want to go.					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Getting to Resilience Recommendation Report, prepared for the Borough of Cape May and dated January 2016.An example of an immediate outcome of completing the Getting to Resilience process is Cape May Point's application for additional Sustainable Jersey points through the Climate Adaption: Flooding Risk action. A challenging longterm goal would be to increase the integration of flood risk discussion into the Cape May Point's next master plan. Of particular difficulty is planning for sea level rise as it is an area that requires educating residents on the potential impacts over the next 25 to 30 years. Cape May Point should take into consideration the impacts of sea level rise when revising its Master Plan and its Capital Improvements Budget.					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other: Dune Maintenance Plan, Landscaping and Vegetation Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">The Dune Maintenance Plan is a five-year plan designed to maintain and improve the natural and beneficial functions of the Borough's dune system. In addition, the plan incorporates public education and information through the use of volunteers and signage within the program.Chapter 150 section 21 of the Borough Code provides information on requirements for Landscaping and Vegetation plans. Native vegetation and pervious surfaces are encouraged and/or required. Such development patterns may help reduce impacts from stormwater flooding.					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	State, County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.External Support Function 15 (External Communications), dated February 2017.The purpose of Emergency Support Function (ESF) 15 is developed to assist in the provision of accurate, coordinated, and timely information to affected audiences, including governments, media, the private sector, and the populace, during times of disaster or emergencies, using the National Incident Management System (NIMS).					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">The Borough of Cape May Point, Municipal Coastal Vulnerability Assessment, dated May, 2016, while not a THIRA by name, identifies the vulnerability of the community's assets to a series of flood hazard scenarios and examines how the flood events will affect the functional capacity of critical buildings, services, infrastructure, businesses, ecological systems, and residents.The Plan includes many short and long term recommendations for addressing the identified vulnerabilities that are mitigation actions some of which are aspects of the HMP.					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					



Table 9.4-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Continuity of Operations Plan	No	-	No	-	-
<i>Comment:</i>					
Public Health Plan	Yes CM Co Health Dept.	County State Federal	No	Yes	-
<i>Comment:</i> • Cape May Point uses the Cape May County Health Department plans.					
Other	No	-	No	-	-
<i>Comment:</i>					

Table 9.4-4. Development and Permitting Capability

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

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Borough of Cape May Point.

Table 9.4-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Revenue and Finance
Mitigation Planning Committee	Yes	CMP OEM
Environmental Board / Commission	Yes	EC under Com., Public Works
Open Space Board / Committee	Yes	EC under Com. Public Safety and Public Affairs
Economic Development Commission / Committee	Yes	Commissioner Revenue and Finance, Administrator, CFO, Auditor
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Public Works; CMP Fire Company; Code Red.
Maintenance program to reduce risk	Yes	Public Works completes the following: Keeping storm drains clear, collecting bagged leaves every Tuesday from property owners to keep them from flowing into drains, monitoring Lake Lily and determining when to lower lake levels by pumping so the lake can absorb stormwater from Lighthouse Pond and South Cape May Meadow.
Mutual aid agreements	Yes	Fire, Police, EMS, NJ DEP, CM County OEM,



Staff/Personnel Resource	Available?	Department/Agency/Position
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer Certified Municipal Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer Construction Official
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer Certified Municipal Planner Certified Floodplain Manager
Staff with training in benefit/cost analysis	Yes	Rev & Fin, CFO, Auditor, Administrator
Staff with training in green infrastructure	Yes	Municipal engineer.
Staff with education/knowledge/training in low impact development	Yes	Certified Municipal Planner
Surveyor	Yes	PW, Borough Engineer
Stormwater engineer	Yes	Borough Engineer Supervisor Public Works
Personnel skilled or trained in GIS applications	Yes	Borough Engineer
Local or state water quality professional	Yes	NJ DEP and local water official
Scientist familiar with natural hazards in local area	Yes	Consultant Dr. Stewart Farrell, Stockton Coastal Research Center
Emergency manager	Yes	Bill Gibson, Public Works Manager/ OEM
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Rev & Fin, Administrator
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the Borough of Cape May Point.

Table 9.4-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	Cape May Point Taxpayer Association funds “Dune Days” by providing and planting vegetation on the dunes using donations from the over 800 members.

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Borough of Cape May Point.



Table 9.4-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, Administrator Edmund Grant
Do you have personnel skilled or trained in website development?	Yes, Clerk Elaine Wallace
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	CRS PPI committee, Multi-Jurisdictional PPI (NJ Coastal Coalition)
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	An updated borough website and ability to send out information via email and text to property owners right away. The Borough added new bookcases in the public conference room for FEMA manuals so the public can reference them with ease.

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of Cape May Point.

Table 9.4-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	6	10-01-2013
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	April, 2013
Public Protection (Fire ISO Protection Class)	Yes	5	2015
Storm Ready Certification	No	N/A	N/A
Firewise Community Classification	No	N/A	N/A
Sustainable Jersey	Yes	Bronze	December 12, 2017

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.4-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor’Easter	Moderate



Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The Borough has access to resources to determine the possible impacts of climate change upon the municipality through individuals and agencies such as Dr. Stewart Farrell, NJ DEP. NJ Coastal Coalition Lou Belasco (Certified Floodplain Administrator/ Manager). The administration is supportive of integrating climate change in policies or actions. Climate change is already being integrated through actions such as the 2-foot freeboard requirement to account for future flooding conditions.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.4-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Revenue and Finance
Who is your floodplain administrator? (name, department/position)	Lou Belasco, Revenue and Finance, Certified Floodplain Administrator/Manager
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Yes, 2 feet of freeboard is required
When was the most recent Community Assistance Visit or Community Assistance Contact?	2020
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	The floodplain administrator is adequately trained for floodplain management responsibilities.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes, Class 6
How many flood insurance policies are in force in your jurisdiction?*	
-What is the insurance in force?	392 total policies
-What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	102 claims
-How many claims are still open or were closed without payment?	\$839,631
-What were the total payments for losses?	
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020



ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Land Use Planning:** The Borough has a municipal planner and an engineer that make recommendations and design for resiliency. The Planning Board and Zoning Boards consider natural hazards when making recommendations to the governing body. The Environmental Commission also has functions related to hazard mitigation.
- **Technical Resources:** The Borough has staff with experience with Benefit-Cost analysis, Substantial Damage estimates, and grant application preparation. Additional contract support is available for grant applications. Borough staff receive training and education in support of natural hazard risk reduction; however, staff would benefit from additional training in flood management.
- **USACE Programs:** The Borough (USACE and New Jersey DEP) continue to stabilize and grow dune height /dune and beach stability measures. USACE, NJDEP, CM County, and the Borough CMP continue to study possible impacts and consequences from sea level rise and Severe Weather on the Higbee Beach Wildlife management area and northern residential areas.
- **Administration:** Staff participate in associations and organizations that support natural hazard risk reduction capabilities such as: NJ Coastal Coalition, NJ Water Association, Code Red; ECN.
- **Operating Budget:** The Borough's operating budget contains line items for mitigation projects/activities.
- **Capital Improvements Budget:** The Borough's capital improvements budget contains mitigation-related projects.
- **Sustainable Jersey:** The Borough is bronze certified in the Sustainable Jersey program. The Borough earned points towards certification through animals in the community education, creation of a Green Team, climate adaptation, emergency communications planning, energy tracking and management, upgrade/retrofit of water utilities, a bicycle/pedestrian plan, a natural resource inventory, an environmental commission, a habitat conservation ordinance, prescription drug safety and disposal, and a recycling depot.
- **Climate Adaptation:** The resiliency team at Sustainable Jersey facilitated the Getting to Resilience (GTR) process for Cape May Point in July 2015. Details of the working group are contained in the GTR report. As recommended in the GTR, Cape May Point then conducted a Coastal Vulnerability Assessment (CVA). Using these reports, the borough will be reviewing the current plan and actions to be completed in the future to strengthen what has already been done. It was noted that "the Borough of Cape May Point is a leader in flood risk mitigation and the municipal resilience activities the borough engages in could provide a useful model for other municipalities to follow." Both reports have been distributed to the Planning Board and the Environmental Commission. Cape May Point's recently completed Master Plan Re-examination includes both reports as appendices and addresses recommendations for going forward in becoming a more resilient community.
- **Ecosystems Protection:** USACE, NJDEP, CM County, CMP PW, CMP CFO, and Sustainable Jersey are working to develop strategy for addressing potential consequences of sea level rise on the South Cape May Meadows Wetland Complex, including potential funding opportunities. NJ DEP and Borough CMP seek ways to reduce potential flood impacts from changes to the Lighthouse pond hydrology. NJ DEP, Borough CMP, and CMP Taxpayer Association seek long term funding and management strategies to protect dune and beach systems. The Borough CMP identifies also a long-term management strategy for the park monarch garden and irrigation system. The Borough monitor and improve current drainage system "West" by eliminating grasses and algae from Lake Lily with herbicides and grass carp to prevent grass derbies from clogging pumping station filters and grates which prevents lake drainage during high water conditions.



9.4.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of Cape May Point's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.4-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.4-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the county was impacted, the Borough did not received damages.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The Borough was subject to masking and social distancing restrictions and business /school closures due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

9.4.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of Cape May Point risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of Cape May Point.

- Number of repetitive loss (RL) properties: 16
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: Numerous properties have been torn down and rebuilt over time. According to FEMA, there have been eight repetitive loss properties that have been mitigated.

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.4-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
CAPE MAY POINT BORO VOLUNTEER FIRE COMPANY #1	Fire Stations	X	X



Name	Type	Exposure	
		1% Event	0.2% Event
Coral Ave Pump Station	Wastewater Treatment Facilities	X	X
Sewage Pump Station	Wastewater Treatment Facilities	X	X
CAPE MAY POINT FIRE HALL	Polling Places	X	X
Cape May Point Municipal Building	Municipal Facilities	X	X
Cape May Point Equipment Building	County Facilities		X
Cape May Point Water Tower complex	Potable Water Facilities		X
Lake Lily Flood Retention and Pump	Wastewater Treatment Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- At a minimum, the Municipal Building needs to be floodproofed. A best-case scenario would involve relocation.
- The Borough Maintenance Building is exposed to flooding and needs to be rebuilt to higher standards.
- The Public Works Building lacks backup power and would require a 50kW generator.
- The underground drain from Lake Lily to Lighthouse Pond is in need of upgrade.
- Drainage West from the north end of Lake Lily to the bay has a leak and needs to be repaired or upgraded.
- The Borough has three remaining unmitigated repetitive loss properties.
- Sunset Boulevard is vulnerable to flooding and floodwater blocks access from Cape May Point and portions of Lower Township.
- Repair and upgrade of existing storm drains is needed on several roads within Cape May Point.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Cape May Point that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Cape May Point has significant exposure. A map of the Borough of Cape May Point hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Cape May Point. The Borough of Cape May Point has reviewed the Cape May County hazard



ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Borough indicated the following:

- The Borough agreed with the calculated hazard rankings.

Table 9.4-13. Borough of Cape May Point Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
Medium	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Low

9.4.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.4-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMP-1a	Property Mitigation Support – Retrofit	Borough (likely through NFIP Floodplain Administrator)	In Progress	X	2021-Cape May Point-005
CMP-1b	Property Mitigation Support – Acquisition/Relocation	Borough	In progress	X	2021-Cape May Point-005
CMP-2	Strive to maintain compliance with, and good-standing in the National Flood Insurance program, including continued active participation in CRS and continuing to work toward a higher class rating.	Borough (through NFIP Floodplain Administrator)	Ongoing Capability		
CMP-3	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0 through regularly	Borough (through mitigation planning point of contacts)	Ongoing Capability		



Table 9.4-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	scheduled meetings with all agencies within the borough.				
CMP-4	Continue to develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing Capability		
CMP-5	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Borough	Ongoing Capability		
CMP-6	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
CMP-7	Continue to stabilize and grow dune height /dune and beach stability measures.	Borough – USACE, NJ DEP	Ongoing Capability		
CMP-8	Improve current drainage system “East” by installing a “Duck Bill” valve to prevent reverse flow from the State Park into Lake Lily and further extending the pipe.	Borough – USACE, NJ DEP	Complete		
CMP-9	Clear away sand from system “East” as needed.	CMP Public Works	In Progress, USACE conducting as part of CMP-8 completion. Considered maintenance		
CMP-10	As needed, monitor and improve current drainage system “West” by eliminating grasses and algae from Lake Lily with herbicides and grass carp to prevent grass derbies from clogging pumping station filters and grates which prevents lake drainage during high water conditions	Borough	Ongoing Capability		
CMP-11	Work directly with residents of the community located in a classic wildland-urban interface next to Cape May State Park to become a National Fire Protection Association (NFPA) “Firewise” community.	Local Fire Chiefs working with County Fire Coordinator and identified residents	Ongoing Capability		
CMP-12	Connect three French drains on Harvard Ave to the main storm drain line that goes from Harvard Ave to Medium Lake Lily. (Project led by CMP Department of Public	CMP DPW	No Progress	X	2021-Cape May Point-006



Table 9.4-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	works, funded locally, 0 percent complete)				
CMP-13	Valve to be installed at the south eastern outlet of Lake Lily to better control flow of water into Lake Lily from flooding from Lighthouse Pond and also at other times to prevent loss of water at Lake Lily in the late spring and summer in order to keep the lake at a depth that is the healthiest. (Project led by NJ DEP and CMP Department of Public Works, FEMA grant was applied for but not likely to be obtained, 0 percent complete)	CMP DPW and NJDEP	No Progress	X	2021-Cape May Point-008
CMP-14	Develop strategy for addressing potential consequences of sea level rise on the South Cape May Meadows Wetland Complex, including potential funding opportunities.	USACE, NJDEP, CM County, CMP PW, CMP CFO, Sustainable Jersey	Ongoing Capability		
CMP-15	Continue to study possible impacts and consequences from sea level rise and Severe Weather on the Higbee Beach Wildlife management area and northern residential areas.	USACE, NJDEP, CM County, Borough CMP	Ongoing Capability		
CMP-16	Seek ways to reduce potential flood impacts from changes to the Lighthouse pond hydrology.	NJ DEP, Borough CMP	Ongoing Capability		
CMP-17	Seek long term funding and management strategies to protect dune and beach systems.	NJ DEP, Borough CMP, CMP Taxpayer Association	Ongoing Capability		
CMP-18	Introduce redundancy into the Lake Lily pump system or develop alternates to continuous pumping.	Borough CMP	No progress	X	2021-Cape May Point-008
CMP-19	Retrofit or elevate the fire station.	Borough CMP	No Progress	X	2021-Cape May Point-002
CMP-20	Work with the U.S Postal Service to identify resiliency options for the Cape May Point post office.	Borough, working with USPS	No Progress		
CMP-21	Identify a funding source/long-term management strategy for the park monarch garden and irrigation system.	Borough CMP	Ongoing Capability		



Table 9.4-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CMP-22	Replace current bulkhead at Lake Lily.	Borough CMP	Completed		

In addition to the above progress, the Borough of Cape May Point identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- Borough staff were involved in the response and subsequent education and enforcement activities tied to the coronavirus pandemic.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of Cape May Point participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough of Cape May Point participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.4-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Cape May Point would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.4-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update



Table 9.4-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Cape May Point-001	Emergency Services Building for DPW and OEM Office	<p>Problem: The Emergency Services Building (801 Lighthouse Ave, CMP) is not structurally sound and it contains nearly all of the equipment PW and Water/Sewer own and needs in case of storms as well as the OEM office “all at ground level”.</p> <p>Solution: The Borough will rebuild the building to hurricane proof standards, including a second floor OEM office and Water/Sewer office.</p>	Existing	All Hazards	1, 3, 4	Borough of Cape May Point Public Works and OEM	HMGP, BRIC, Community Facilities Grant Program, Municipal budget	Reduce flood damage, protect health and safety of citizens	\$5M	Within 5 years	High	SIP	PP, ES
2021-Cape May Point-002 (former CMP-19)	Municipal Building and Fire Station Flood Protection	<p>Problem: The Cape May Point Fire Station and the Municipal Building are exposed to flooding. Critical facilities need to be protected from potential flood damages to ensure continuity of operations.</p> <p>Solution: The Borough will conduct a feasibility assessment to determine if relocation of the Fire Station and the Municipal Building to a single municipal complex site that is protected from flooding is possible. The potential municipal complex would host the Municipal Building and Fire Station. If establishment of the municipal complex is not possible, the Borough will work to floodproof the Fire Station and the Municipal Building.</p>	Existing	Flood	1, 3, 4	Engineer, Administration, Fire Department	HMGP, BRIC, Community Facilities Grant Program, Assistance for Firefighters Grant Program, Municipal budget	Fire Station and Municipal Building protected from flood damage, continuity of operations	TBD by feasibility assessment, medium for floodproofing, high for relocation	Within 5 years	High	SIP	PP
2021-Cape May Point-003	Public Works Maintenance Building Backup Power	<p>Problem: The Public Works Maintenance Building lacks a backup power source</p> <p>Solution: The Engineer will research what size generator is needed to power the Public Works Maintenance Building. The Borough will then purchase and install the selected generator and necessary electrical components to supply backup power to</p>	Existing	All Hazards	1, 3, 4	Engineer, Public Works	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants	Ensures continuity of operations of Public Works Maintenance Building	\$50,000	Within 5 years	High	SIP	ES



Table 9.4-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		the Public Works Maintenance Building.					(EMPG) Program, Municipal Budget						
2021-Cape May Point-004	Drainage West	<p>Problem: Drainage West (drainage pipe) from the north end of Lake Lily to the bay has a leak and needs to be repaired or upgraded. This is the pipe that allows the Borough to drain the lake into the bay. Failure of the pipe would result in the lake being unable to be drained and greatly increase flood risk.</p> <p>Solution: The Borough will survey the pipe and determine if repair or replacement is necessary. Assuming replacement is necessary, the Borough will repair the leak.</p>	Existing	Flood, Severe Weather	1, 3	Engineer	HMGP, BRIC, municipal budget	Drainage maintained	Medium	2 years	High	SIP	SP
2021-Cape May Point-005 (former CMP-1a and CMP-1b)	Repetitive Loss Mitigation	<p>Problem: The Borough has 16 remaining unmitigated repetitive loss properties.</p> <p>Solution: The Borough will conduct outreach to the three RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$2 M	3 years	High	SIP	PP
2021-Cape May Point-006 (former CMP-12)	Harvard Avenue French Drains	<p>Problem: The area around Harvard Ave has poor stormwater drainage.</p> <p>Solution: The Borough will connect three French drains on Harvard Ave to the main storm drain line that goes from Harvard Ave to Medium Lake Lily.</p>	Existing	Severe Weather, Flood	1	Public Works	Municipal Budget	Reduction in stormwater flooding	Medium	2 years	High	SIP	SP



Table 9.4-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Cape May Point-007	Sunset Boulevard Flood Study	Problem: Sunset Boulevard is vulnerable to flooding and floodwater blocks access from Cape May Point and portions of Lower Township. The Boulevard is a County Road. Solution: The Borough will encourage and partner with the County on a flood study to determine potential mitigation actions to reduce flood risk.	Existing	Severe Weather, Flood	1	Administration, County	Municipal Budget, County	Reduction in flooding	Low	5 years	High	LPR	SP
2021-Cape May Point-008 (former CMP-13)	Lake Lily to Lighthouse Pond Drain	Problem: The underground drain from Lake Lily to Lighthouse Pond is in need of upgrade. Failure of the pipe would increase flood risk. Solution: The Borough will survey the pipe and determine the upgrades that are necessary. The Borough will then complete the necessary upgrades to the drain.	Existing	Severe Weather, Flood	1	Engineer, Public Works	HMGP, BRIC, Municipal Budget	Reduction in stormwater flooding	Medium	2 years	High	SIP	SP
2021-Cape May Point-009	Watershed Management Plan	Problem: A Watershed Management Plan is needed to help guide watershed management within the Borough. Solution: A Watershed Management Plan is currently underway for CRS credit by the Stockton Coastal Research Center. The Borough will complete and adopt the Plan.	N/A	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter, Flood	2, 5	Administration	Municipal budget	Improved watershed management	Medium	1 year	High	LPR	PR
2021-Cape May Point-010	Disaster Debris Management Plan	Problem: The Borough lacks a debris management plan. Solution: The Borough will develop and adopt a Disaster Debris Management Plan.	N/A	All Hazards	4, 6	Administration	Municipal budget	Plan in place for debris management	Staff time	1 year	High	LPR	ES
2021-Cape May Point-011	Disaster and Climate Resilience Ordinances	Problem: The Borough does not have ordinances for disaster recovery or climate resilience. Solution: The Administration will review examples of ordinances to address disaster recovery and climate resilience and determine if such ordinances would benefit the Borough.	N/A	All Hazards	1, 4	Administration	Municipal budget	Guidance established for resiliency	Staff time	5 years	High	LPR	ES



Table 9.4-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Cape May Point-012	Water Tower Flood Protection	Problem: The Water Tower located on Sunset Boulevard requires additional security and flood protections. Solution: The Borough will design and construct a concrete barrier around the building and water tower, with a flood gate opening and fencing on top of the barrier for security.	Existing	Flood	1, 3, 4	OEM, Public Works	HMGP, BRIC, USDA Community Facilities Grant Program, Municipal budget	Protection of potable water source	High	5 years	High	SIP	PP

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- **Local Plans and Regulations (LPR)** – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- **Structure and Infrastructure Project (SIP)** - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- **Natural Systems Protection (NSP)** – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- **Education and Awareness Programs (EAP)** – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- **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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.





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

Table 9.4-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-Cape May Point-001	Emergency Services Building for DPW and OEM Office	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High ⚠
2021-Cape May Point-002 (former CMP-19)	Municipal Building and Fire Station Flood Protection	1	1	1	1	1	1	0	1	1	1	0	0	1	1	11	High
2021-Cape May Point-003	Public Works Maintenance Building Backup Power	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Cape May Point-004	Drainage West	0	1	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2021-Cape May Point-005 (former CMP-1a and CMP-1b)	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2021-Cape May Point-006 (former CMP-12)	Harvard Avenue French Drains	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High
2021-Cape May Point-007	Sunset Boulevard Flood Study	1	1	1	1	1	0	1	1	1	1	1	0	1	1	12	High
2021-Cape May Point-008 (former CMP-13)	Lake Lily to Lighthouse Pond Drain	0	1	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2021-Cape May Point-009	Watershed Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-Cape May Point-010	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-Cape May Point-011	Disaster and Climate Resilience Ordinances	1	1	1	1	1	1	1	1	1	1	1	0	1	1	13	High
2021-Cape May Point-012	Water Tower Flood Protection	1	1	1	1	1	1	0	1	1	1	0	0	1	1	11	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.



Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.4-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise		X			X			
Coastal Erosion		X			X			
Disease Outbreak (new)		X			X			
Drought (new)		X			X			
Flood	X	X			X	X		
Hurricane	X	X			X			
Nor'Easter		X			X			
Severe Weather	X	X			X	X		
Severe Winter Weather	X	X			X			
Tsunami		X			X			
Wildfire		X			X			

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.4-1. Borough of Cape May Point Hazard Area Extent and Location Map 1

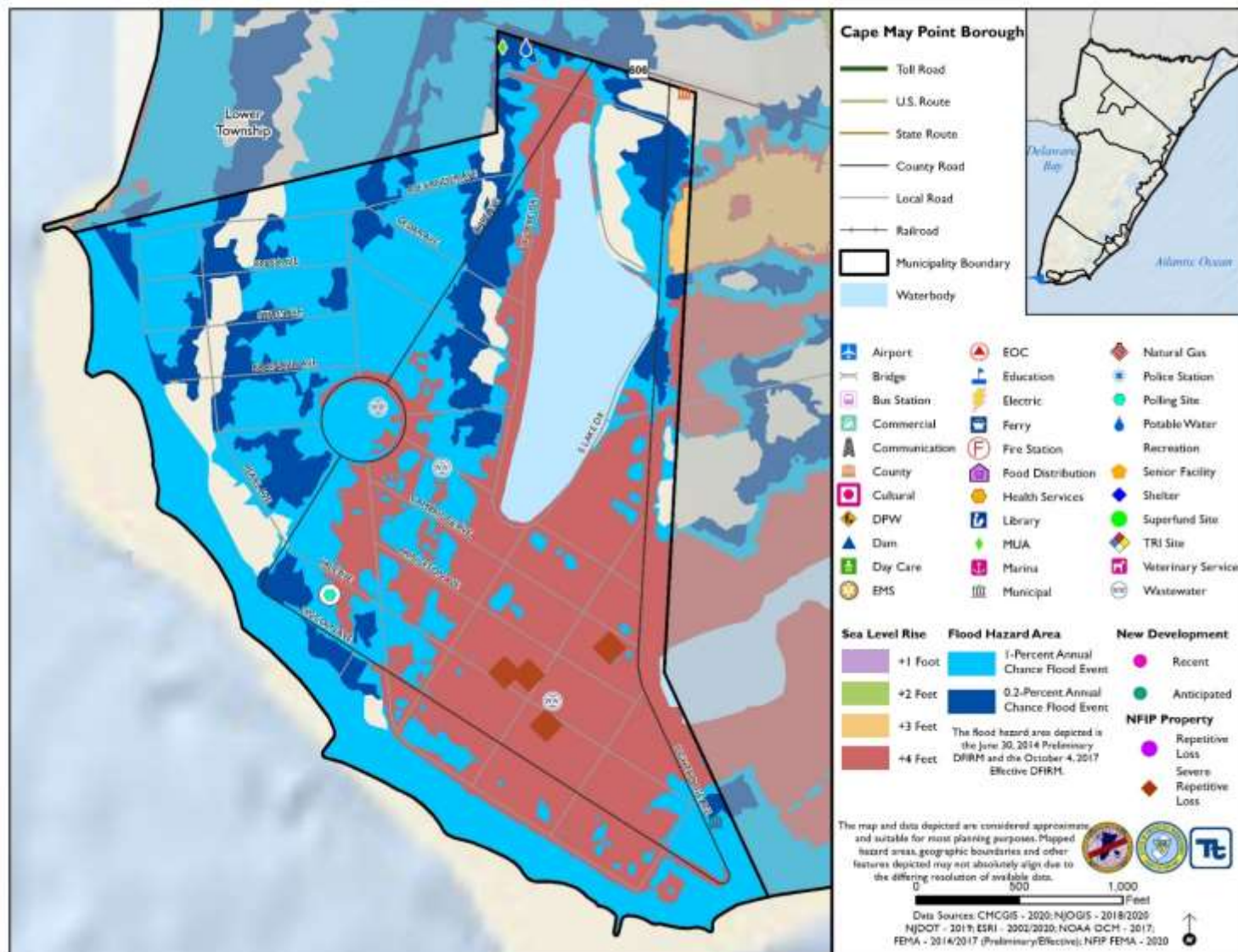




Figure 9.4-2. Borough of Cape May Point Hazard Area Extent and Location Map 2

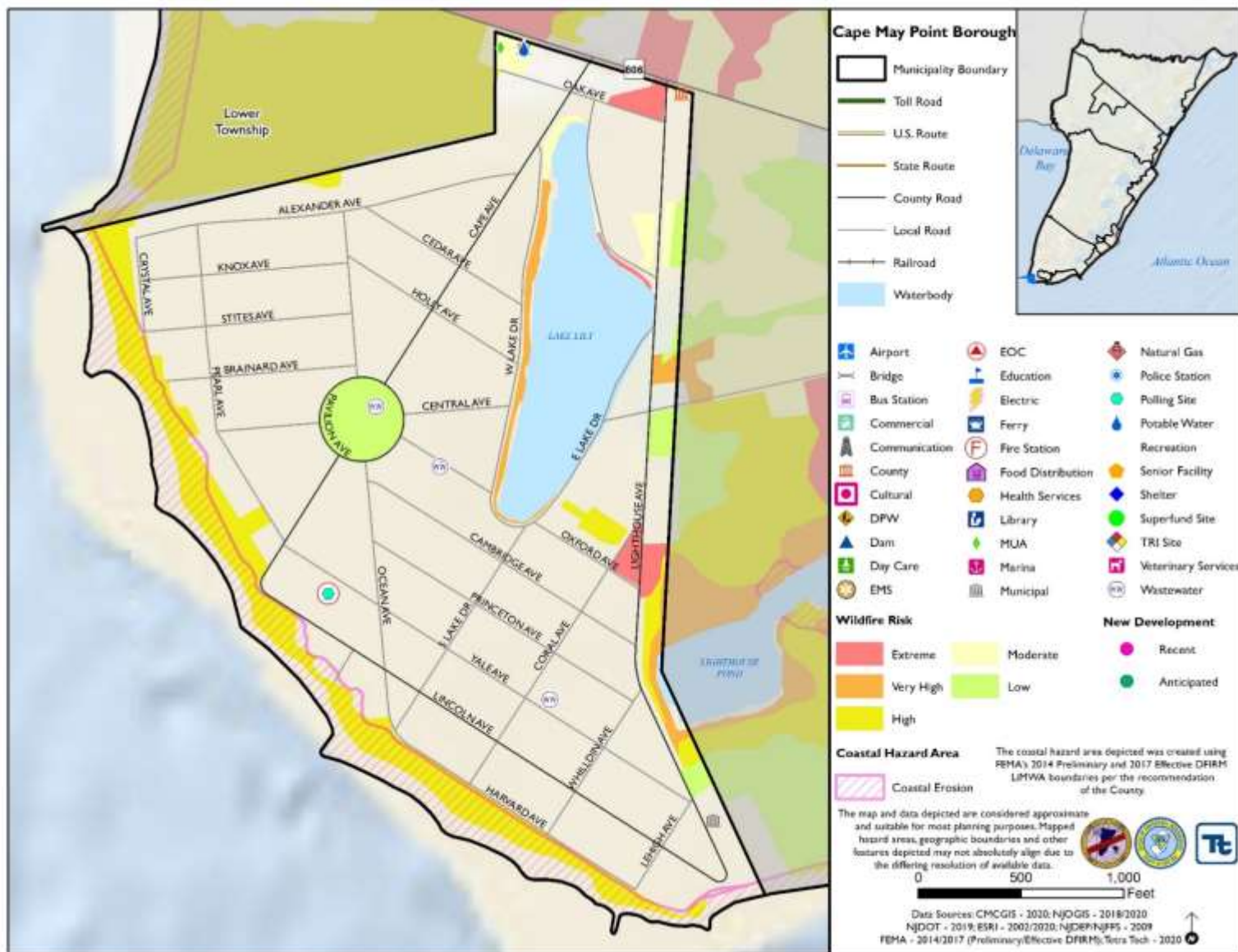
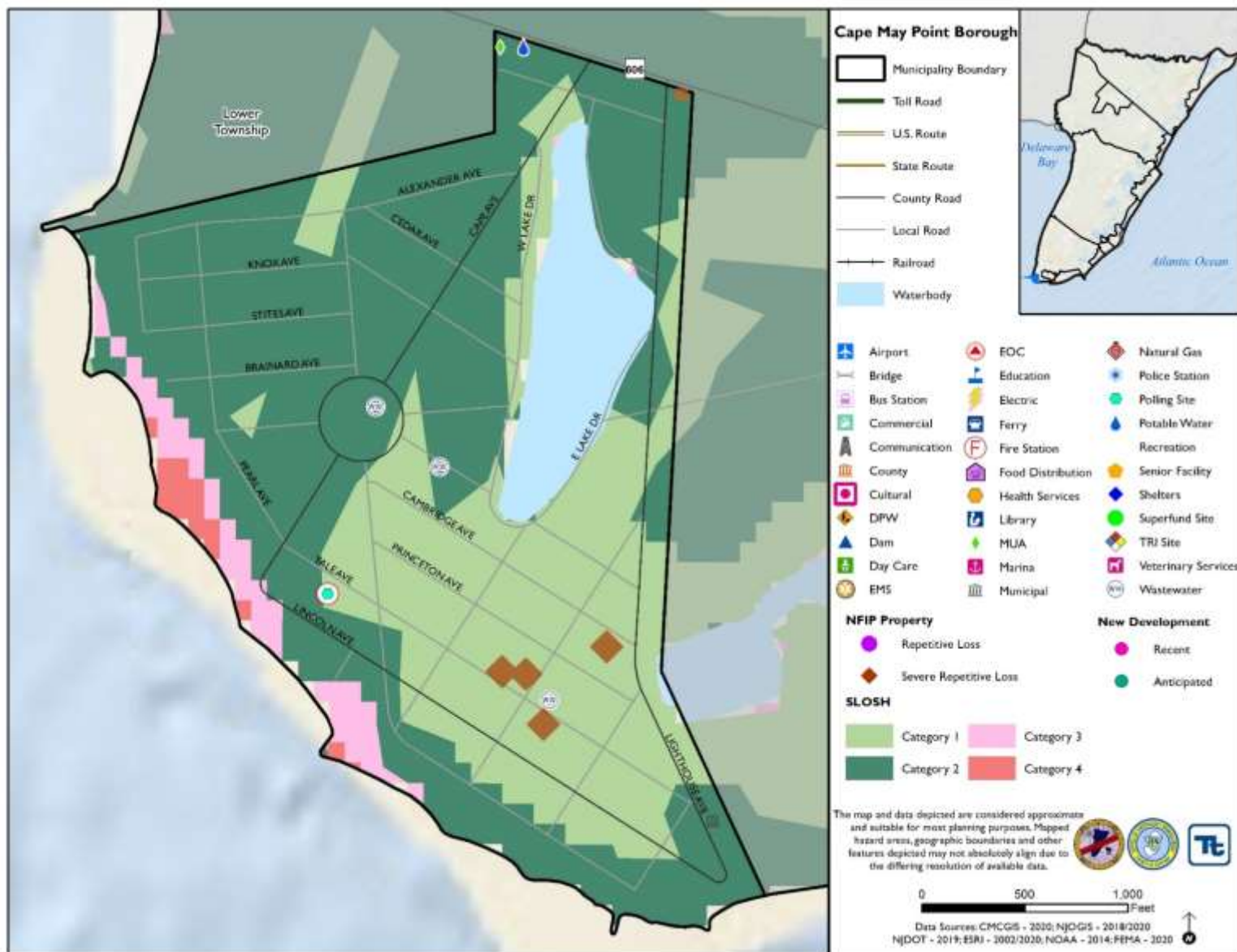




Figure 9.4-3. Borough of Cape May Point Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Emergency Services Building for DPW and OEM office.		
Project Number:	2021-Cape May Point-001		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	The Emergency Services Building (801 Lighthouse Ave, CMP) is not structurally sound and it contains nearly all of the equipment PW and Water/Sewer own and needs in case of storms as well as the OEM office "all at ground level".		
Action or Project Intended for Implementation			
Description of the Solution:	Rebuild the building to hurricane proof standards, including a second floor OEM office and Water/Sewer office.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	100-year flood (1%)	Estimated Benefits (losses avoided):	Reduce flood damage, protect health and safety of citizens
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	\$5,000,000.	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	We have an immediate need.	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	4 years	Potential Funding Sources:	HMGP, BRIC, Community Facilities Grant Program, Municipal budget
Responsible Organization:	Borough of Cape May Point Public Works and OEM	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Emergency management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocation	\$6,000,000.	It would be on higher ground and be drier.
	Retrofit	\$200,000.	It doesn't address the most critical need.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Emergency Services Building for DPW and OEM Office	
Project Number:	2021-Cape May Point-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects continuity of services of OEM
Property Protection	1	Protects DPW, OEM building
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	Within 5 years
Agency Champion	1	Borough of Cape May Point Public Works and OEM
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Municipal Building and Fire Station Flood Protection		
Project Number:	2021-Cape May Point-002 (former CMP-19)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood		
Description of the Problem:	The Cape May Point Fire Station and the Municipal Building are exposed to flooding. Critical facilities need to be protected from potential flood damages to ensure continuity of operations.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will conduct a feasibility assessment to determine if relocation of the Fire Station and the Municipal Building to a single municipal complex site that is protected from flooding is possible. The potential municipal complex would host the Municipal Building and Fire Station. If establishment of the municipal complex is not possible, the Borough will work to floodproof the Fire Station and the Municipal Building.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	TBD by feasibility assessment	Estimated Benefits (losses avoided):	Reduce flood damage, protect health and safety of citizens
Useful Life:	TBD by feasibility assessment	Goals Met:	1, 3, 4
Estimated Cost:	TBD by feasibility assessment, medium for floodproofing, high for relocation	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	We have an immediate need.	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	4 years	Potential Funding Sources:	HMGP, BRIC, Community Facilities Grant Program, Assistance for Firefighters Grant Program, Municipal budget
Responsible Organization:	Engineer, Administration, Fire Department	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Emergency management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocation	High	It would be on higher ground and be drier.
	Retrofit	Medium	It doesn't address the most critical need but may be the most cost-effective option available.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Municipal Building and Fire Station Flood Protection	
Project Number:	2021-Cape May Point-002 (former CMP-19)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects continuity of services of Municipal Building and Fire Station
Property Protection	1	Protects Municipal Building and Fire Station building(s)
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	Flood
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Administration, Fire Department
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Public Works Maintenance Building Backup Power		
Project Number:	2021-Cape May Point-003		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. The Public Works Maintenance Building lacks a backup power source.		
Action or Project Intended for Implementation			
Description of the Solution:	The Engineer will research what size generator is needed to power the Public Works Maintenance Building. The Borough will then purchase and install the selected generator and necessary electrical components to supply backup power to the Public Works Maintenance Building.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of Public Works Maintenance Building
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	\$50,000	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Public Works Maintenance Building Backup Power	
Project Number:	2021-Cape May Point-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of Public Works Maintenance Building
Property Protection	1	Project will protect building from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All Hazards
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Drainage West		
Project Number:	2021-Cape May Point-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Drainage West (drainage pipe) from the north end of Lake Lily to the bay has a leak and needs to be repaired or upgraded. This is the pipe that allows the Borough to drain the lake into the bay. Failure of the pipe would result in the lake being unable to be drained and greatly increase flood risk.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will survey the pipe and determine if repair or replacement is necessary. Assuming replacement is necessary, the Borough will repair the leak.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Drainage maintained
Useful Life:	50 years	Goals Met:	1, 3
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, Municipal Budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Stormwater Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove pipe	High	Greatly increases flood risk
	Replace pipe with drainage basin	High	Not enough space
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Drainage West	
Project Number:	2021-Cape May Point-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect nearby buildings and infrastructure from flood damage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	1 year
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-Cape May Point-005 (former CMP-1a and CMP-1b)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Borough has 16 remaining unmitigated repetitive loss properties.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will conduct outreach to the three RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$2M	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, BRIC, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-Cape May Point-005 (former CMP-1a and CMP-1b)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Borough has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Borough.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	

Action Worksheet



Project Name:	Lake Lily to Lighthouse Pond Drain		
Project Number:	2021-Cape May Point-008		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The underground drain from Lake Lily to Lighthouse Pond is in need of upgrade. Failure of the pipe would increase flood risk.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will survey the pipe and determine the upgrades that are necessary. The Borough will then complete the necessary upgrades to the drain.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Drainage maintained
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Stormwater Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove pipe	High	Greatly increases flood risk
	Replace pipe with drainage basin	High	Not enough space
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Lake Lily to Lighthouse Pond Drain	
Project Number:	2021-Cape May Point-008	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect nearby buildings and infrastructure from flood damage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	2 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Water Tower Flood Protection		
Project Number:	2021-Cape May Point-012		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood		
Description of the Problem:	The Water Tower located on Sunset Boulevard requires additional security and flood protections.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will design and construct a concrete barrier around the building and water tower, with a flood gate opening and fencing on top of the barrier for security.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	TBD by final design	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	50 years	Goals Met:	3
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, USDA Community Facilities Grant Program, Municipal budget
Responsible Organization:	Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Build backup water tower	Very High	Costly
	Relocate water tower	Very High	Costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Water Tower Flood Protection	
Project Number:	2021-Cape May Point-012	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects critical services of water tower.
Property Protection	1	Reduction in flooding risk
Cost-Effectiveness	1	
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	Flood
Timeline	0	Within 5 years
Agency Champion	1	Engineering
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



9.5 TOWNSHIP OF DENNIS

This section presents the jurisdictional annex for the Township of Dennis. The annex includes a general overview of the Township of Dennis; an assessment of the Township of Dennis's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.5.1 Staff and Local Stakeholder Involvement in Annex Development

The Township of Dennis followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.5-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: John Berg, Emergency Management Coordinator Address: 571 Petersburg Road, P.O. Box 204, Dennisville, NJ 08214 Phone Number: (609) 231-8129 Email: grandpopjb@gmail.com		Name / Title: Jessica Bishop, Administrator Address: 571 Petersburg Road, P.O. Box 204, Dennisville, NJ 08214 Phone Number: (609) 861-9700x225 Email: jbishop@dennistwp.org
NFIP Floodplain Administrator		
Name / Title: Michael Morano, Construction Official Address: 571 Petersburg Road, P.O. Box 204, Dennisville, NJ 08214 Phone Number: (609) 861-9705 Email: eileen@dennistwp.org		
Name	Title	Method of Participation
John Berg, Emergency Management Coordinator	John Berg, Emergency Management Coordinator	Primary point of contact, provided data and impact information, contributed to mitigation strategy, reviewed and signed off on annex
Jessica Bishop	Administrator	Alternate point of contact, provided data and impact information, reviewed and signed off on annex
Michael Morano	Construction Official	NFIP Floodplain Administrator, provided data and impact information
John C. Gibson, P.E.	Engineer	Reviewed and signed off on annex
Will Neely	Chief, Fire Department	Reviewed and signed off on annex

9.5.2 Jurisdiction Profile

The Township of Dennis is located within the northern section of Cape May County, New Jersey. It is bounded on the north by the Borough of Woodbine and Township of Upper, on the east by portions of the



Township of Upper, the City of Sea Isle City and the Atlantic Ocean, on the south by the Township of Middle, and on the west by Cumberland County, New Jersey and the Delaware Bay. It is part of the Ocean City Metropolitan Statistical Area. The township included the Dennis Creek community, the East and West Creek regions, the Southern portion of the Cedar Swamp, and the Seashore region between Townsend Inlet and Ludlam's Bay. Today Dennis Township includes the communities of Belleplain, Clermont, Dennisville, Eldora, Ocean View, South Dennis and South Seaville.

According to the U.S. Census, the 2010 population for the Township of Dennis was 6,467. The estimated 2018 population was 6,244, a 3.4 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 4.6 percent of the population is 5 years of age or younger and 19.9 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.5.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.5-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.5-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.5-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	9	N/A	10	N/A	11	N/A	7	N/A	7	N/A
Multi-Family	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
Other (commercial, mixed-use, etc.)	0	N/A	0	N/A	2	N/A	1	N/A	4	N/A
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
None identified										
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
Hawks Ridge	Residential		19		Blk 121, Lots 21.01, 21.02, 22		None		Construction beginning	

* Only location-specific hazard zones or vulnerabilities identified.

The Township does not have the capability to identify the number of permits that have been issued within the SFHA

9.5.4 Capability Assessment

The Township of Dennis performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:



- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.5.4). The Township of Dennis identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.5-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	No	No
Comment: <ul style="list-style-type: none"> • State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon) • Construction Code, Uniform, Chapter 80, adopted the Township Committee, 3-14-1977 & subsequently revised. There is hereby established in the Township of Dennis a State Uniform Construction Code enforcing agency to be known as the "Department of Construction Inspection," consisting of a Construction Official, a Building Subcode Official, a Plumbing Subcode Official, an Electrical Subcode Official, a Fire Protection Subcode Official. The Construction Official shall be the chief administrator of the enforcing agency. 					
Zoning Code	Yes	State & local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> • State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. • Zoning, Chapter 185, adopted by the Township Committee, August 12, 1996 with subsequent amendments. The purpose of this chapter is to establish a pattern for the use of land and buildings in the Township of Dennis, based on the latest updated Master Plan for the Township of Dennis and enacted in order to promote and to protect the public health, safety, comfort, convenience, and general welfare of the people. • More specific goals of this Chapter are to protect against hazards; conserve the taxable value of land and preserve open space and natural features; promote orderly development of the Pinelands Area so as to preserve and protect the significant and unique 					



Table 9.5-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?				
If no - can it be a mitigation action? If yes, add Mitigation Action #.				
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how? Describe in comments	
natural, ecological, agricultural, archaeological, historic, scenic, cultural and recreational resources of the Pinelands; and implement the goals and objectives of the Pinelands Comprehensive Management Plan.				
<ul style="list-style-type: none">This Chapter encourages clustering as a method of developing residential dwellings that will preserve desirable open spaces, conservation areas and floodplains by permitting the reduction of lot sizes and certain other regulations hereinafter stated without increasing the number of lots in the total area to be developed.				
Subdivisions	Yes	State, County & Local	Yes – if municipality has a Planning Board	Yes
-				
Comment:				
<ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Subdivision of Land, Chapter 165, adopted by the Township Committee, 8-28-1975 & amended 7-15 2013. The purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision in the Township of Dennis and to implement the goals and objectives of the Pinelands Comprehensive Management Plan. It shall be ad-ministered 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.Since areas of the Township are in the Pinelands, a certificate of filing of an application for minor or major development is required from the Pinelands Commission issued pursuant to N.J.A.C. 7:50-4.34 or, until January 14, 1991, evidence of prior approval from the Pinelands When prior approval for the development has been granted by an approval agency, evidence of Pinelands Commission review pursuant to § 185-49E of Chapter 185, Zoning. Development Review Board or the Pinelands Commission pursuant to the Interim Rules and Regulations				
Stormwater Management	Yes	State & Local	Yes	Yes
-				
Comment:				
<ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Stormwater Control, Chapter 163, adopted by the Township Committee, 04-04-2006 and updated 9/2020. As required by this Chapter, flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department Landscape Project or Natural Heritage Database established under N.J.S.A. 13:1B-15.147 through 15.150, particularly Helonias bullata (swamp pink) and/or Clemmys muhlenbergi (bog turtle).To the maximum extent practicable, the standards in Section 163-4F. and G. shall be met by incorporating nonstructural stormwater management strategies set forth at Section 163-4E. into the design.A written and graphic description of the natural and manmade features of the site and its environs is required. This description should include a discussion of soil conditions, slopes, wetlands, waterways and vegetation on the site. It should be noted that the regulations vary according to a development's location with respect to the Pinelands.The Township also has Storm Drains, Chapters 162A & B to address stormwater.The Township works to minimize off-site storm water runoff by encouraging the use of best management practices which protect the character of the natural drainage systems.				
Post-Disaster Recovery	No	-	No	-
-				
Comment:				
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	No
-				



Table 9.5-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. <ul style="list-style-type: none"> Section 105-1.3 of the Township's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard. 					
Growth Management	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. Since areas of the Township are in the Pinelands District, the goals and objectives of the Pinelands Comprehensive Management Plan shall be administered to ensure orderly growth and development and the conservation, protection and proper use of land. This is a form of a Growth Management, in addition to traditional Zoning. Flood Plan is included in the site plan and is reviewed by the Alternate Engineer. 					
Site Plan Review	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Site plan review is conducted by the Alternate Engineer. 					
Environmental Protection	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Environmental Protection is carried out locally by Code Enforcement. Environmental Commission, Chapter 17, adopted by the Township Committee, 03-04-2014. While this Chapter does not provide specific environmental protection standards, it does create an Environmental Commission, having certain powers and duties, including; <ul style="list-style-type: none"> It shall keep an index of all open areas, publicly or privately owned, including open marshlands, swamps and other wetlands, in order to obtain information on the proper use of such areas, and it may from time to time recommend to the Consolidated Land Use Board plans and programs for inclusion in the Township Master Plan and for the development and use of such areas. The Commission shall review each application and may provide its advice to the Consolidated Land Use Board. The Commission may study and make recommendations concerning open space preservation, water resources management, air pollution control, solid waste management, noise control, soil and landscape protection, environmental appearance, marine resources and protection of flora and fauna. The Commission may, subject to the approval of the Township Committee, acquire property, both real and personal, in the name of the township by gift, purchase, grant, bequest, devise or lease for any of its purposes and shall administer the same for such purposes subject to the terms of the conveyance or gift. 					
Flood Damage Prevention	Yes	State & local	Yes	Yes	-



Table 9.5-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan? If yes-how? Describe in comments If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:				
<ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Flood Damage Prevention, Chapter 105, adopted by the Township Committee, as amended in its entirety 08-22-2017. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas accomplished by; a) Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; b) Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; c) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; d) Controlling filling, grading, dredging, and other development which may increase flood damage; and, e) Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. This Chapter requires 2 feet of freeboard for regulated residential and nonresidential improvements in a SFHA. Porous paving has also been required in appropriate locations. 				
Wellhead Protection	No	-	No	-
Comment:				
Emergency Management	No	-	No	-
Comment:				
Climate Change	No	-	No	-
Comment:				
Disaster Recovery Ordinance	No	-	No	-
Comment:				
Disaster Reconstruction Ordinance	No	-	No	-
Comment:				
Other	No	-	No	-
Comment:				
Planning Documents				
Comprehensive / Master Plan	Yes	Local	Yes	Yes
Comment:				
<ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 10 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. Master Plan – Land Use Plan, Township of Dennis, Adopted by the Planning Board on 12-05-1012. 				



Table 9.5-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> Goal #5 of the Master Plan is to protect sensitive environmental areas from inappropriate development and to provide comprehensive protection for a broad range of natural resources. This appears to be the only goal directly related to environmental preservation and protection. 					
Capital Improvement Plan	Yes	Local	No	Yes	2021-Dennis-005
Comment: <ul style="list-style-type: none"> Capital improvement program 2020. Total capital expenditures this year do not exceed \$25,000, including appropriations for Capital Improvement Fund, Capital Line items and Down Payments on Improvements. No bond ordinances are planned this year. A multi-year list of planned capital projects was provided, including the current year. The only Capital funded Project with a flood prevention aspect in the 2024 planned acquisition of a Drain Vac Truck. 					
Disaster Debris Management Plan	No	-	No	-	2021-Dennis-006
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. Stormwater Pollution Prevention Plan, dated 12-01-2018 					
Stormwater Pollution Prevention Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component Stormwater Pollution Prevention Plan, dated 12-01-2018. 					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Natural Resources Inventory, revised May 2010. This Natural Resources Inventory has been prepared to assist the Township in recognizing and understanding the unique resources present. It provides a tool to identify and protect these resources. The mapping and description of sensitive areas facilitates the proper use and protection of existing natural areas, the appropriate development of the remaining vacant, privately owned land parcels and the redevelopment of developed lands. This inventory can aid in refining zoning regulations and land use ordinances. The identification and understanding of natural systems and their 					



Table 9.5-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan? If yes - how? Describe in comments If no - can it be a mitigation action? If yes, add Mitigation Action #.
<i>inherent and regulatory limitations for development may prevent future environmental problems and associated mitigation costs. The inventory can identify possibilities for regional partnerships and planning activities that can improve environmental conditions and quality of life in the Township.</i>				
Economic Development Plan	No	-	No	-
<i>Comment:</i>				
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-
<i>Comment:</i>				
<ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq. 				
Community Wildfire Protection Plan	No	-	No	-
<i>Comment:</i>				
Community Forest Management Plan	Yes	State & Local	No	Yes
<i>Comment:</i>				
<ul style="list-style-type: none"> Community Forestry Management Plan, dated 12-15-2015, valid to 12-31-2019. The goals of the Plan include; To maximize public safety relative to trees the Township manages through a proactive approach to tree care and management; To fully understand the magnitude of the tree resource for which Township employees are responsible for maintaining and also identify noteworthy trees on public and private land that lend character to the Township; To encourage Township residents to be good stewards of their tree resource; To encourage Township Employees to be good stewards of the Townships tree resource. The Environmental Commission is responsible for the oversight and protection of the community forest within the Township. 				
Transportation Plan	No	-	No	-
<i>Comment:</i>				
Agriculture Plan	No	-	No	-
<i>Comment:</i>				
Climate Action Plan	No	-	No	-
<i>Comment:</i>				
Tourism Plan	No	-	No	-
<i>Comment:</i>				
Business Development Plan	No	-	No	-
<i>Comment:</i>				
Other	No	-	No	-
<i>Comment:</i>				
<ul style="list-style-type: none"> 				
Response/Recovery Planning				
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local, County	Yes	Yes
<i>Comment:</i>				
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. The Township's CEMP refers to the hazard mitigation plan. The Township is also part of the County Emergency Operations Plan 				



Table 9.5-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes-how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	-	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	Yes	Local	No	Yes	-
<i>Comment: The Township has a COOP that will serve to protect the local government and operations from natural hazard disruptions.</i>					
Public Health Plan	Yes	County	No	No	No
<i>Comment:</i>					
• County Public Health Plan and Public Health Assessment.					
Other	No	-	No	-	-
<i>Comment:</i>					

Table 9.5-4. Development and Permitting Capability

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

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Township of Dennis.

Table 9.5-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use/ Planning
Mitigation Planning Committee	Yes	OEM
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	CodeRED
Maintenance program to reduce risk	Yes	Public Works conducts regular maintenance
Mutual aid agreements	Yes	Township Committee
Technical/Staffing Capability		



Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Board Engineer Andy Previtti
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer Jack Gibson
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer Jack Gibson
Staff with training in benefit/cost analysis	Yes	CFO
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	Yes	Charles Adamson
Stormwater engineer	Yes	Engineer
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	John Berg
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Consultants
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the Township of Dennis.

Table 9.5-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Dennis.

Table 9.5-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No



Criterion	Response
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	The Township's website posts information regarding important information and public notices and includes links to important hurricane and other disaster risk information.
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes, website, Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	No

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Dennis.

Table 9.5-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	4- residential, 3-commercial	Unknown
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	-

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 2014). In other words, it describes a jurisdiction's current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction's rating.

Table 9.5-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate



Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement; Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The Township does not have access to resources to determine the possible impacts of climate change upon the municipality. Climate change is not being integrated into current policies/plans or actions. At this time, the administration is not supportive of integrating climate change in policies or actions.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.5-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Department
Who is your floodplain administrator? (name, department/position)	Michael Morano, Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	8/22/2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceeds, requires 2 feet of freeboard and permeable pavement in certain locations
When was the most recent Community Assistance Visit or Community Assistance Contact?	December 2017
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Yes, remapping is underway for Cape May County
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	The floodplain administrator is adequately trained for floodplain management responsibilities, although additional training would be welcome.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?*	46 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	14 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$1,035,224 in payments
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Stormwater Management:** The Township is a MS4 Regulated Community and has stormwater management plan that identifies projects, actions or initiatives to mitigate stormwater flooding. Stormwater Management functions in the community are performed by John Gibson, the Township Engineer.





- **Natural Resources Inventory:** The Natural Resources Inventory was prepared to assist the Township in recognizing and understanding the unique resources present. It provides a tool to identify and protect these resources. The plan includes important information regarding water, biological and cultural resources. The plan specifically addresses coastal resources, floodplains and open space. It does not refer to the hazard mitigation plan, but was intended to support land use decision-making in the Township.
- **Land Use Planning:** The Consolidated Land Use Board reviews applications to determine compliance with natural risk reduction. The Township's Environmental Commission also has functions related to managing natural hazard risk. The Environmental Commission represents the public and its long-term interests as local environmental advocates and advises the Township Council and the planning and zoning boards about environmental impacts of proposed developments and advocates for open-space preservation.
- **Technical Resources:** The Township contracts with firms for benefit-cost analysis needs and grant application support. Township staff receive training and education in support of natural hazard risk reduction.
- **Underground Utility Wires:** The Township administration, developers, and private property owners develop and adopt local regulations requiring new development to have underground utility wires.
- **County Support on Fire Fighting:** The Fire Department is partnering with Cape May County to identify proper locations for and install water draw (siphon) stations to increase fire-fighting capacity and capabilities). The Township relies on private wells; there is no public water distribution. Local Fire Chiefs are working with County Fire Coordinator to become a National Fire Protection Association (NFPA) "Firewise" community. Local Fire Chiefs through attendance at the regular meetings of the Cape May County Fire Chiefs Association, and in partnership with the New Jersey Division of Fire Safety and the New Jersey State Forest Fire Service, expand and enhance public awareness and education programs that support wildfire mitigation at the property owner level; and expand local wildfire preparedness and response capabilities through participation in seminars and training, and the implementation of recommendations and initiatives offered by these agencies, as resources permit.
- **County Support on Flood Issues:** The County Engineering, with municipal support, continue to support County-led efforts to conduct an engineering study to understand flooding issues and evaluate possible solutions:
 - at low areas along Woodbine-Ocean View Road (CR550) in Dennis Township
 - low areas along Court House-South Dennis Road (CR657) near Beaver Dam Road in Dennis Township
 - along Fidler Road (CR638) in Dennis Township
 - along Corsons Tavern Road (CR628) in Dennis Township
- **Environmental Commission:** The Environmental Commission continue to provide and augment environmental assessment regulations to identify and protect sensitive environmental resources.
- **Stormwater Management:** The Department of Public Works minimize off-site storm water runoff by encouraging the use of best management practices which protect the character of the natural drainage systems.



9.5.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Township of Dennis's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.5-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.5-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the County was impacted, the Township did not report damages.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The Township was subject to restrictions due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

Note:

9.5.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Township of Dennis risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Township of Dennis.

- Number of repetitive loss (RL) properties: 1
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: *None*

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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



Table 9.5-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
Ludlams Thorofare Bridge	Bridge	X	X
C.H-S Dennis Rd Bridge	Bridge	X	X
Minmar Marine Basin	Marinas	X	X
Larsen's Marina	Marinas	X	X
East Creek Manor	Senior Facility		X
OCEAN VIEW SERVICE AREA	Potable Water Facilities	X	X
Magnolia Lake Dam	Dams	X	X
East Creek Pond Dam	Dams		X
West Creek Dam	Dams	X	X
Ludlam Pond Dam	Dams		X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- Some roadways/evacuation routes that are susceptible to flooding; i.e. county roads such as Court-House South Dennis Road by Beaver Swamp.
- Falling trees result in power losses due to damage on wires.
- Dennis Township Primary & Elementary Schools (designated as Shelters of Last Resort) and the Dennis Township Recreation Center require backup power.
- The Township has two remaining unmitigated repetitive loss properties.
- Wells are needed at the Ocean View Fire Station on Route 9 and the Dennis Volunteer Fire Company on Petersburg Road.
- The Township needs Variable Message Boards for use in high traffic areas of the Township.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Dennis that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Dennis has significant exposure. A map of the Township of Dennis hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.



As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Dennis. The Township of Dennis has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township indicated the following:

- The Township agreed with the calculated hazard rankings.

Table 9.5-13. Township of Dennis Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
Low	Medium	Medium	Medium	Medium	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Low	High

9.5.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.5-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
TD-1a	Where appropriate, support retrofitting of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Township (likely through NFIP Floodplain Administrator); State OEM, County OEM	Ongoing Capability		
TD-1b	Where appropriate, support acquisition and/or relocation of structures located in hazard-prone areas to protect structures	Township (likely through NFIP Floodplain Administrator);	No Progress, the Township has two remaining unmitigated properties	X	2021-Dennis-001



Table 9.5-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	from future damage, with repetitive loss and severe repetitive loss properties as priority.	State OEM, County OEM			
TD-2	Continue to develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing Capability		
TD-3	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Township OEM	Ongoing Capability		
TD-4	Support County-wide initiatives identified in Section 9.1 of the County Annex. Support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan.	Local departments (as applicable for specific initiative)	Ongoing Capability		
TD-5	Purchase generator for the two Ocean View Fire Stations. These facilities not only serve Dennis Township but provide car storage for Sea Isle City.	Fire Department	Complete		
TD-6	Purchase generators for both Academy Lane and Hagon Road Schools which are both designated 'Shelters of Last Resort'	School Administration	No Progress	X	2021-Dennis-003
TD-7	A water well is needed at Ocean Fire Station #1 to increase response capabilities	Fire Department	No Progress	X	2021-Dennis-002
TD-8	A water well is needed at Dennisville Fire House to increase response capabilities	Fire Department	No Progress	X	2021-Dennis-002
TD-9	Develop and adopt local regulations requiring new development to have underground utility wires.	Township administration; developers and private property owners	Ongoing Capability		
TD-10	Install a water line down Route 9 to supply water to Middle Township	Township DPW	No Progress, no longer a priority		
TD-11	Elevate Sea Isle Blvd roadway and ramps which will require elevation of the Garden State Parkway bridge overpass (intersection of Sea Isle Blvd [CR-601] and Garden State Parkway)	County Engineering with NJTPA	Complete		
TD-12	Purchase and permanently install variable message boards to advise of traffic, alternate routes/detours due to accidents / flooding / wildfire events/other hazardous conditions along the	Township OEM and DPW	No Progress	X	2021-Dennis-004



Table 9.5-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	following Routes through the Township which serve as major evacuation routes: <ul style="list-style-type: none"> • 550 • 347 • 47 • 83 				
TD-13	Continue to investigate solutions to mitigate flooding at the intersection of Routes 47 and 83.	Cape May County; State DOT	Complete		
TD-14	Identify proper locations for and install water draw (siphon) stations to increase fire-fighting capacity and capabilities). The Township relies on private wells; there is no public water distribution.	Fire Department; Cape May County	Ongoing Capability		
TD-15	Elevate Sea Isle Boulevard (CR-601) from the Parkway to the Sea Isle bridge. This project is currently in the State Transportation Improvement Plan (TIP) for construction over the next two years, and is currently in the preliminary engineering phase.	County Engineering with municipal support	Complete		
TD-16	Continue to support County-led efforts to conduct an engineering study to understand flooding issues and evaluate possible solutions: <ul style="list-style-type: none"> •at low areas along Woodbine-Ocean View Road (CR550) in Dennis Township •low areas along Court House-South Dennis Road (CR657) near Beaver Dam Road in Dennis Township •along Fidler Road (CR638) in Dennis Township •along Corsons Tavern Road (CR628) in Dennis Township 	County Engineering with municipal support	Ongoing Capability		
TD-17	Become a National Fire Protection Association (NFPA) "Firewise" community.	Local Fire Chiefs working with County Fire Coordinator	Ongoing Capability		
TD-18	Through attendance at the regular meetings of the Cape May County Fire Chiefs Association, and in partnership with the New Jersey Division of Fire Safety and the New Jersey State Forest Fire Service, expand and enhance public awareness and education programs that support wildfire mitigation at the	Local Fire Chiefs	Ongoing Capability		



Table 9.5-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	property owner level; and expand local wildfire preparedness and response capabilities through participation in seminars and training, and the implementation of recommendations and initiatives offered by these agencies, as resources permit.				
TD-19	Continue to provide and augment environmental assessment regulations to identify and protect sensitive environmental resources.	Environmental Commission	Ongoing Capability		
TD-20	Consider establishment of a Shade Tree Commission.	DPW	No Progress		
TD-21	Continue/Implement a tree maintenance program.	DPW	No Progress	X	2021-Dennis-007
TD-22	Minimize off-site storm water runoff by encouraging the use of best management practices which protect the character of the natural drainage systems.	DPW	Ongoing Capability		

In addition to the above progress, the Township of Dennis identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- None identified

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Dennis participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Dennis participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.5-15 summarizes the comprehensive-range of specific mitigation initiatives the Township of Dennis would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and



the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.5-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.5-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Dennis-001 (TD-1b)	Mitigate Repetitive Loss	<p>Problem: The Township has two remaining unmitigated properties.</p> <p>Solution: The Township will conduct outreach to the two RL/SRL property owners and provide information on property acquisition or relocation. The Township will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$500,000	3 years	High	SIP	PP
2021-Dennis-002 (former TD-7 and TD-8)	Water Wells for Fire Stations	<p>Problem: Water wells are needed at Ocean Fire Station #1 and the Dennisville Fire House to increase response capabilities.</p> <p>Solution: The Township will install water wells at each fire station.</p>	Existing	Drought, Wildfire	3, 4	Fire Department	BRIC, Community Facilities Grant Program, Assistance to Firefighters Grant Program	Increased emergency response capabilities	High	Within 5 years	High	SIP	ES
2021-Dennis-003 (former TD- 6)	Generators for Shelters	<p>Problem: Backup power sources are necessary to maintain critical services for critical facilities. Academy Lane and Hagon Road Schools which are both designated ‘Shelters of Last Resort’ lack backup power sources.</p> <p>Solution: The Township will research the appropriately sized generators for each facility. The Township will then purchase and install generators and necessary electrical components for both schools.</p>	Existing	All Hazards	1, 3, 4	OEM, Engineer	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Continuity of sheltering services	\$50,000 per generator	1 year	High	SIP	ES



Table 9.5-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Dennis-004 (former TD- 12)	Variable Message Boards	Problem: Message boards are needed to conduct outreach and emergency messaging in the Township. Solution: The Township will purchase and permanently install variable message boards to advise of traffic, alternate routes/detours due to accidents / flooding / wildfire events/other hazardous conditions along the following Routes through the Township which serve as major evacuation routes: <ul style="list-style-type: none"> • 550 • 347 • 47 • 83 	N/A	All Hazards	2, 3, 4	OEM	Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Increased emergency messaging	\$20,000 per sign	Within 3 years	High	EAP	PI, ES
2021-Dennis-005	Drain Vac Truck	Problem: The Township requires a Drain Vac Truck to clean storm drains of silt and debris to prevent stormwater flooding. Solution: The Township will purchase a Drain Vac Truck and utilize for regular stormwater cleaning.	N/A	Severe Weather, Flood	3	DPW	Capital budget	Public works capabilities increasing, stormwater flood risk reduced	\$250,000	4 years	High	LPR	PR
2021-Dennis-006	Disaster Debris Management Plan	Problem: The Township lacks a debris management plan. Solution: The Township will develop and adopt a Disaster Debris Management Plan.	N/A	All Hazards	4, 6	Administration	Municipal budget	Plan in place for debris management	Staff time	1 year	High	LPR	ES
2021-Dennis-007 (TD-21)	Vegetation Management Program	Problem: Falling trees result in power losses due to damage on wires. Solution: The Township will develop a vegetation management program.	N/A	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 5	DPW	Municipal budget	Reduction in damages and power loss from falling trees	\$50,000	1 year	High	NSP	NR

Notes:

Acronyms and Abbreviations:

CAV Community Assistance Visit
 CRS Community Rating System
 DPW Department of Public Works

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program
 HMGP Hazard Mitigation Grant Program

Timeline:

The time required for completion of the project upon implementation

Cost:





FEMA Federal Emergency Management Agency
 FPA Floodplain Administrator
 HMA Hazard Mitigation Assistance
 N/A Not applicable
 NFIP National Flood Insurance Program
 OEM Office of Emergency Management

BRIC Building Resilient Infrastructure and Communities
 Program

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:


- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.5-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-Dennis-001 (TD-1b)	Mitigate Repetitive Loss	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High 
2021-Dennis-002 (former TD-7 and TD-8)	Water Wells for Fire Stations	1	0	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Dennis-003 (former TD- 6)	Generators for Shelters	1	1	1	1	1	1	0	1	1	1	0	1	1	1	12	High
2021-Dennis-004 (former TD- 12)	Variable Message Boards	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Dennis-005	Drain Vac Truck	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High
2021-Dennis-006	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-Dennis-007 (TD-21)	Vegetation Management Program	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.5-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise		X	X		X			X
Coastal Erosion		X	X		X			X
Disease Outbreak		X	X		X			X
Drought		X	X		X			X
Flood		X	X		X			X
Hurricane		X	X	X	X			X
Nor'Easter		X	X	X	X			X
Severe Weather		X	X	X	X			X
Severe Winter Weather		X	X	X	X			X
Tsunami		X	X		X			X
Wildfire		X	X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.5-1. Township of Dennis Hazard Area Extent and Location Map 1

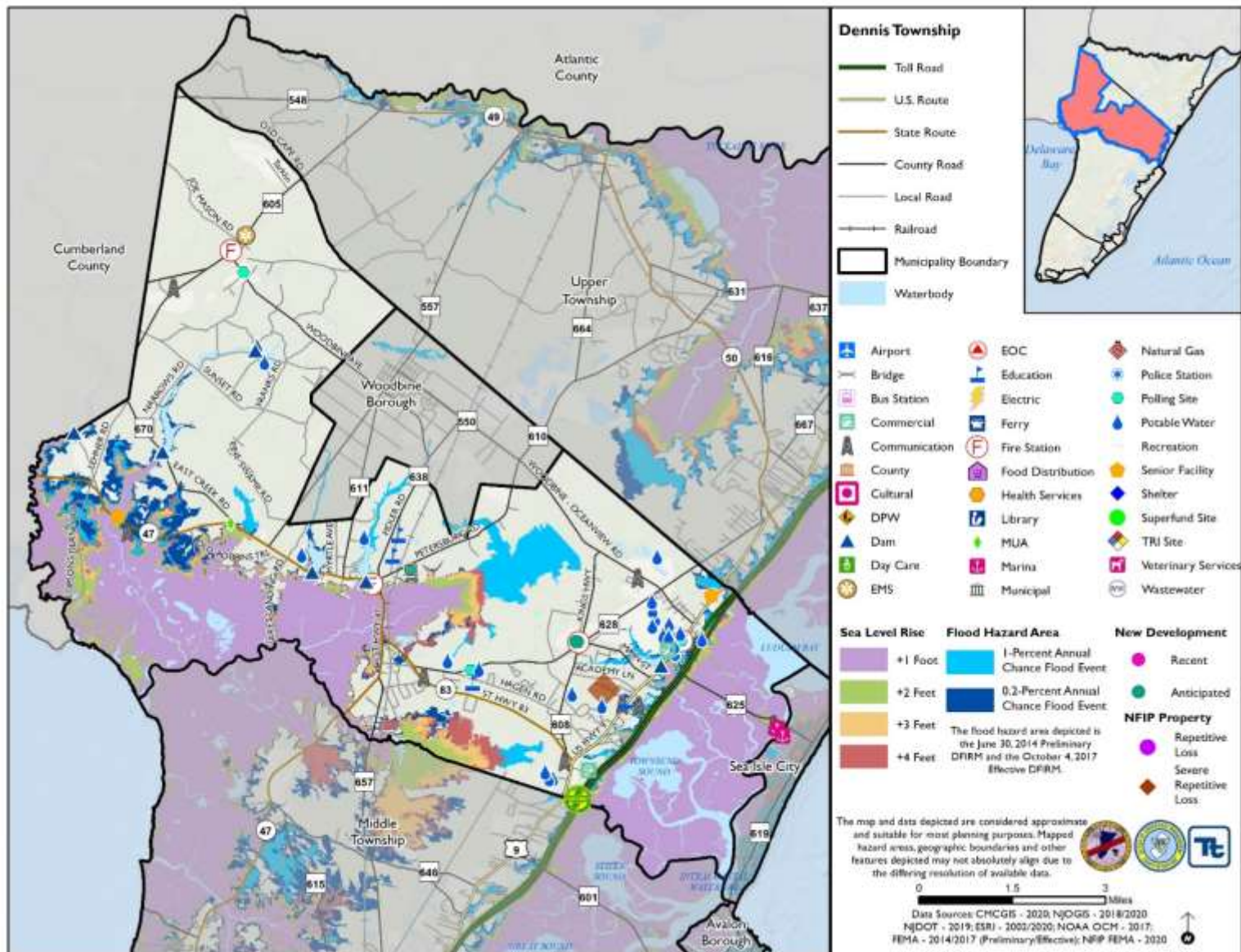


Figure 9.5-2. Township of Dennis Hazard Area Extent and Location Map 2

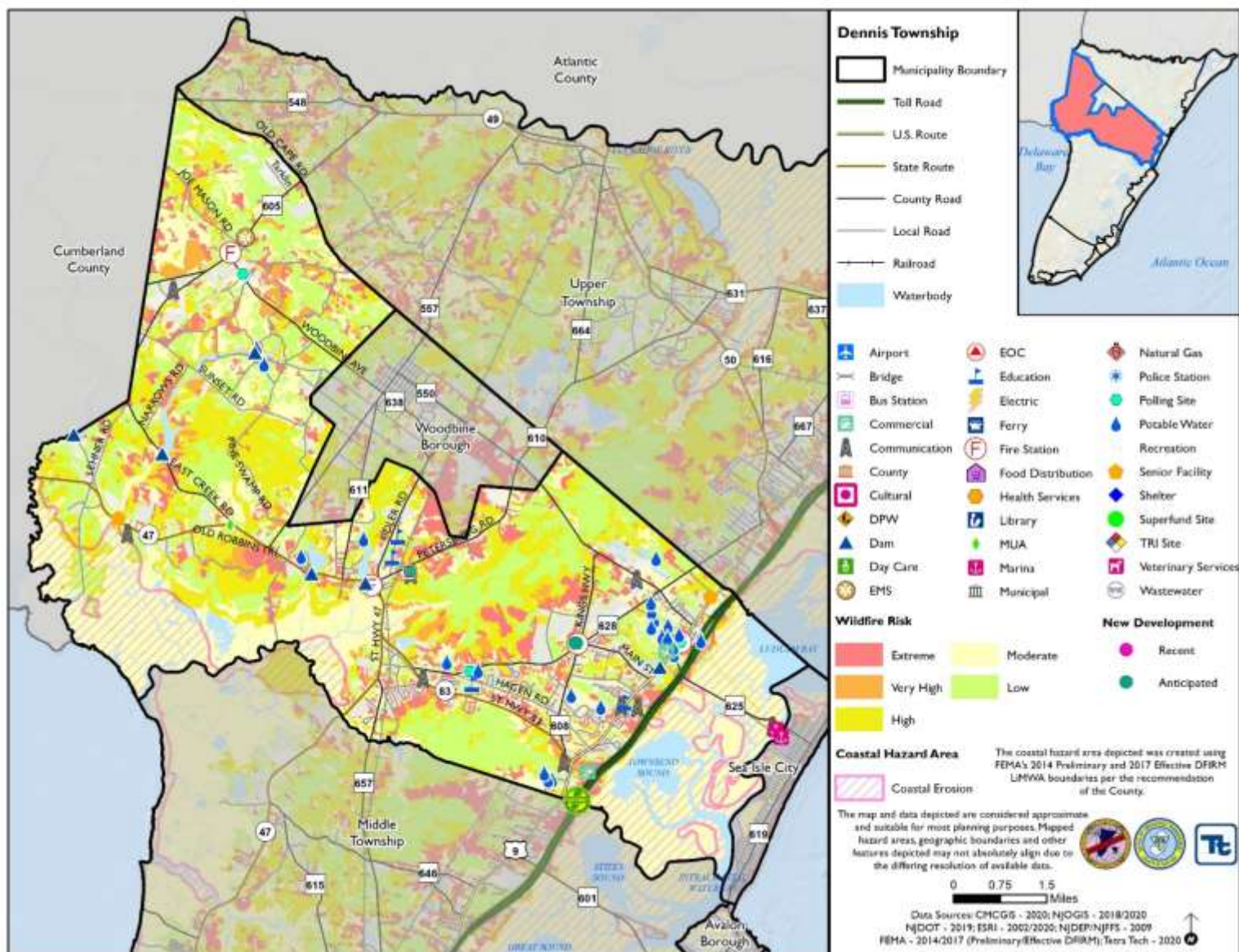
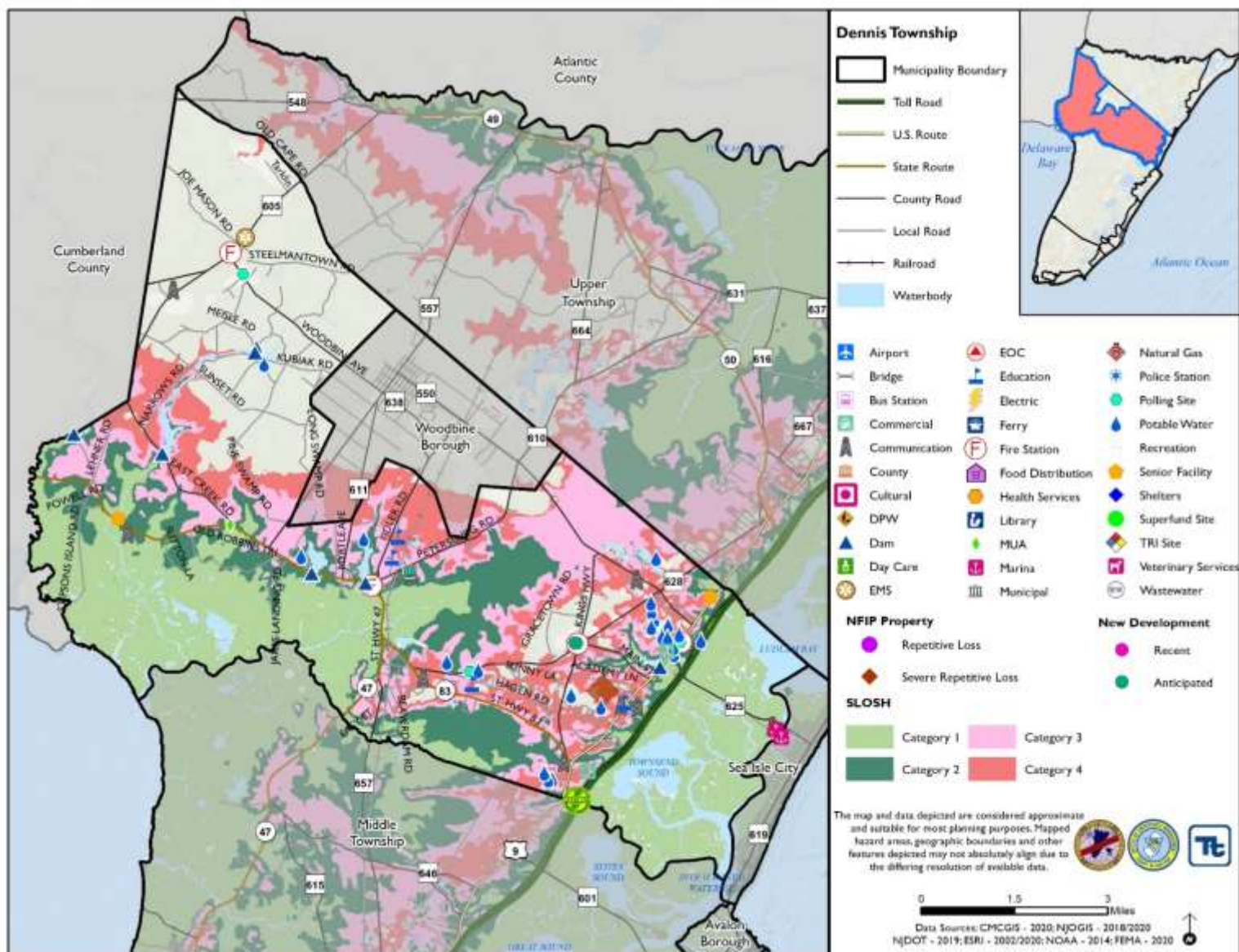


Figure 9.5-3. Township of Dennis Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Mitigate Repetitive Loss		
Project Number:	2021-Dennis-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Township has two remaining unmitigated repetitive loss properties.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will conduct outreach to the two RL/SRL property owners and provide information on property acquisition or relocation. The Township will collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$500,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, BRIC, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Mitigate Repetitive Loss	
Project Number:	2021-Dennis-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Township.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Water Wells for Fire Stations		
Project Number:	2021-Dennis-002 (former TD-7 and TD-8)		
Risk / Vulnerability			
Hazard(s) of Concern:	Drought, Wildfire		
Description of the Problem:	Water wells are needed at Ocean Fire Station #1 and the Dennisville Fire House to increase response capabilities.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will install water wells at each fire station.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	Water sources established	Estimated Benefits (losses avoided):	Tank will ensure continued operations for domestic serve and firefighting before, during and after storm events.
Useful Life:	25 years	Goals Met:	3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 month	Potential Funding Sources:	BRIC, Community Facilities Grant Program, Assistance to Firefighters Grant Program
Responsible Organization:	Maintenance	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Build large water storage tanks	High	Costly, still require water source to fill
	Purchase tankers	High	Costly, still require water source to fill
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Water Wells for Fire Stations	
Project Number:	2021-Dennis-002 (former TD-7 and TD-8)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Well allows for increased firefighting capability
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	Provides service to the community
Administrative	1	
Multi-Hazard	1	Drought, Wildfire
Timeline	0	Within 5 years
Agency Champion	1	Fire Department
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Generators for Shelters		
Project Number:	2021-Dennis-003		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. Academy Lane and Hagon Road Schools which are both designated 'Shelters of Last Resort' lack backup power sources.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will research the appropriately sized generators for each facility. The Township will then purchase and install generators and necessary electrical components for both schools.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of DPW building
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	\$50,000 per generator	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	OEM, Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Generators for Shelters	
Project Number:	2021-Dennis-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of shelters
Property Protection	1	Project will protect schools from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	All Hazards
Timeline	1	1 year
Agency Champion	1	OEM, Engineer
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



9.6 TOWNSHIP OF LOWER

This section presents the jurisdictional annex for the Township of Lower. The annex includes a general overview of the Township of Lower; an assessment of the Township of Lower's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.6.1 Staff and Local Stakeholder Involvement in Annex Development

The Township of Lower followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.6-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact	Alternate Point of Contact	Updated Alternate Point of Contact
Name / Title: Edward Donohue, OEM Director Address: 2600 Bayshore Road, Villas, NJ 08251 Phone Number: (609) 600-7899 Email: oem@townshipoflower.org	Name / Title: Gary Douglass, Deputy OEM Director Address: 2600 Bayshore Road, Villas, NJ 08251 Phone Number: (609) 780-6049 Email: gdouglass@townshipoflower.org	Name / Title: Eileen Kreis, Deputy OEM Director/Manager's Office Address: 2600 Bayshore Road, Villas, NJ 08251 Email: ekreis@townshipoflower.org
NFIP Floodplain Administrator	CRS Coordinator	
Name / Title: Gary Playford, Construction Official Address: 2600 Bayshore Road, Villas, NJ 08251 Phone Number: (609) 886-2005x140 Email: gplayford@townshipoflower.org	Name / Title: Jennifer M. Dowe, CTA, CFM, CRS Coordinator Address: 2600 Bayshore Road, Villas, NJ 08251 Phone Number: (609) 886-2005 x142 Email: assessor@townshipoflower.org	
Name	Title	Method of Participation
Edward Donohue	OEM Coordinator	Primary point of contact, provided information and data, contributed to mitigation strategy, reviewed and signed off on annex
Jennifer M. Dowe, CTA, CFM	Assessor/CSR Coordinator	CRS Coordinator, provided information and data, contributed to mitigation strategy
Gary Douglass	DPW Supt./ Deputy OEM Coordinator	Alternate point of contact, provided information and data, contributed to mitigation strategy, reviewed and signed off on annex
Gary Playford	Construction Official/ Floodplain Manager	NFIP floodplain administrator, provided information and data,



		contributed to mitigation strategy, reviewed and signed off on annex
William Galestok	Planning/Zoning Director	Provided information and data, contributed to mitigation strategy
Frank Sippel	Mayor	Reviewed and signed off on annex
Lauren Read	Chief Finance Officer	Reviewed and signed off on annex
Kevin Lewis	Captain, Police Department	Reviewed and signed off on annex
Donna Blackley	Fire Department	Reviewed and signed off on annex
Rich Harron Jr	Chief, Villas Fire Company	Took stakeholder survey
David Lepor	Chief, Erma Volunteer Fire Company	Took stakeholder survey

9.6.2 Jurisdiction Profile

The Township of Lower is located within the southern section of Cape May County, New Jersey. It is bounded on the north by the Township of Middle and the Delaware Bay, on the east by the Wildwoods and the Atlantic Ocean, on the south by the City of Cape May, Boroughs of West Cape May and Cape May Point and the Atlantic Ocean, and on the west by the Delaware Bay. It is part of the Ocean City Metropolitan Statistical Area. Diamond Beach, Erma, North Cape May and Villas are census-designated places and unincorporated areas located within Lower Township. Other communities in Lower Township include Cold Spring, Fishing Creek, Schellenger's Landing and Town Bank.

According to the U.S. Census, the 2010 population for the Township of Lower was 22,866. The estimated 2018 population was 21,838, a 4.5 percent increase from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 4.4 percent of the population is 5 years of age or younger and 23 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.6.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.6-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.6-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.6-2. Recent and Expected Future Development

Type of Development	2015	2016	2017	2018	2019
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single and Two-Family Units	32	41	52	46	69
Multi-Family	1	0	0	6	1
Other (commercial, mixed-use, etc.)	0	0	0	0	0
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Recent Major Development and Infrastructure from 2015 to Present					
Icona	Residential	62 units	699/3-14.01	AE-9	Not constructed
Macum Corp	Commercial	1	749/6+1.07	None	Not constructed
Platzer	Residential	6	820/2.05	None	Not constructed
Fiskeldan LLC	Commercial	1	452/14	None	Not constructed



Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Cape Real Estate	Residential	6 lots	765/10,12,14-25	None	Not constructed
South Cape Grove	Residential	9 lots	792/6.01	None	Not constructed
Shawmount	Residential	24 lots	494.01/28	None	Not constructed

* Only location-specific hazard zones or vulnerabilities identified.

9.6.4 Capability Assessment

The Township of Lower performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.6.4). The Township of Lower identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.6-3. Planning, Legal and Regulatory Capability

				Have aspects of this been integrated into your mitigation plan?	If no - can it be a mitigation action? If yes, add Mitigation Action #.
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Construction Codes, Uniform, Chapter 235, adopted by Township Council in 1975 and amended through 2017. There is hereby established in the Township a State Uniform Construction Code Enforcing Agency to be known as the "Department of					



Table 9.6-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?					If no - can it be a mitigation action? If yes, add Mitigation Action #.
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	
<i>Construction Inspection," 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.</i>					
<ul style="list-style-type: none"><i>The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code.</i>					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"><i>State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.</i><i>Land Development, Chapter 400, Adopted by Township Council in 1975 and amended through 2018. This is a comprehensive ordinance regulating and limiting the uses of land, the uses and locations of buildings and structures; regulating and restricting the height and bulk of buildings and structures determining the area of yards and other open spaces; regulating and restricting the density of population; dividing the Township of Lower into districts for such purposes; adopting a map of said Township showing boundaries and the classification of such districts; establishing rules, regulations and standards governing the subdivision of land within the Township; establishing a Planning Board and a Board of Adjustment; and prescribing penalties for the violation of its provisions.</i><i>The purposes of this Chapter closely follow the those of the Municipal Land Use Law.</i><i>Section 400-24. FP Floodplains. The purpose and intent of this section is to adopt minimum land use control measures for flood-prone areas in order to comply with the National Flood Insurance Program and qualify the Township and its property owners for the benefits of the program. Such measurements are intended to meet the requirements and criteria of 24 C.F.R. 1910.3(d) in particular, and all other applicable federal laws and regulations. This Chapter contains significant controls on development in the floodplains and wetlands areas of the Township that are mitigation actions.</i>					
Subdivisions	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"><i>P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.</i><i>Land Development, Chapter 400, Adopted by Township Council in 1975 and amended through 2018. As stated under the Zoning Code section above, this is a comprehensive Ordinance and include provisions for Subdivision approval. Section 400-75 addresses Minor Subdivision approval and Section 400-76 address Major Subdivision approval and the design requirements.</i>					
Stormwater Management	Yes	State, County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"><i>See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8</i><i>Stormwater Management, Chapter 575, adopted by Township Council 03-20-2006. Flood control, groundwater recharge, and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.</i>					
Post-Disaster Recovery	No	-	No	-	-



Table 9.6-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none"> N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Section 351-3 of the Township's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard. 					
Growth Management	No	-	Yes – if municipality has a Planning Board	-	-
Comment: <ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. 					
Site Plan Review	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Land Development, Chapter 400, Adopted by Township Council in 1975 and amended through 2018. As stated under the Zoning Code section above, this is a comprehensive Ordinance and include provisions for Site Plan approval. Section 400-77 addresses Preliminary Site Plan review and the development design standards. 					
Environmental Protection	No	-	No	-	-
Comment:					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Flood Damage Prevention, Chapter 351, adopted by Township Council on March 17, 2014. The flood hazard areas of the Township of Lower are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protections and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and 					



Table 9.6-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p><i>when inadequately anchored, causes damage in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.</i></p> <ul style="list-style-type: none"> <i>It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to mitigate future flooding.</i> <i>This Chapter requires new residential construction of improvements to provide 1 foot of freeboard above the Base Flood Elevation.</i> 					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	Yes	Local & State	No	Yes	-
Comment: <ul style="list-style-type: none"> Local Defense/Emergency management Council, Chapter 56, adopted by Township Council and last amended 03-18-2019. The Township of Lower does hereby create a Local Defense/Emergency Management Council which shall establish an adequate organization to assist in supervising and conducting the civil defense and disaster control activities of the Township. The Local Defense/Emergency Management Council shall assist the Township of Lower in establishing the various local volunteer agencies needed to meet the requirements of all local civilian defense and disaster control activities in accordance with the rules and regulations established by the Governor of the State of New Jersey. 					
Climate Change	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	-	-
Comment: <ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. 					
Capital Improvement Plan	No	-	No	-	-
Comment:					
Disaster Debris Management Plan	No	-	No	-	2020-Lower Twp-007



Table 9.6-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Floodplain or Watershed Plan	Yes	Local	Yes	Yes	-
Comment: • Administered by the Construction Department.					
Stormwater Management Plan	Yes	State/Local	Yes	Yes	-
Comment: • The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes	-
Comment: • The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	Yes	-
Comment: • Natural Resource Inventory, Prepared by the Environmental Commission, revised in 2000. • Storms which pass over the Jersey Cape characteristically are accompanied by extremely high tides, strong winds and high waves and breakers. The huge waves and breakers quickly erode the barrier beaches, dunes and roads; damage boardwalks, seawalls, jetties and other protective barriers; undermine buildings; flood streets; contaminate water and food; and disrupt power and communications systems. Short circuits caused by high water often result in fires that also destroy property. In addition, to monetary losses associated with the destruction of property, floods and storms take a toll in human lives. • Essentially; there are two ways. to reduce the damage from such storms: ○ construct protective works such as bulkheads and sea walls ○ regulate development in areas subject to flooding. ○ Generally, a combination of both approaches is necessary, particularly when development has already occurred. In areas which are not yet developed ordinance controls can and should be used to regulate future development in flood prone areas to, minimize potential damage to life and property					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-	-



Table 9.6-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan? If yes- how? Describe in comments If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:				
<ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq. 				
Community Wildfire Protection Plan	No	-	No	-
Comment:				
Community Forest Management Plan	No	-	No	-
Comment:				
Transportation Plan	No	-	No	-
Comment:				
Agriculture Plan	No	-	No	-
Comment:				
Climate Action Plan	No	-	No	-
Comment:				
Tourism Plan	No	-	No	-
Comment:				
Business Development Plan	No	-	No	-
Comment:				
Other	Yes	Local	No	Yes
Comment:				
<ul style="list-style-type: none"> Open Space Recreation Plan, Five Year Master Plan Update, prepared by the Recreation Advisory Board, August 2014. According to the NRPA, natural resource areas are defined as "lands set aside for preservation of significant natural resources, open space, and visual aesthetics." Acquisition of natural resource areas and preserves serves to enhance the quality of the community by maintaining a portion of its natural amenities. Based on these standards, additional unstructured open space should be planned into any new or expanded park. 				
Response/Recovery Planning				
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	State/Local	Yes	Yes
Comment:				
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. 				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-
Comment:				
Post-Disaster Recovery Plan	No	-	No	-
Comment:				
Continuity of Operations Plan	No	-	No	-
Comment:				
Public Health Plan	No	-	No	-
Comment:				



Table 9.6-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other	No	-	No	-	-
Comment:					

Table 9.6-4. Development and Permitting Capability

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

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Township of Lower.

Table 9.6-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board; Zoning Board
Mitigation Planning Committee	Yes	OEM
Environmental Board / Commission	Yes	Environmental Commission; Council
Open Space Board / Committee	Yes	Open Space Review Board; County
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Dept of Public Safety through text, email alerts
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Fire Districts, Fire Vol. Companies, Police
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning, Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineer
Planners or engineers with an understanding of natural hazards	Yes	Planning, Engineer
Staff with training in benefit/cost analysis	Yes	Finance/ CFO
Staff with training in green infrastructure	Yes	Assessor's office/staff
Staff with education/knowledge/training in low impact development	Yes	Planning/Zoning Office
Surveyor	Yes	Jim Walz—Mott McDonald Engineering



Stormwater engineer	Yes	Mott MacDonald Engineering
Personnel skilled or trained in GIS applications	Yes	Assessor's Office/Staff
Local or state water quality professional	Yes	Lower Township MUA/County Health Dept
Scientist familiar with natural hazards in local area	yes	Dr. Stewart Farrell
Emergency manager	Yes	OEM
Watershed planner	No	-
Environmental specialist	Yes	Steven Morey—Mott MacDonald Engineering
Grant writers	Yes	Finance/ Grants
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the Township of Lower.

Table 9.6-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Lower.

Table 9.6-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes—Lauren Suit
Do you have personnel skilled or trained in website development?	Yes—Eileen Kreis/Brett Matthews
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes-Hazard Mitigation Planning Team
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	No

COMMUNITY CLASSIFICATIONS





The table below summarizes the classifications for community programs available to the Township of Lower.

Table 9.6-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	7	10/1/2018
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4-3	2019
Public Protection (Fire ISO Protection Class)	Yes	4-10	2015
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Not currently	155 points at last certification	Last Certification November 1, 2013

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.6-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.6-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Department
Who is your floodplain administrator? (name, department/position)	Gary Playford, Construction Department/Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes/Jennifer M. Dowe, CFM



Criterion	Response
What is the date that your flood damage prevention ordinance was last amended?	April 1, 2014
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	FDP Ordinance exceeds minimum requirements/BFE plus 1 foot freeboard, no fill in floodways
When was the most recent Community Assistance Visit or Community Assistance Contact?	Remote Community Visit – February 22, 2018
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Cape May County Flood Risk Map
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes
How many flood insurance policies are in force in your jurisdiction?*	Policies – 1,454
-What is the insurance in force?	Insurance in force - 653,931,300
-What is the premium in force?	Premium in force - 1,443,459
How many total loss claims have been filed in your jurisdiction?*	207 claims
-How many claims are still open or were closed without payment?	\$3,942,373 in payments
-What were the total payments for losses?	
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- The Township Office of Emergency Management works to create, enhance, and maintain mutual aid agreements with neighboring communities. Local departments support County-wide initiatives identified in Section 9.1 of the County Annex and support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan.
- County Engineering, with municipal support, continues to support County-led efforts to conduct an engineering study to understand flooding issues and evaluate possible solutions (multiple locations).

9.6.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Township of Lower's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.6-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.



Table 9.6-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the county was impacted, the Township did not received damages.
June 22, 2016	Severe Wind Storm	No	A severe windstorm/microburst caused severe damage to vegetation throughout the Township.	The Township was tasked with weeks of cleanup incurring substantial overtime cost.
January 17-18 2017	Winter Weather	No	Winter snowfall event Helena caused road closures with several inches of snow.	The Township was tasked with clearing of roadways covered with snow and ice incurring overtime cost.
August 2020	DR-4574 Wind Storm	Yes	Tropical Storm Isaias caused wind damage to several homes and vegetation damage to properties.	The Township was tasked with cleanup of vegetation and debris throughout the township incurring overtime cost.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The Township was subject to masking and social distancing restrictions and business /school closures due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

9.6.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Township of Lower risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Township of Lower.

- Number of repetitive loss (RL) properties: 6
- Number of severe repetitive loss (SRL) properties: 2
- Number of RL/SRL properties that have been mitigated: 4

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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



Table 9.6-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
HISTORIC COLD SPG VLG HAND PUM	Potable Water Facilities		X
ST RAYMONDS CHURCH AUD	Polling Places		X
CMCMUA	MUA		X
LTMUA	MUA		X
LTMUA	MUA		X
LTMUA	MUA		X
Middle Thorofare Bridge (CMCBC)	Bridge	X	X
Upper Thorofare Bridge	Bridge	X	X
Mill Creek Bridge	Bridge	X	X
Lafayette Street Bridge	Bridge	X	X
Millman Senior and Nutrition Center	Health Services	X	X
Sterling Harbor Marina	Marinas	X	X
Shawcrest Marina	Marinas	X	X
Light House Point Marina	Marinas	X	X
Utsch's Marina	Marinas	X	X
Canyon Club Resort Marina	Marinas	X	X
Harbor View Marina	Marinas	X	X
BreeZee Lee Yacht Basin	Marinas	X	X
Hinch Marina	Marinas	X	X
Two Mile Landing	Marinas	X	X
Snug Harbor Marina	Marinas	X	X
Miss Chris Marina	Marinas	X	X
Windmill Marina	Marinas	X	X
South Jersey Marina	Marinas	X	X
Schooner Island Marina	Marinas	X	X
Wilson Rd Pump Station	Wastewater Treatment Facilities	X	X
SNOWS DOXSEE INC(BUMBLE BEE FOODS)	Superfund Sites	X	X
LTMUA	MUA	X	X
COXHALL CREEK FLOOD	County Facilities	X	X
CMCMUA	MUA	X	X
HARBORVIEW MARINA	Potable Water Facilities	X	X
ATLANTIC CAPE FISHERIES	Potable Water Facilities	X	X
TWO MILE	Potable Water Facilities	X	X
BUMBLE BEE	Grocery/Food Processing	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
LTMUA	MUA	X	X
Lund's Fisheries	Grocery/Food Processing	X	X
Well 5	Potable Water Facilities	X	X
Well 7	Potable Water Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020





Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- High tidal flow from the Atlantic Ocean and Delaware Bay raises the water level in the harbor, causing flooding over the bulkheads in the area.
- Continued erosion has reduced the volume on beaches and resulted in increased risk from wave damage. The latest FEMA maps resulted in a V zone designation due to lack of protective dune height and volume.
- The Township has repetitive loss properties.
- Several county infrastructure upgrades are needed within the Township.
- The Township lacks a Disaster Debris Management Plan.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Lower that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Lower has significant exposure. A map of the Township of Lower hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Lower. The Township of Lower has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township assented to the proposed hazard ranking.

Table 9.6-13. Township of Lower Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
Medium	Medium	Medium	Medium	High	High



Nor'easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	High

9.6.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.6-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
TL-1a (former TL-1a)	Property Mitigation Support – Retrofit	Township (likely through NFIP Floodplain Administrator); State OEM, County OEM	No Progress	X	2021- LowerTwp- 003
TL- 1b (former TL-1b)	Property Mitigation Support – Acquisition/Relocation	Township (likely through NFIP Floodplain Administrator); State OEM, County OEM	In Progress; acquired and demolished a property in repetitive loss area using community funds.	X	2021- LowerTwp- 003
TL- 2 (former TL-2 (CMC-2)	Continue to evaluate the community benefits vs. costs of participation in the incentive-based program CRS.	Township	Ongoing Capability		
TL- 3 (former TL-5)	Complete updates to emergency management plans in 2016.	Municipal Emergency Manager with support from County OEM and NJOEM	Complete		
TL- 4 (former TL-6)	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Township OEM	Ongoing Capability		
TL- 5 (former TL-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex. Support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan	Local departments (as applicable for specific initiative)	Ongoing Capability		
TL- 6 (former TL-8)	Fire Station – Diamond Beach Section (new) sub-station	Fire Dist. # 3 Lower Twp.	No Progress		



Table 9.6-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
TL- 7 (former TL-11)	Bayshore Estates (drainage system, pump station) to mitigate flooding in this area. Approved funding through township funds	Lower Township	Complete		
TL- 8 (former TL-13)	Dune beach replenishment	Lower Township	In Progress	X	2021-LowerTwp-002
TL-9 (former TL-14 (CMC-7)	Support the replacement of three bridges and elevate 2.7 miles of County Route 621 in Lower Township. This project is currently in the scoping phase.	County Engineering	In Progress	X	2021-LowerTwp-004
TL- 10 (former TL-15 (CMC-8 and WCM-12)	Elevate ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM).	County Engineering	In Progress	X	2021-LowerTwp-005
TL- 11 (former TL-16 (CMC-17 and TM-22)	Elevate CR-603 through Lower and Middle Township through Fishing Creek Swamp.	County Engineering	No Progress		
TL- 12 (former TL-17 through 20; (CMC-44, 46, 49, 52)	Continue to support County-led efforts to conduct an engineering study to understand flooding issues and evaluate possible solutions (multiple locations).	County Engineering with municipal support	Ongoing Capability		
TL- 13 (former TL-21 (CMC-69)	Become a National Fire Protection Association (NFPA) “Firewise” community.	Local Fire Chiefs working with County Fire Coordinator	In Progress	X	2021-LowerTwp-006
TL- 14 (former TL-22)	Expand wildfire public awareness, and local preparedness and response capabilities	Local Fire Chiefs	In Progress	X	2021-LowerTwp-006
TL-15	Include natural hazard risk reduction strategies in the Township open space acquisition strategy.	Planning and Zoning Department, Planning Board, Environmental Commission	No Progress		

In addition to the above progress, the Township of Lower identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:



- Conducted Community Outreach seminar for all residents. Sent community outreach flood protection newsletter to residents in SFHA as well as insurance agencies, realtors and chamber of commerce. Included flood awareness bulletin in tax bills. Sent mailer to residents located within repetitive loss areas.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Lower participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Lower participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.6-15 summarizes the comprehensive-range of specific mitigation initiatives the Township of Lower would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.6-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.6-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Lower Twp-001	Wilson Drive Drainage and Roadway Elevation	<p>Problem: High tidal flow from the Atlantic Ocean and Delaware Bay raises the water level in the harbor, causing flooding over the bulkheads in the area.</p> <p>Solution: The Township will elevate bulkheads to reduce the rate that floodwater spreads across the area. The Township will also raise the elevation of Wilson Drive and revise drainage accordingly.</p>	Existing	Flood, Severe Weather, Hurricane, Nor'easter, Climate Change/Sea Level Rise	1	Public Works, Engineer	HMGP, BRIC, State Aid, Municipal budget	Reduction in flood risk and flood damages, access maintained	\$2M	6-9 months	High	SIP	SP
2021-Lower Twp-002	Dune and Beach Replenishment	<p>Problem: Continued erosion has reduced the volume on beaches and resulted in increased risk from wave damage. The latest FEMA maps resulted in a V zone designation due to lack of protective dune height and volume.</p> <p>Solution: The Township will work with NJ DEP, FEMA, and the US Army Corps on mitigation to build secondary dunes to alleviate the V zone designation.</p>	N/A	Coastal Erosion, Flood	5, 6	Engineer, USACE, FEMA	HMGP, BRIC, USACE, NJ DEP	Prevent and reduce wave and erosion damage	High	Within 5 years	High	NSP	NR
2021-Lower Twp-003	Repetitive Loss Mitigation	<p>Problem: Lower Township has six repetitive loss and two severe repetitive loss properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. Progress has been made on elevating buildings and reconstructing new buildings that are more resistant to flooding.</p> <p>Solution: The Township will conduct outreach to the RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement</p>	Existing	Flood, Severe Weather, Hurricane, Nor'easter, Climate Change and Sea Level Rise	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$1M	3 years	High	SIP	PP



Table 9.6-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).											
2021-Lower Twp-004	CR-621 Pacific Ave/Ocean Drive	<p>Problem: CR-621 is a designated County evacuation route for the Wildwoods, including Diamond Beach in Lower Township. The Route traverses a low-lying stretch of marsh that is vulnerable to tidal and nuisance flooding. Additionally, the Route is served by several bridges that are beyond their useful lives.</p> <p>Solution: The Township will support the County in the replacement of three (3) bridges and elevation of 2.7 miles of County Route 621 in Lower Township. The projects are currently in the concept development stage and have been submitted to NJDOT for preliminary engineering.</p>	Existing	Flood, Hurricane, Nor'easter, Climate Change and Sea Level Rise	1, 6	County Engineering, Lower Township Administration	County Funds; NJDOT; BRIC	High	Medium-High	Within 5 years	Medium	SIP	PP
2021-Lower Twp-005	CR-606/Sunset Boulevard	<p>Problem: Sunset Boulevard (CR-606) is a county road connecting Cape May Point and Cape May Point State Park to West Cape May, Cape May, and evacuation routes to the north. The road is low-lying and has portions that can flood with water levels as little as one foot above high tide.</p> <p>Solution: The Township will support the County in the elevation of ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM). Preliminary work has been completed for drainage and the project is in concept design.</p>	Existing	Flood, Hurricane, Nor'easter, Climate Change and Sea Level Rise	1, 6	County Engineering, Lower Township Administration	County Funds, NJDOT, BRIC	Medium	High	Within 5 years	Low	SIP	PP
2020-Lower Twp-006	Firewise Program Participation	Problem: Lower Township features a dense forest cover that covers a significant portion of the Township. Approximately 56% of the Township resides in the wildland-urban interface	Existing	Wildfire	1, 2, 3, 4, 5, 6	NJ State Forest Fire Service; Cape May County Fire Chiefs	Existing Township funds	Improved wildfire capabilities	Low	Within 1 year	Low	EAP	PI



Table 9.6-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		(WUI), and approximately 125 residents (or 0.5% of the population) reside in an area with high to extreme wildfire fuel hazard. Approximately 56% of the Township's buildings are in the WUI, representing \$4.7 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. The Township will also 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.				Association; Lower Twp fire districts; Township of Lower							
2020-Lower Twp-007	Disaster Debris Management Plan	Problem: The Township lacks a Disaster Debris Management Plan. Solution: The Township will develop and adopt a Disaster Debris Management Plan.	Both	All Hazards	3, 4	Public Works, OEM	Township budget	Increased disaster capabilities	Staff time	Within 1 year	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.





Mitigation Category:


- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.6-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-Lower Twp-001	Wilson Drive Drainage and Roadway Elevation	0	1	1	1	1	1	0	1	1	1	1	1	1	1	12	High 
2021-Lower Twp-002	Dune and Beach Replenishment	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-Lower Twp-003	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2021-Lower Twp-004	CR-621 Pacific Ave/Ocean Drive	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-Lower Twp-005	CR-606/Sunset Boulevard	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-Lower Twp-006	Firewise Program Participation	1	1	1	1	1	1	1	1	1	1	0	1	1	1	13	High
2020-Lower Twp-007	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.6-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise		X			X	X	X	X
Coastal Erosion				X	X			X
Disease Outbreak (new)					X			X
Drought (new)					X			X
Flood		X		X	X	X	X	X
Hurricane		X			X	X	X	X
Nor'Easter		X			X	X	X	X
Severe Weather		X			X	X	X	X
Severe Winter Weather					X			X
Tsunami					X			X
Wildfire			X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.6-1. Township of Lower Hazard Area Extent and Location Map 1

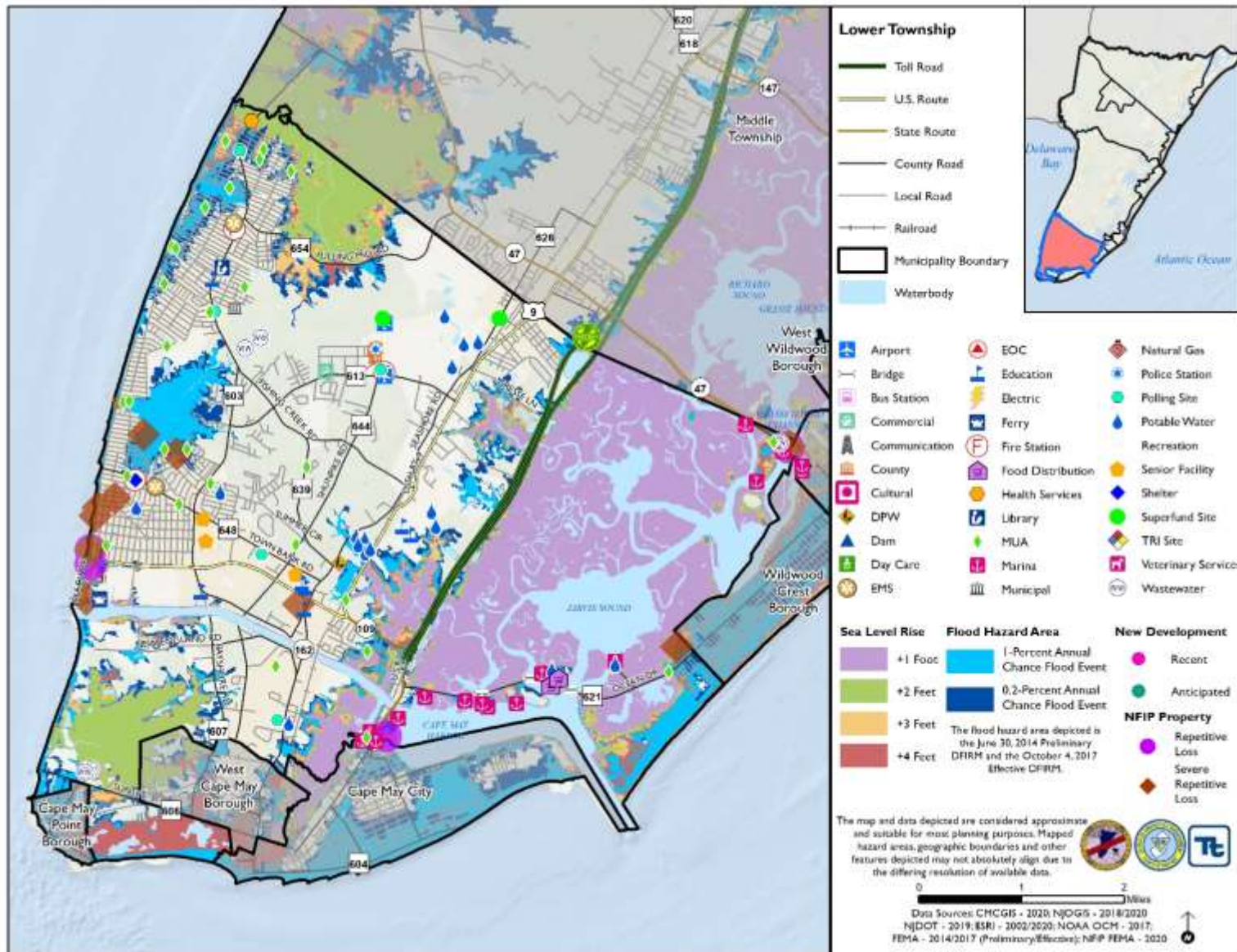




Figure 9.6-2. Township of Lower Hazard Area Extent and Location Map 2

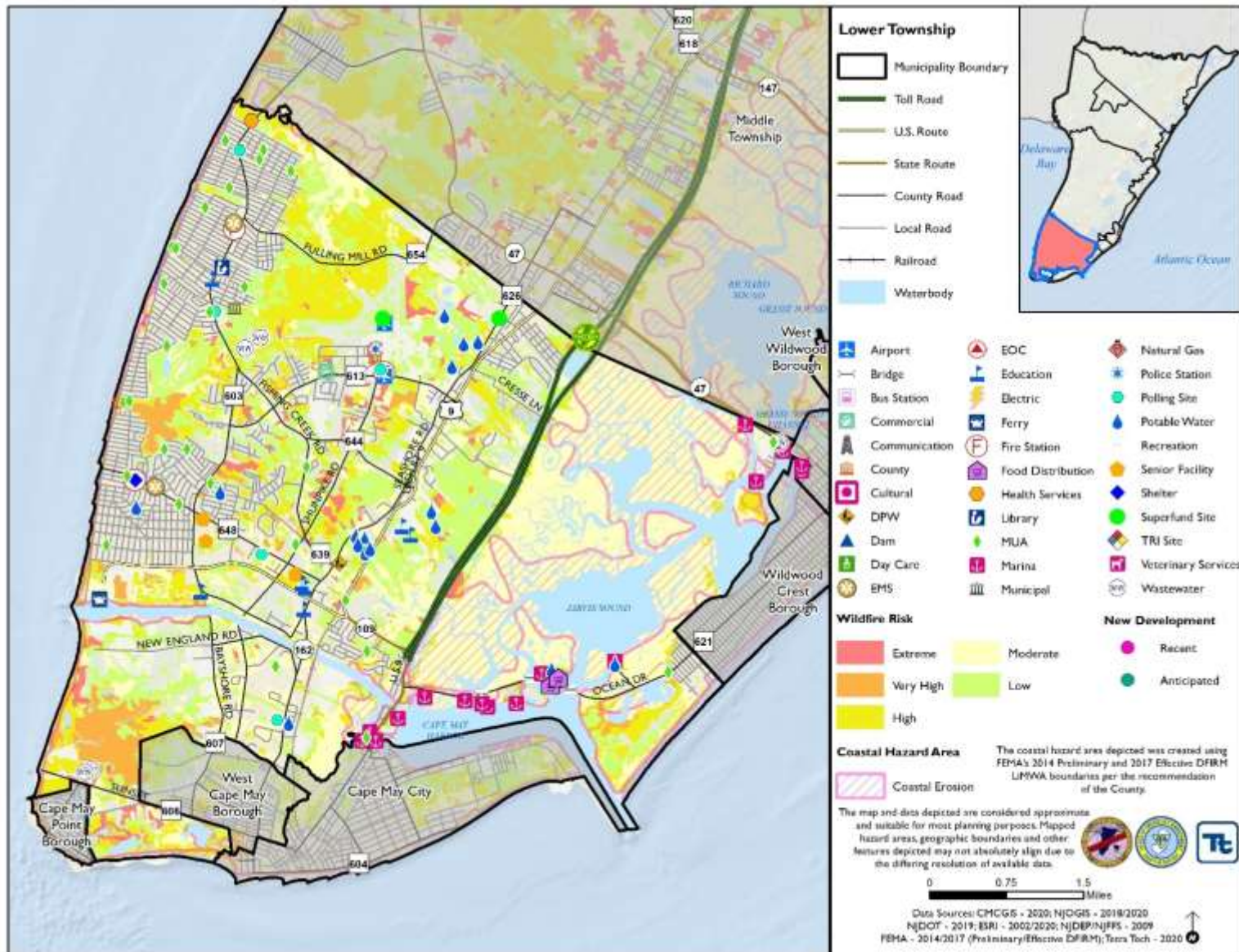
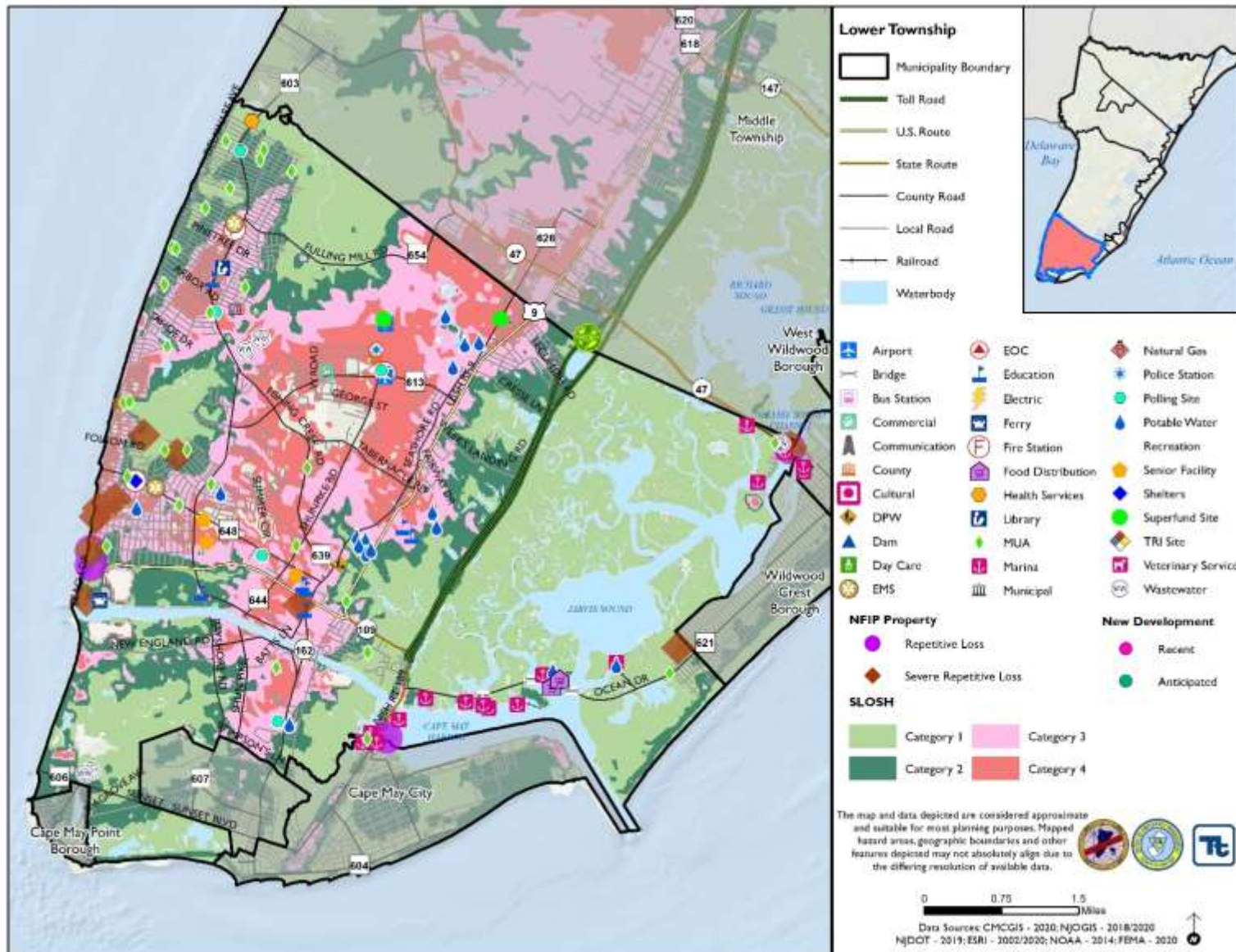


Figure 9.6-3. Township of Lower Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Wilson Drive Drainage and Roadway Elevation		
Project Number:	2021-Lower Twp-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather, Hurricane, Nor'Easter, Climate Change/Sea Level Rise		
Description of the Problem:	High tidal flow from the Atlantic Ocean and Delaware Bay raises the water level in the harbor, causing flooding over the bulkheads in the area.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will elevate bulkheads to reduce the rate that floodwater spreads across the area. The Township will also raise the elevation of Wilson Drive and revise drainage accordingly.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Erosion of park and marina prevented. Damages to boat ramp mitigated.	Estimated Benefits (losses avoided):	Reduction in flood risk and flood damages, access maintained
Useful Life:	15 years	Goals Met:	1
Estimated Cost:	\$2M	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 6 months
Estimated Time Required for Project Implementation:	6-9 months	Potential Funding Sources:	FEMA HMP, BRIC, State Aid, Municipal budget
Responsible Organization:	Public Works, Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Retreat from areas that experience flooding	High	High cost and lack of access
	Remove Roadway	\$25,000	Loss of access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Wilson Drive Drainage and Roadway Elevation	
Project Number:	2021-Lower Twp-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect Wilson Drive from flood damages
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	Project protect social asset
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather, Hurricane, Nor'Easter, Climate Change/Sea Level Rise
Timeline	1	6-9 months
Agency Champion	1	Public Works, Engineer
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Dune and Beach Replenishment		
Project Number:	2021-Lower Twp-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Coastal Erosion, Flood		
Description of the Problem:	Continued erosion has reduced the volume on beaches and resulted in increased risk from wave damage. The latest FEMA maps resulted in a spread of the VE zone designation due to lack of protective dune height and volume.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will work with NJ DEP, FEMA, and the US Army Corps on mitigation to build secondary dunes to alleviate the V zone designation.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Volume and height of dune cross section to remove V zone status	Estimated Benefits (losses avoided):	Prevent and reduce wave and erosion damage
Useful Life:	10 years	Goals Met:	5, 6
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protections
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, USACE, NJ DEP
Responsible Organization:	Engineer, USACE, FEMA	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Harden the shoreline	Very High	Costly, loss of ecosystem services
	Buyout all V zone properties	Very High	Costly, negative social impacts
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Dune and Beach Replenishment	
Project Number:	2021-Lower Twp-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Protects Township from flooding and erosion
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	There is public support for the project
Legal	0	Project will require permitting
Fiscal	0	Project requires funding support
Environmental	1	Beach and dune ecosystem restored
Social	1	
Administrative	1	
Multi-Hazard	1	Coastal Erosion, Flood
Timeline	0	Within 5 years
Agency Champion	1	Administration
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-Lower Twp-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather, Hurricane, Nor'easter, Climate Change and Sea Level Rise		
Description of the Problem:	Lower Township has six repetitive loss and two severe repetitive loss properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. Progress has been made on elevating buildings and reconstructing new buildings that are more resistant to flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will conduct outreach to the RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	3
Estimated Cost:	\$1M	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, BRIC, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-Lower Twp-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Township.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather, Hurricane, Nor'easter, Climate Change and Sea Level Rise, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



9.7 TOWNSHIP OF MIDDLE

This section presents the jurisdictional annex for the Township of Middle. The annex includes a general overview of the Township of Middle; an assessment of the Township of Middle's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.7.1 Staff and Local Stakeholder Involvement in Annex Development

The Township of Middle followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.7-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Sean McDevitt, Chief EMT/EMC/EMS Address: 33 W. Mechanic Street, Cape May Court House Phone Number: (609) 374-2009 Email: smcdevitt@middletownship.com		Name / Title: Rachel Shepherd, Land Use Administrator-Construction/Zoning Address: 33 W. Mechanic Street, Cape May Court House Phone Number: (609) 465-8740 Email: rmshepherd@middletownship.com
NFIP Floodplain Administrator		
Name / Title: Salvatore DeSimone, Floodplain Manager Address: 33 W. Mechanic Street, Cape May Court House Phone Number: (609) 465-8740 Email: sdesimone@middletownship.com		
Name	Title	Method of Participation
Sean McDevitt	Chief EMT/EMC/EMS	Primary point of contact, provided data and information, contributed to mitigation strategy, reviewed and signed off on annex
Rachel Shepherd	Land Use Administrator-Construction/Zoning	Alternate point of contact
Salvatore DeSimone	Floodplain Manager	NFIP floodplain manager
John McCann	Chief, Cape May Court House Fire Department	Took stakeholder survey

9.7.2 Jurisdiction Profile

The Township of Middle is located within the central portion of Cape May County, New Jersey. It is bounded on the north by the Township of Dennis, on the east by the Boroughs of Avalon and Stone Harbor and the Atlantic Ocean, on the south-southeast by the Wildwoods and the Atlantic Ocean, the southwest by the Township of Lower and the west by the Delaware Bay. It is part of the Ocean City Metropolitan Statistical Area. Cape May Court House, Rio Grande and Whitesboro-Burleigh are census-designated places (CDPs) and unincorporated communities located within Middle Township. Green Creek is an unincorporated community that has no corresponding CDP.



According to the U.S. Census, the 2010 population for the Township of Middle was 18,911. The estimated 2017 population was 18,492, a 2.2 percent decrease from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 6.1 percent of the population is 5 years of age or younger and 21.2 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.7.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.7-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.7-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.7-2. Recent and Expected Future Development

Type of Development	2015	2016	2017	2018	2019
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single and Two-Family Units	41	36	74	27	12
Multi-Family	7	0	0	1	0
Other (commercial, mixed-use, etc.)	0	3	3	1	2
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Recent Major Development and Infrastructure from 2015 to Present					
Clean Energy/ South Jersey Gas	CNG Fueling Station	1	650 Shunpike Road	Category 3, 4 Storm	Completed
CRMC Surgery Center	Surgery Center	1	2 Stone Harbor Boulevard	Category 3, 4 Storm	Nearing completion
County Commons	Public Offices/ Commercial	6 units/ 1 bldg.	3801 Route 47 S., Rio Grande	None	Nearing completion
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Laguna Oaks Townhomes	Single family units	12 units/ 3 structures	Block: 335.01 Lot: 5.04	Category 2, 3, 4; Storm Wildfire Intermix Area	Not started yet

* Only location-specific hazard zones or vulnerabilities identified.

9.7.4 Capability Assessment

The Township of Middle performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.



- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.7.4). The Township of Middle identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.7-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> • State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon) • Construction Code, Uniform, Chapter 112, adopted by Township Committee in 1977 and amended through 2018. There is hereby established in the Township of Middle a State Uniform Construction Code enforcing agency to be known as the "Department of Construction Inspection," consisting of a Construction Official, a Building Subcode Official, a Plumbing Subcode Official, an Electrical Subcode Official, a Fire Protection Subcode Official. The Construction Official and the subcode officials shall be determined from time to time by resolution of the Township Committee. • The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code. 					
Zoning Code	Yes.	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> • State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. • Zoning, Chapter 250, adopted by Township Committee 08-01-2011, amended through 2018. • The purposes of this Chapter are comparable to the purposes of the Municipal Land Use Law. • This Chapter's mitigation aspects include the classification of priority lands as hazard-prone areas identified by state and federal regulatory agencies and in the Middle Township hazard mitigation plan, it encourages clustering to provide more open space, and allows 35 ft. building height measured from the Base Flood Elevation to encourage the building elevations in the SFHA. 					
Subdivisions	Yes	County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> • P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act. Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county 					



Table 9.7-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?				
If no - can it be a mitigation action? If yes, add Mitigation Action #.				
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	
by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.				
<ul style="list-style-type: none">Subdivision of Land and Site Plan Review, Chapter 218, adopted by Township Council 01-19-95 and amended through 2018. The purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision and site development in the Township of Middle in order to promote the public health, safety, convenience and general welfare of the municipality. It shall be administered to ensure orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services.Regarding the suitability of lands as a mitigation aspect, this Chapter requires that the developer shall review the suitability of lands in question for development and in that regard shall consider, inter alia,: flood areas and drainage, slope, depth of seasonal high water, vegetation and soils; Flood-prone areas shall be identified and kept free from development and setback distances established along all waterways; encroachment on critical areas such as those having soil conditions unsuitable for proposed development, areas of high water table, steep slopes over 20%, poor drainage and major tree stands shall be avoided; adverse environmental effects such as flooding or sedimentation off-site shall also be avoided; and floodplains and riparian lands shall be identified on the site plan.The New Jersey Department of Environmental Protection, Division of Land Use Regulation, flood hazard area program must approve construction within the one-hundred-year floodplain, and in many instances, the riparian zone. Any requirements of such approval shall be part of the site plan or subdivision approval.Hazard mitigation is included in the Environmental Analysis required for all Major Development. It requires; review of Middle Township hazard mitigation plan (HMP) and identify whether development; is identified as a "repetitive loss" or "severe repetitive loss" property as defined by FEMA (and contained in the HMP); will have a significant impact on identified evacuation routes that are included in the HMP; will negatively impact the areas identified as having flooding issues; and if the project results in impacts to the areas identified in the HMP, propose mitigating measures such as additional open space preserved by deed restriction or conservation easement to serve as a buffer to flood hazards, or installing higher standards of stormwater management on site.				
Stormwater Management	Yes	State & Local	Yes	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Storm Sewers, Chapter 213, adopted by the Township Committee on 09-03-2014.The purpose of this article is to require the retrofitting of existing storm drain inlets which are in direct contact with repaving, repairing, reconstruction, or resurfacing or alterations of facilities on private property, to prevent the discharge of solids and floatables (such as plastic bottles, cans, food wrappers and other litter) to the municipal separate storm sewer system(s) operated by the Township of Middle so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.				
Post-Disaster Recovery	No	-	No	-
Comment:				
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes
Comment: N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision..				
Growth Management	Yes	Local	Yes – if municipality has a Planning Board	-
Comment: <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.Community Development Corporation, Chapter 12, adopted by the Township Committee on 07-19-2004.From the position of managing growth the purposes of the Community Development Corporation are; to accomplish the sale or lease of the Township of Middle's vacant lands to economic enterprises whose settlement thereon is best calculated, in the judgment of the Corporation, to advance the interests of the Township of Middle and of its citizens and inhabitants; and to acquire title to vacant land owned by the Township of Middle for the purpose of resale or lease to economic enterprises whose presence within the Township of Middle will benefit in the judgment of the Corporation, its citizens and inhabitants.				



Table 9.7-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Site Plan Review	Yes	County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Subdivision of Land and Site Plan Review, Chapter 218, adopted by Township Council 01-19-95 and amended through 2018. The purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision and site development in the Township of Middle in order to promote the public health, safety, convenience and general welfare of the municipality. It shall be administered to ensure orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services. Regarding the suitability of lands as a mitigation aspect, this Chapter requires that the developer shall review the suitability of lands in question for development and in that regard shall consider, inter alia, flood areas and drainage, slope, depth of seasonal high water, vegetation and soils; Flood-prone areas shall be identified and kept free from development and setback distances established along all waterways; encroachment on critical areas such as those having soil conditions unsuitable for proposed development, areas of high water table, steep slopes over 20%, poor drainage and major tree stands shall be avoided; adverse environmental effects such as flooding or sedimentation off-site shall also be avoided; and floodplains and riparian lands shall be identified on the site plan. 					
Environmental Protection	Yes	Local & State	No	Yes	-
Comment: <ul style="list-style-type: none"> Environmental Commission, Chapter 16, adopted by the Township Committee on 01-04-1990 and subsequently amended. The purpose of the Environmental Commission shall be the protection, development or use of natural resources, including water resources and solid waste, located within the territorial limits of the Township of Middle. 					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Flood Damage Prevention, Chapter 146, adopted by the Township Council on 09-06-2017. . It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: a. .Protect human life and health b. Minimize expenditure of public money for costly flood control projects ;c Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; d. Minimize prolonged business interruptions. In order to accomplish its purposes, this ordinance includes methods and provisions for: a. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; b. Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; c. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; d. Controlling filling, grading, dredging, and other development which may increase flood damage; and, Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. The Township requires a separate Development Permit be obtained before construction or development begins, including placement of manufactured homes, within any area of special flood hazard. 					
Wellhead Protection	No	-	No	-	-
Comment:					



Table 9.7-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan? If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Emergency Management	No	-	No	-	-
<i>Comment:</i>					
Climate Change	No	-	No	-	-
<i>Comment:</i>					
Disaster Recovery Ordinance	No	-	No	-	-
<i>Comment:</i>					
Disaster Reconstruction Ordinance	No	-	No	-	-
<i>Comment:</i>					
Other	Yes	Local	No	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> Shade Tree Commission, Chapter 66, adopted by the Township Committee on 02-03-1983 and subsequently amended. The purpose of the Middle Township Shade Tree Commission shall be the regulation, planting, care and control of shade and ornamental trees and shrubbery upon and in the streets, highways and public places of the Township of Middle, except state highways, unless the Department of Transportation shall assent thereto, and except county highways and parks, unless the county and/or the County Parks Commission, as the case may be, gives assent thereto. 					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Master Plan – Land Use Plan Update, and Master Plan Re-Examination Report, both adopted by the Township Planning Board 07-22-2010. The specific policy goals with particular relevance to Middle Township are as follows: <ul style="list-style-type: none"> Conserve the State's natural resources and systems by promoting ecologically sound development and redevelopment and accommodating environmentally designed development and redevelopment in Centers in the Fringe, Rural and Environmentally Sensitive Planning Areas. Plan, design, invest in and manage the development and redevelopment of Centers and the use of land, water, soil, plant and animal resources to maintain biodiversity and the viability of ecological systems. Provide adequate public facilities and services at a reasonable cost...purchasing land and easements to prevent development, to protect flood plains and sustain agriculture where appropriate. Provide adequate housing at a reasonable cost... Create and maintain housing in... Centers in the Fringe, Rural and Environmentally Sensitive Planning areas... Preserve and enhance areas with historic, cultural, scenic, open space and recreational value...by comprehensive planning, design, investigation and management techniques The Township is currently in the process of updating the Master Plan 					
Capital Improvement Plan	Yes	Local	No	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> Capital Improvement Program, introduced to the Township Committee on March 2, 2020. This is a Six (6) year capital improvement program will focus on replacing end of useful life and failing vehicles and equipment for both Police Department and 					



Table 9.7-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.				
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	
Public Works. Along with current budget appropriation for minor repairs and improvements to various municipal building, grounds, and equipment, larger price point upgrades and repairs are anticipated to replace various HVAC Systems, maintain/repair/replace various roofs, maintain/repair/replace electrical system. Various road repairs and drainage projects are ongoing priorities as well as addressing aging portions of the Township Sewer System and pump stations.				
Disaster Debris Management Plan	No	-	No	-
2021-MiddleTwp-013				
Comment:				
Floodplain or Watershed Plan	No	-	No	-
Comment:				
Stormwater Management Plan	Yes	State & Local	Yes	Yes
-				
Comment:				
<ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.				
Stormwater Pollution Prevention Plan	No	-	Yes	-
-				
Comment:				
<ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.				
Urban Water Management Plan	No	-	No	-
-				
Comment:				
Habitat Conservation Plan	Yes	Local	No	Yes
-				
Comment:				
<ul style="list-style-type: none">Open Space and Recreation Plan, adopted by the Township Planning Board April 25, 2013.Goals of the Plan include; Promoting the preservation and management of land for wildlife, for water quality and supply, and for open space; and Promote the preservation and management of land for wildlife, for water quality and supply, and for open space.The Township also has a comprehensive Natural Resources Inventory, last revised May, 2010.				
Economic Development Plan	Yes	Local	No	No
Yes				
Comment:				
<ul style="list-style-type: none">Market Analysis, dated March 2013. This report offers data, background and a generalized analysis of the Middle Township economy and market. It is not a comprehensive market study. It does, however, offer sufficient analysis, trend information, and documentation to provide sound direction to help the Township develop marketing policy and target potential new businesses and industry.				



Table 9.7-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-	-
Comment: <ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq. 					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Community Forestry Management Plan, submitted to the State 08-18-2017. The inventory database and mapping will aid in the tree hazard assessment that will be methodically conducted. The focus of this assessment is to identify hazardous trees occurring in close proximity to "targets" or areas of risk, in addition to invasive trees. In the interim, the organizational structure within the Township, principally through the Offices of the Mayor and Department of Public Works, in addition to the Shade Tree Commission, will report hazardous tree conditions to the Superintendent of Public Works. This Department will take corrective actions to address the hazardous tree conditions The storm damage assessment is treated concurrently with CSIP# 5 and #6. The tree inventory provides the database and mapping to monitor the tree resources. The adoption of the Plan, including the Township organizational structure and Shade Tree Commission supported by the Department of Public Works, has positioned the Township to respond to storm damage. The inventory and assessments described in the Plan function as a pre-storm assessment. Because of the intensity of the coastal storms and exposure of the Township, all Township tree resources are at risk. The Department of Public Works is experienced in addressing these challenges, and intends to continue with planning updates and training. The Plan provides the opportunity to evaluate the policies and procedures used by the Township. 					
Transportation Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Transportation Improvement Study, dated July 2011. The primary purpose of this study is to evaluate the transportation conditions and roadway network in Middle Township and propose strategies to enhance mobility for the different travel modes in the Centers of Cape May Court House and Rio Grande/Whitesboro/Burleigh. To address issues identified in the study, a wide range of recommendations were made to enhance mobility and safety for vehicular, transit, bicycle and pedestrian modes in Middle Township. 					
Agriculture Plan	Yes	Local	No	No	-
Comment: <ul style="list-style-type: none"> This is an Ordinance, Farming, Chapter 139 adopted by the Township Committee 07-18-1991 In accordance with purposes and preambles set forth in this Chapter, the following farming activities (produce agricultural and horticultural crops, trees and forest products, livestock, poultry and other related commodities) shall be deemed established as acceptable, recognized and entitled to encouragement and protection as the collective embodiment of the "right to farm," subject in all cases, however, to any supervening applicable federal, state or county laws or regulations respecting the public health, safety or otherwise. 					
Climate Action Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Getting to Resilience Recommendation Report, prepared August 2016. The Plan's recommendations include; Amend the township's Flood Damage Prevention Ordinance to include New Jersey's required freeboard, or higher, if deemed appropriate; Enroll in the NFIP Community Rating System (CRS) program; Review all the automated responses provided in the township's Getting to Resilience Linkages Report; Ensure the municipality's history of coastal flood hazards and disasters are fully documented, and establish a procedure for documenting future flood impacts; Document community assets subject to impacts from future flood hazards in the multi-jurisdictional hazard mitigation plan. 					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	Yes	Local	No	No	-
Comment:					



Table 9.7-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> Market Analysis, dated March 2013. This report offers data, background and a generalized analysis of the Middle Township economy and market. It is not a comprehensive market study. It does, however, offer sufficient analysis, trend information, and documentation to provide sound direction to help the Township develop marketing policy and target potential new businesses and industry 	No	-	No	-	-
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. The Municipal Emergency Manager, with support from County OEM and New Jersey OEM, continue to develop, enhance, and implement existing emergency plans. Township is currently working on updating their EOP. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none"> Municipal Coastal Vulnerability Assessment, dated August 2016. The CVA process is a methodical, step-by-step approach for conducting a comprehensive vulnerability assessment of coastal flooding hazards. It identifies the vulnerability of community assets (identified by the municipality) to a series of future flood hazard scenarios, and the associated consequences to the community. The CVA goes beyond a simple analysis of flooding extent and duration by also examining how flooding will affect the functional capacity of buildings, services, infrastructure, businesses, ecological systems, and residents. The three key steps of the CVA are; Identify and map community assets and selected coastal flood hazard scenario(s); Evaluate the vulnerability of community assets; and Evaluate the overall consequences to the community. 					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	No	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.7-4. Development and Permitting Capability

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



ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Township of Middle.

Table 9.7-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	Yes	Recreation Advisory Board
Economic Development Commission / Committee	Yes	Economic Development Council
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Police Dept./ Emergency Services
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Cape May County Emergency Management. The Township OEM Coordinator creates, enhance, maintain mutual aid agreements with neighboring communities.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning & Zoning Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Department
Planners or engineers with an understanding of natural hazards	Yes	Contract support
Staff with training in benefit/cost analysis	Yes	Administrator
Staff with training in green infrastructure	Yes	Township Engineer
Staff with education/knowledge/training in low impact development	Yes	Township Engineer
Surveyor	Yes	Contract Support
Stormwater engineer	Yes	Contract Support
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	Yes	This is handled by the Cape May County Health Dept.
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Emergency Management Coordinator
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Grants/Econ Dev. Coordinator
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the Township of Middle.

Table 9.7-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes



Financial Resource	Accessible or Eligible to Use?
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes-sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Middle.

Table 9.7-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Laura Bishop Communications LLC
Do you have personnel skilled or trained in website development?	Yes – Lee Ann Russ
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes – Planning and Zoning Board
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Yes – Nixle and Social Media Platforms

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Middle.

Table 9.7-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	Unknown	Unknown
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	03/07/2012

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of



local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction's rating.

Table 9.7-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.7-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Office
Who is your floodplain administrator? (name, department/position)	Salvatore DeSimone, Construction Official/ Floodplain Manager
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	September 6, 2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Yes. We do plan review for Development Permits in flood zones
When was the most recent Community Assistance Visit or Community Assistance Contact?	May 2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	Yes. Incorrect number of vents
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	Yes. Training closer to our County would be helpful
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	No, but we would like to join
How many flood insurance policies are in force in your jurisdiction?*	920 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	757 claims
-How many claims are still open or were closed without payment?	\$9,372,842



Criterion	Response
-What were the total payments for losses?	
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	No

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Sustainable Jersey:** Middle Township is a bronze certified community in the Sustainable Jersey program. Actions that scored points in the program that relate to hazard mitigation include the following:
 - **Climate Adaptation for Flooding Risk:** The Township formed a committee to address the following items with the help of the New Jersey Department of Environmental Protection. This action included the Township Public Works, our Construction Official, Grants Coordinator, Emergency Management Officer and the Business Administrator. Primary Tasks included the following
 - *Coastal Vulnerability Assessments:* The project will offer assistance to coastal communities to perform a Coastal Vulnerability Assessment (CVA) identifying vulnerabilities to coastal hazards based on existing tools developed by the NJ Coastal Management Program including a map depicting relative vulnerability to coastal hazards.
 - *Municipal Hazard Planning Actions:* The project will identify appropriate potential municipal actions to the identified coastal hazards. This New Jersey-specific document is intended to identify potential planning actions, tools, and best management practices for communities to consider in their planning efforts – with particular consideration of New Jersey’s existing regulatory requirements.
 - *Resiliency Planning:* This task funds the direct involvement of project partners with coastal communities to provide direct planning and technical support. JC NERR will provide direct assistance to municipalities to run the Getting to Resilience (GTR) tool, a facilitated questionnaire that assists communities identify gaps in existing planning and policy, and provides recommendations for planning-level responses, as well as links to other programs such as the Community Rating System. UCI, Sustainable Jersey, and NJ Future will provide communities with planning support and assist in the identification of vulnerabilities and appropriate responses, utilizing the CVA and compendium of municipal actions.
 - *NJ Coastal Management Program:* Based on the results and experience of project partners, the NJ Coastal Management Program will consider proposed changes to the Program’s enforceable actions pursuant to the Coastal Zone Management Act.
 - **Emergency Communications Planning:** The Township has an Emergency Operations Manager who oversees communications in case of an emergency. The Township also works in conjunction with the County of Cape May for seamless information sharing.

9.7.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Township of Middle’s history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.7-11 provides details regarding municipal-specific



loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.7-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the County was impacted, the Township did not receive damages.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The Township was subject to masking and social distancing restrictions and business /school closures due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

9.7.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Township of Middle risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Township of Middle.

- Number of repetitive loss (RL) properties: 79
- Number of severe repetitive loss (SRL) properties: 14
- Number of RL/SRL properties that have been mitigated: 21

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.7-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure 1% Event	Exposure 0.2% Event
No Name	Communications Facility		X
Cape May County Correctional Center	County Facilities		X
Compost Plant	County Facilities		X
MIDDLE TOWNSHIP HIGH SCHOOL	Education		X
CAPE MAY COUNTY TECHNICAL	Education		X
Ocean Academy	Education		X
GOSHEN VOLUNTEER FIRE COMPANY	Fire Stations		X
KING NUMMY CG-WELLS 5 &	Potable Water Facilities		X
HIDEAWAY BEACH CONDO ASSOC	Potable Water Facilities		X
OLD STAGECOACH CG-WELL #	Potable Water Facilities		X
WM OF NJ INC - MIDDLE MAR-TEE LANDFILL	Superfund Sites		X



Name	Type	Exposure	
		1% Event	0.2% Event
Gravens Thorofare Bridge	Bridge	X	X
Ingrams Thorofare Bridge	Bridge	X	X
Leonards Thorofare Bridge	Bridge	X	X
Scotch Bonnet Bridge	Bridge	X	X
Great Channel Bridge	Bridge	X	X
Grassy Sound Bridge (CMCBC)	Bridge	X	X
Hand Avenue Bridge	Bridge	X	X
96th. Street Bridge	Bridge	X	X
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
Public Safety Training Center	County Facilities	X	X
Chambers of Commerce	County Facilities	X	X
Park Commission South	County Facilities	X	X
Nummytown Mill Pond Dam	Dams	X	X
Beaver Club Dam	Dams	X	X
Rutgers Cape Shore Laboratory	Education	X	X
Fire Marshal	Fire Stations	X	X
Dad's Place Marina	Marinas	X	X
Grassy Sound Marina	Marinas	X	X
Pier 47, Inc.	Marinas	X	X
Bayway Marina	Marinas	X	X
Avalon Point Marina	Marinas	X	X
Avalon Anchorage	Marinas	X	X
Stone Harbor Marina	Marinas	X	X
Smokey's Marina	Marinas	X	X
Scotch Bonnet Marina	Marinas	X	X
WILDWOOD GOLF & CC CLUB H	Potable Water Facilities	X	X
WILDWOOD GOLF & CC MAINT	Potable Water Facilities	X	X
KING NUMMY CG-WELLS 3 &	Potable Water Facilities	X	X
CAPE MAY TECHNICAL SCHOOL	Superfund Sites	X	X
Old Avalon Rd Pump Station	Wastewater Treatment Facilities	X	X
Stone Harbor Pump Station	Wastewater Treatment Facilities	X	X
Maryland St Pump Station	Wastewater Treatment Facilities	X	X
Route 47 Wwtp	Wastewater Treatment Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The Township has 79 repetitive loss properties and 14 severe repetitive loss properties that require mitigation.
- Frequent tidal flooding affects various roadways, impacting access to residences and businesses and restricting emergency access.
- Numerous roadways in Middle Township are not wide enough to accommodate heavy traffic that would be expected during evacuation.
- Numerous roadways in Middle Township are impacted by flooding and potential drainage issues. The exact causes of flooding and the potential solutions have not yet been identified. These roadways are County owned.
- South Dennis Road experiences stormwater flooding. The road lacks a stormwater system. The road is county owned.
- Municipal buildings require protection from storm damages to ensure continuity of operations.
- Flooding is a recurring issue in the Reeds Beach area of the Township, impacting residential properties.
- The Township has elevated wildfire risk. Water drawn stations are limited in certain areas.



- Stormwater flooding is an issue on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township.
- The Township has significant flood risk but works to offer various floodplain administrative services that go beyond the requirements of the NFIP.
- Ocean Drive is a County roadway which requires protections from flood damage.
- The Township lacks a debris management plan.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Middle that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Middle has significant exposure. A map of the Township of Middle hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Middle. The Township of Middle has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township assented to the hazard ranking.

Table 9.7-13. Township of Middle Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
Medium	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Low	High

9.7.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS



The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.7-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
TM-1a	Property Mitigation Support – Retrofit	Township (likely through NFIP Floodplain Administrator)	In progress	X	2021-MiddleTwp-001
TM-1b	Property Mitigation Support – Acquisition/Relocation	Township (likely through NFIP Floodplain Administrator)	No progress	X	2021-MiddleTwp-001
TM-2 [former TM-2 and TM-4 (CMC-2)]	Continue to maintain compliance with, and good-standing in the National Flood Insurance program, as well as continued evaluation of entering the CRS program in consideration of local resources to support the program and the overall benefits to NFIP insured property owners.	Township (likely through NFIP Floodplain Administrator)	In progress	X	2021-MiddleTwp-011
TM-3 (former TM-3)	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0.	Township (through mitigation planning point of contacts)	Ongoing capability		
TM-4 (former TM-4)	Continue to develop, enhance, and implement existing emergency plans. Township is currently working on updating their EOP.	Municipal Emergency Manager with support from County OEM and NJ OEM	Ongoing capability		
TM-5 (former TM-5)	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Township OEM Coordinator	Ongoing capability		
TM-6 (former TM-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex. Support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan.	Local departments (as applicable for specific initiative)	Ongoing capability		
TM-7 (former TM-8)	Purchase back-up generator to supply back-up power to the regional shelter located at Elementary #2 School.	School Board, as supported by Township (grant funding)	No progress		



Table 9.7-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	Continue to seek available grant funding.				
TM-8 (former TM-9)	Widen the lanes of Route 47 to accommodate more traffic. This heavily trafficked roadway is an essential evacuation route. This project would be a part of a regional project with Dennis Township and Cumberland County.	Middle Township; Dennis Township;	No progress	x	2021-MiddleTwp-003
TM-9 (former TM-10)	Widen the lanes on Courthouse Dennisville Road to accommodate more traffic. This heavily trafficked roadway is an essential evacuation route.	Cape May County; Cumberland County; State of New Jersey	No progress	X	2021-MiddleTwp-003
TM-10 (former TM-11)	Widen the lanes on Indian Trail Road (County Road). This heavily trafficked roadway is an essential evacuation route.	Middle Township; Cape May County	No progress	X	2021-MiddleTwp-003
TM-11 (former TM-12)	Elevate Beach Avenue on Reeds Beach to mitigate flooding.	Middle Township; Cape May County	No progress	X	2021-MiddleTwp-002
TM-12 (former TM-13)	Purchase and install hurricane shutters on municipal buildings; with high priority to Town Hall.	Middle Township	No progress	X	2021-MiddleTwp-006
TM-13 (former TM-14)	Bulkheads on Reeds Beach to mitigate flooding in residential area which will mitigate flooding for approximately 30 homes.	Middle Township	In progress	X	2021-MiddleTwp-007
TM-14 (former TM-15)	Elevate Springer's Mill Road to mitigate flooding	Middle Township	No progress	X	2021-MiddleTwp-002
TM-15 (former TM-16)	Connect Grassy Sound's sewers to public sewer system. The existing sewer system consists of an above-ground tank that is vulnerable to flooding. This would be a multi-jurisdictional effort with North Wildwood.	Cape May County	Completed		
TM-16 (former TM-17)	Elevate Route 9 by High Tech in Edgewood to mitigate flooding.	North Wildwood; Middle Township	No progress	X	2021-MiddleTwp-002
TM-17 [former CMC-9]]	Elevate Route 47 roadway and ramps, which will require elevating the Garden State Parkway bridge overpass (intersection of State Route	Middle Township; State of New Jersey	No progress	X	2021-MiddleTwp-002



Table 9.7-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	47 and Garden State Parkway)				
TM-18 [former (CMC-12)]	Elevate Route 147 roadway and ramps, which will require elevating the Garden State Parkway bridge overpass (intersection of State Route 147 and Garden State Parkway)	NJ DOT; New Jersey Turnpike Authority	No progress	X	2021-MiddleTwp-002
TM-19 [former (CMC-20)]	As an interim project prior to implementation of TM-21 below, elevate the Avalon Boulevard northbound onramp to the GSP (chronic problem area and critical for evacuation)	NJ DOT; New Jersey Turnpike Authority	No progress, County and State Road	X	2021-MiddleTwp-002
TM-20 [former (CMC-21)]	Elevate Avalon Blvd roadway and ramp, which will require elevating the Garden State Parkway bridge overpass (intersection of Avalon Blvd and Garden State Parkway)	County Engineering with NJTPA	No progress, County and State Road	X	2021-MiddleTwp-002
TM-21 (former TM-22)	Identify and install proper locations for and install water drawn stations (siphons) to increase fire-fighting capabilities.	NJ DOT; New Jersey Turnpike Authority	No progress	X	2021-MiddleTwp-008
TM-22 [former (CMC-17 and TL-16)]	Elevate CR-603 (Bayshore Road) through Lower and Middle Townships through Fishing Creek Swamp. County to advise as to status of this project	Township	No progress	X	2021-MiddleTwp-002
TM-23 [former (CMC-22, Avalon)]	Elevate Avalon Boulevard from Parkway into Avalon proper (~2.5 miles).	Cape May County	No progress, County Road	X	2021-MiddleTwp-002
TM-24 [former (CMC-43)]	Conduct an engineering study to understand flooding issues and evaluate possible solutions along the entire length of Shunpike Road (CR620) in Middle Township	County Engineering		X	2021-MiddleTwp-004
TM-25 [former (CMC-50)]	Conduct an engineering study to understand flooding issues and evaluate possible solutions at low areas along Satt Boulevard (CR626) in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-004
TM-26 [former (CMC-51)]	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Railroad	County Engineering with municipal support		X	2021-MiddleTwp-004



Table 9.7-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	Avenue (CR626) in Middle Township				
TM-27 [former (CMC-53)]	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Dias Creek Road (CR612) in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-004
TM-28 [former (CMC-54)]	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Indian Trail Road (CR618) in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-004
TM-29 [former (CMC-55)]	Conduct an engineering study to understand flooding issues and evaluate possible solutions along Goshen-Swainton Road (CR646) in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-004
TM-30 [former (CMC-62)]	Install shore/roadway protection along Ocean Drive (CR619) in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-012
TM-31 [former (CMC-63)]	Construction of storm drain pipe to minimize flooding on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-009
TM-32 [former (CMC-64)]	Construction of storm sewer system to alleviate flooding on Court House – South Dennis Road (CR657) from Village Drive to College Drive in Middle Township	County Engineering with municipal support		X	2021-MiddleTwp-005
TM-33 (former TM-34 (CMC-69))	Become a National Fire Protection Association (NFPA) “Firewise” community.	Local Fire Chiefs working with County Fire Coordinator		X	2021-MiddleTwp-010
TM-34 (former TM-35)	Enhanced Wildfire Public Awareness and Education	Local Fire Chiefs		X	2021-MiddleTwp-010

In addition to the above progress, the Township of Middle identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- The Township installed a generator at the MLK Center.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Middle participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The



Township of Middle participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.7-15 summarizes the comprehensive-range of specific mitigation initiatives the Township of Middle would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.7-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.7-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-MiddleTwp-001	Repetitive Loss Mitigation	<p>Problem: The Township has 79 repetitive loss properties and 14 severe repetitive loss properties that require mitigation.</p> <p>Solution: The Township will conduct outreach to the RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$10M	3 years	High	SIP	PP
2021-MiddleTwp-002	Roadway Elevations	<p>Problem: Frequent tidal flooding affects various roadways, impacting access to residences and businesses and restricting emergency access.</p> <p>Solution: The Township will elevate the following roadways. Roadway elevation designs will be determined via engineering studies and cost benefit analyses for each roadway. Projects involving County or State Roadways will involve the County or State leading or cooperating in order to proceed:</p> <ul style="list-style-type: none"> • Pierces Point Road • Springer's Mill Road • Beach Avenue on Reeds Beach • Avalon Boulevard from Parkway into Avalon proper (~2.5 miles), which will require elevating the Garden State Parkway bridge overpass 	Existing	Flood, Severe Weather, Climate Change and Sea Level Rise	1, 6	Borough Engineer, County	HMGP, BRIC, Township budget, County budget	Prevent or reduce flooding on roadways	High	Within 5 years	Medium	SIP	PP



Table 9.7-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		(intersection of Avalon Blvd and Garden State Parkway) <ul style="list-style-type: none"> Route 9 by High Tech in Edgewood Route 47 roadway and ramps, which will require elevating the Garden State Parkway bridge overpass (intersection of State Route 47 and Garden State Parkway) Route 147 roadway and ramps, which will require elevating the Garden State Parkway bridge overpass (intersection of State Route 147 and Garden State Parkway) CR-603 (Bayshore Road) through Lower and Middle Townships through Fishing Creek Swamp 											
2021-MiddleTwp-003	Widen Roadways to Support Evacuations	<p>Problem: Numerous roadways in Middle Township are not wide enough to accommodate heavy traffic that would be expected during evacuation.</p> <p>Solution: The Township will widen the lanes of roadways to accommodate more traffic. The roadways targeted will include the following:</p> <ul style="list-style-type: none"> Dennisville Road Indian Trail Road (County Road) Route 47 (part of a regional project with Dennis Township and Cumberland County) 	Existing	All hazards	1, 4, 6	Engineer, Cape May County, Dennis Township, Cumberland County	HMGP, BRIC, PDM, County budget, Township budget	Increased evacuation capabilities	High	Within 5 years	High	SIP	PP, ES



Table 9.7-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-MiddleTwp-004	Flood Studies	<p>Problem: Numerous roadways in Middle Township are impacted by flooding and potential drainage issues. The exact causes of flooding and the potential solutions have not yet been identified. These roadways are County owned.</p> <p>Solution: The Township will work with the County to conduct engineering studies to better understand flooding issues and evaluate possible solutions at the following flooding hotspots. The Township will then support the County in the implementation of identified solutions.:</p> <ul style="list-style-type: none"> • Shunpike Road (CR620) • Satt Boulevard (CR626) • Railroad Avenue (CR626) • Dias Creek Road (CR612) • Indian Trail Road (CR618) • Goshen-Swainton Road (CR646) 	Existing	Flood, Severe Weather	1, 6	County, Township Administration	County budget	Flood issues identified,	Township staff time	Within 5 years	High	SIP	PP, SP
2021-MiddleTwp-005	Stormwater on South Dennis Road	<p>Problem: South Dennis Road experiences stormwater flooding. The road lacks a stormwater system. The road is county owned.</p> <p>Solution: The Township will support the County's construction of storm sewer system to alleviate flooding on Court House – South Dennis Road (CR657) from Village Drive to College Drive in Middle Township</p>	Existing	Flood, Severe Weather	1, 6	County, Township Administration	County budget	Reduction in stormwater flooding	Township staff time	Within 5 years	High	SIP	SP
2021-MiddleTwp-006	Retrofit Municipal Buildings for Storms	<p>Problem: Municipal buildings require protection from storm damages to ensure continuity of operations.</p> <p>Solution: The Township will purchase and install hurricane shutters on municipal buildings; with high priority to Town Hall.</p>	Existing	Hurricane, Nor'Easter, Severe Weather, Severe Winter Weather	1, 3, 4	OEM	FEMA HMGP, BRIC, USDA Community Facilities Grant Program,	Reduction in wind damages	Medium	Within 5 years	High	SIP	PP



Table 9.7-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
							Emergency Management Performance Grants (EMPG) Program, Town Budget						
2021-MiddleTwp-007	Reeds Beach Bulkheads	Problem: Flooding is a recurring issue in the Reeds Beach area of the Township, impacting residential properties. Solution: The Township will install bulkheads on Reeds Beach to mitigate flooding in residential area which will mitigate flooding for approximately 30 homes.	Existing	Flood, Hurricane and Tropical Storm, Nor'Easter, Coastal Erosion, Climate Change and Sea Level Rise	1	Engineer	HMGP, BRIC, Township budget	Reduction in flood risk	High	Within 5 years	High	SIP	SP
2021-MiddleTwp-008	Increase Firefighting Capabilities	Problem: The Township has elevated wildfire risk. Water drawn stations are limited in certain areas. Solution: The Township will identify and install proper locations for and install water drawn stations (siphons) to increase fire-fighting capabilities.	New	Drought, Wildfire	1, 4, 6	Engineer, OEM, NJ DOT, New Jersey Turnpike Authority	HMGP, BRIC, Assistance to Firefighters Grant Program, Emergency Management Grant Program, Township budget, NJ DOT, New Jersey Turnpike Authority	Increased emergency response capabilities	High	Within 5 years	High	SIP	PP
2021-MiddleTwp-009	Stormwater Improvements on Goshen Road	Problem: Stormwater flooding is an issue on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township.	Existing	Flood, Severe Weather	1, 6	County, Township Administration	County budget	Reduction in stormwater flooding	Staff time	Within 5 years	High	SIP	SP



Table 9.7-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: The Township will support the construction of a storm drain pipe to minimize flooding on Goshen Road (CR615) from Johnson Lane to Church Street in Middle Township.											
2021-MiddleTwp-010	Join Firewise Program	Problem: The Township has a significant amount of wildfire risk. Solution: The Township will become a National Fire Protection Association (NFPA) "Firewise" community and work to enhance wildfire public awareness and education efforts.	New and Existing	Wildfire	1, 2, 4, 5, 6	Administration, OEM	Township budget	Increased wildfire awareness	Staff time	Within 5 years	High	LPR, EAP	PI
2021-MiddleTwp-011	Join Community Rating System	Problem: The Township has significant flood risk but works to offer various floodplain administrative services that go beyond the requirements of the NFIP. Solution: The Township will join the Community Rating System Program.	New and Existing	Flood	1, 2, 4, 5, 6	NFIP FPA, Administration	Township budget	Reduced flood risk, increasing capabilities, reduced flood insurance premiums	Staff time	Within 5 years	High	LPR	PP, PR, ES, NR, SP, PI
2021-MiddleTwp-012	Shore/Roadway Protection on Ocean Drive	Problem: Ocean Drive is a County roadway which requires protections from flood damage. Solution: The Township will support the County's installation of shore/roadway protection along Ocean Drive (CR619).	Existing	Flood, Severe Weather	1, 6	County, Township Administration	County budget	Reduction in flooding damages	Staff time	Within 5 years	High	SIP	PP
2021-MiddleTwp-013	Disaster Debris Management Plan	Problem: The Township lacks a debris management plan. Solution: The Township will develop and adopt a Disaster Debris Management Plan.	N/A	All Hazards	4, 6	Administration	Municipal budget	Plan in place for debris management	Staff time	1 year	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV Community Assistance Visit
CRS Community Rating System
DPW Department of Public Works
FEMA Federal Emergency Management Agency

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program
HMGP Hazard Mitigation Grant Program
BRIC Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.





FPA Floodplain Administrator
HMA Hazard Mitigation Assistance
N/A Not applicable
NFIP National Flood Insurance Program
OEM Office of Emergency Management

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- *Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.*
- *Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.*
- *Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.*

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*



Table 9.7-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
2021-MiddleTwp-001	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High ▲
2021-MiddleTwp-002	Roadway Elevations	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-MiddleTwp-003	Widen Roadways to Support Evacuations	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-MiddleTwp-004	Flood Studies	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-MiddleTwp-005	Stormwater on South Dennis Road	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-MiddleTwp-006	Retrofit Municipal Buildings for Storms	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-MiddleTwp-007	Reeds Beach Bulkheads	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-MiddleTwp-008	Increase Firefighting Capabilities	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-MiddleTwp-009	Stormwater Improvements on Goshen Road	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-MiddleTwp-010	Join Firewise Program	1	1	1	1	1	1	1	1	1	1	0	0	1	1	12	High
2021-MiddleTwp-011	Join Community Rating System	1	1	1	1	1	1	1	1	1	1	0	0	1	1	12	High
2021-MiddleTwp-012	Shore/Roadway Protection on Ocean Drive	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-MiddleTwp-013	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.





Table 9.7-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise		X			X	X	X	X
Coastal Erosion		X			X	X		X
Disease Outbreak (new)		X			X			X
Drought (new)		X			X			X
Flood	X	X	X	X	X	X	X	X
Hurricane		X			X	X		X
Nor'Easter		X			X	X		X
Severe Weather		X			X	X		X
Severe Winter Weather		X			X			X
Tsunami		X			X			X
Wildfire		X	X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.7-1. Township of Middle Hazard Area Extent and Location Map 1

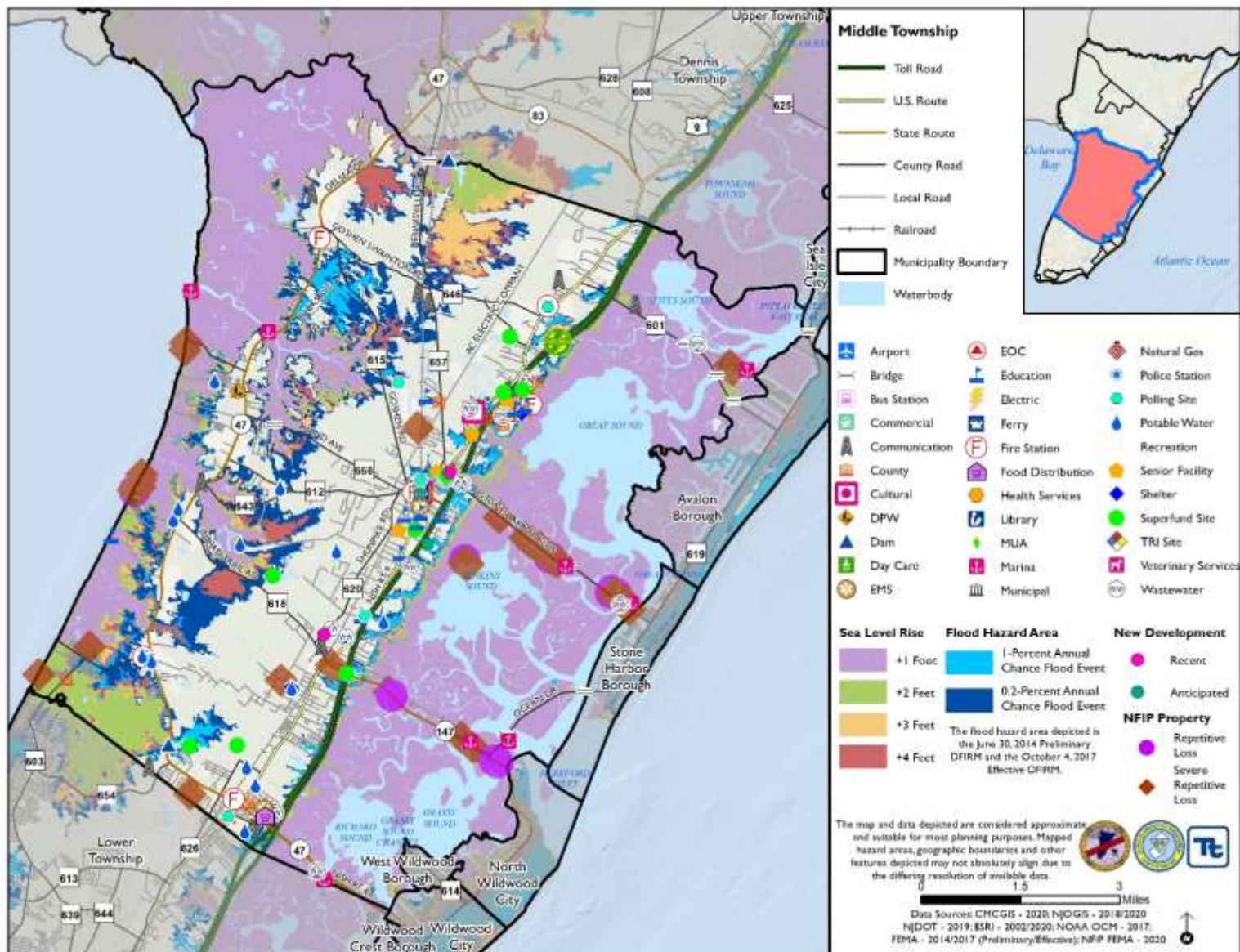




Figure 9.7-2. Township of Middle Hazard Area Extent and Location Map 2

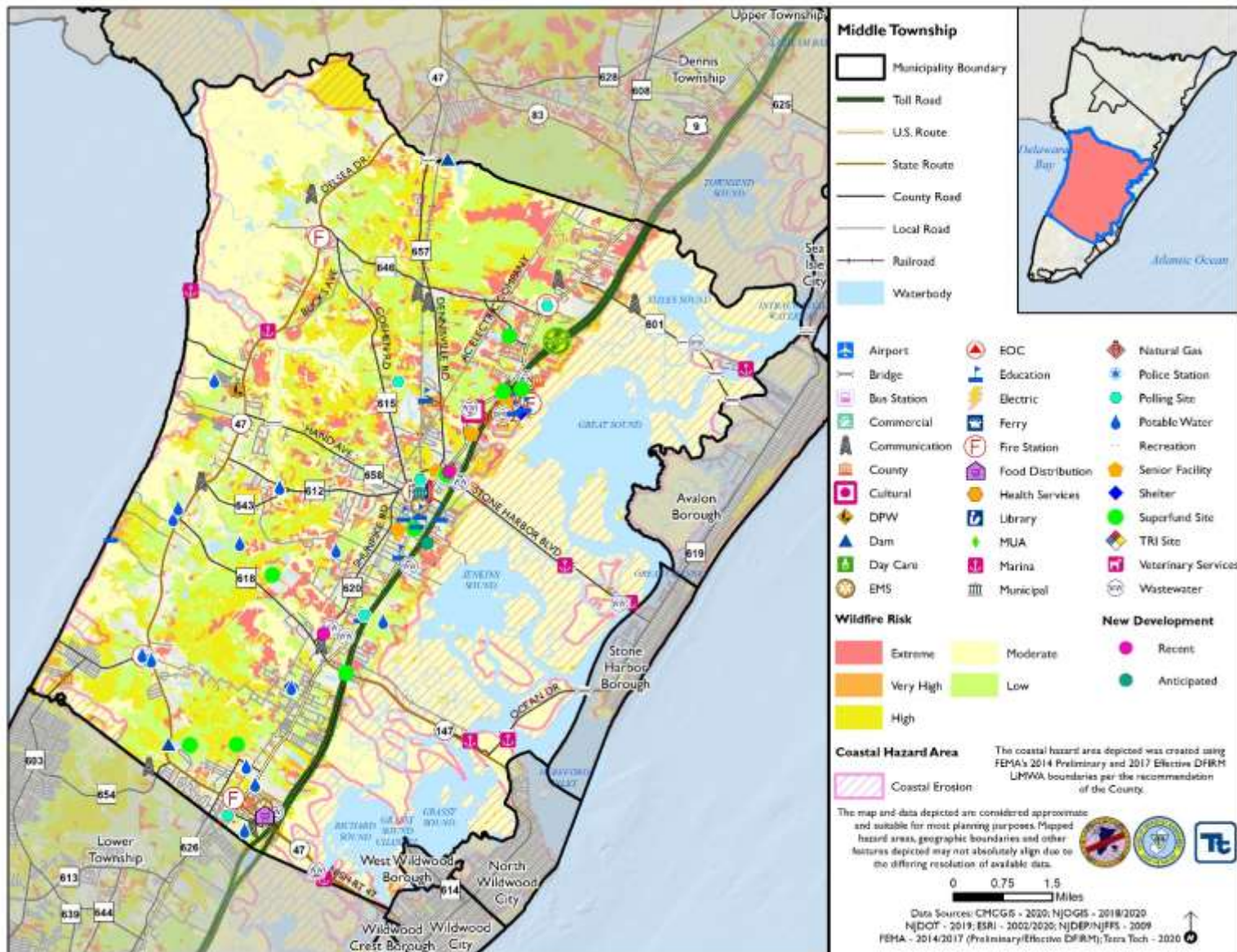
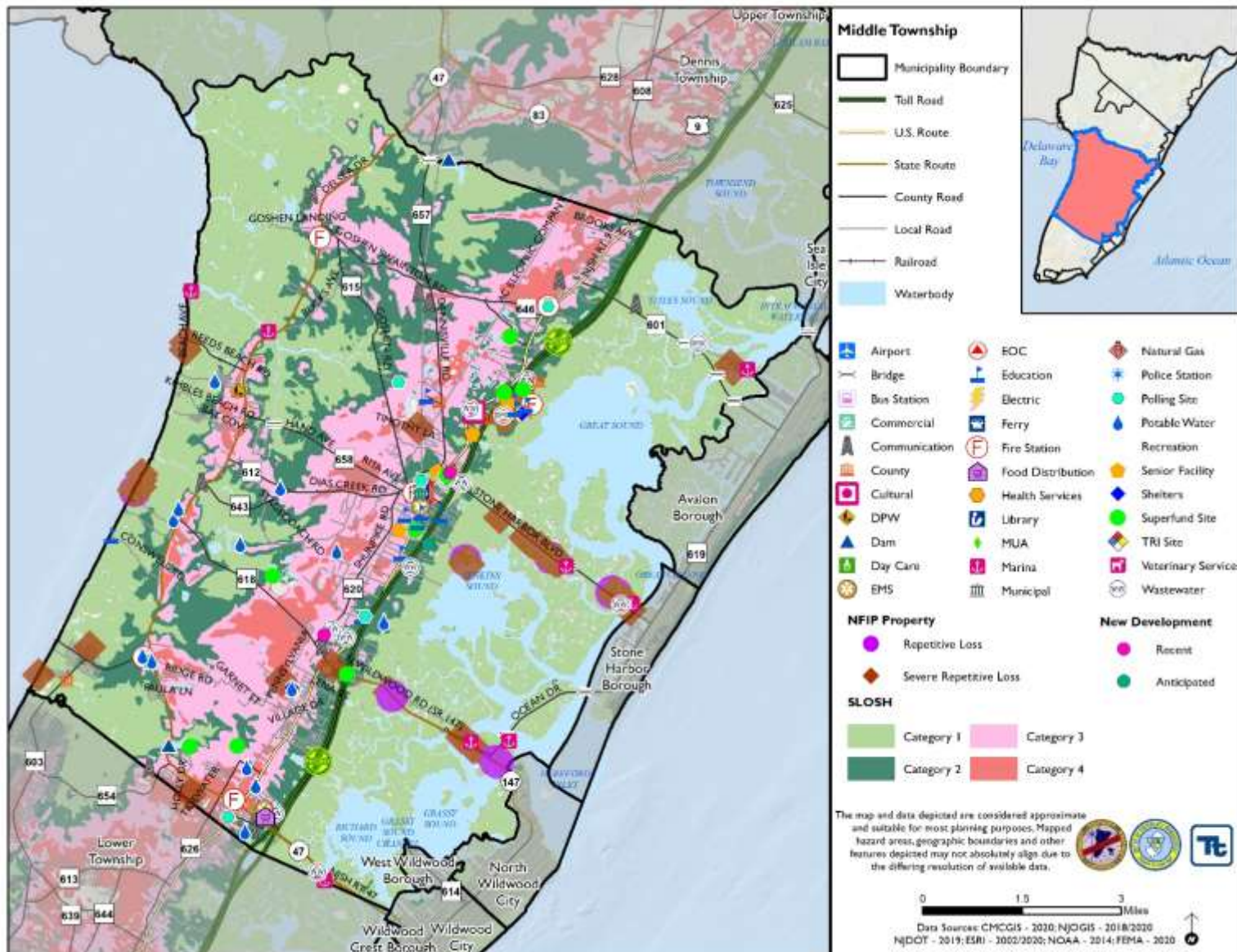




Figure 9.7-3. Township of Middle Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-MiddleTwp-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Township has 79 repetitive loss properties and 14 severe repetitive loss properties that require mitigation.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will conduct outreach to the RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$10M	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, BRIC, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-MiddleTwp-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Township.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	

Action Worksheet



Project Name:	Roadway Elevations		
Project Number:	2021-MiddleTwp-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather, Climate Change and Sea Level Rise		
Description of the Problem:	Coastal erosion is taking place at the end of Brown's Lane. The existing bulkhead is sinking. The roadway is low-lying and prone to flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	<p>The Township will elevate the following roadways. Roadway elevation designs will be determined via engineering studies and cost benefit analyses for each roadway. Projects involving County or State Roadways will involve the County or State leading or cooperating in order to proceed:</p> <ul style="list-style-type: none"> • Pierces Point Road • Springer's Mill Road • Beach Avenue on Reeds Beach • Avalon Boulevard from Parkway into Avalon proper (~2.5 miles), which will require elevating the Garden State Parkway bridge overpass (intersection of Avalon Blvd and Garden State Parkway) • Route 9 by High Tech in Edgewood • Route 47 roadway and ramps, which will require elevating the Garden State Parkway bridge overpass (intersection of State Route 47 and Garden State Parkway) • Route 147 roadway and ramps, which will require elevating the Garden State Parkway bridge overpass (intersection of State Route 147 and Garden State Parkway) • CR-603 (Bayshore Road) through Lower and Middle Townships through Fishing Creek Swamp 		
Is this project related to a Critical Facility?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Level of Protection:	Roadways raised	Estimated Benefits (losses avoided):	Prevent or reduce flooding on roadways
Useful Life:	15 years	Goals Met:	1, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	3 months per roadway	Potential Funding Sources:	HMGP, BRIC, Township budget, County budget
Responsible Organization:	Borough Engineer, County	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Retreat from flooded areas of roadways	High	Loss of emergency access, costly
	Close roadways when flooding is forecast	Low	Loss of access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Roadway Elevations	
Project Number:	2021-MiddleTwp-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect roadway from flood and erosion damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	0	The Township only has the legal authority to complete the roadway elevations it has jurisdiction over
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather, Climate Change and Sea Level Rise
Timeline	0	Within 5 years
Agency Champion	1	Borough Engineer, County
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	

Action Worksheet



Project Name:	Widen Roadways to Support Evacuations		
Project Number:	2021-MiddleTwp-003		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	Numerous roadways in Middle Township are not wide enough to accommodate heavy traffic that would be expected during evacuation.		
Action or Project Intended for Implementation			
Description of the Solution:	<p>The Township will widen the lanes of roadways to accommodate more traffic. The roadways targeted will include the following:</p> <ul style="list-style-type: none"> • Dennisville Road • Indian Trail Road (County Road) • Route 47 (part of a regional project with Dennis Township and Cumberland County) 		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Lanes widened	Estimated Benefits (losses avoided):	Increased evacuation capabilities
Useful Life:	15 years	Goals Met:	1, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	3 months per roadway	Potential Funding Sources:	HMGP, BRIC, PDM, County budget, Township budget
Responsible Organization:	Engineer, Cape May County, Dennis Township, Cumberland County	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Identify additional roadways for evacuation routes	N/A	Additional appropriate roadways do not exist
	Change evacuation plan to stage evacuations into two phases	Low	Increased evacuation times
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Widen Roadways to Support Evacuations	
Project Number:	2021-MiddleTwp-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect roadway from flood and erosion damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	0	The Township only has the legal authority to complete the projects that are on Township owned roadways
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Cape May County, Dennis Township, Cumberland County
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Retrofit Municipal Buildings for Storms		
Project Number:	2021-MiddleTwp-006		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane, Nor'easter, Severe Weather, Severe Winter Weather		
Description of the Problem:	Municipal buildings require protection from storm damages to ensure continuity of operations.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will purchase and install hurricane shutters on municipal buildings; with high priority to Town Hall.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	500-year storm event	Estimated Benefits (losses avoided):	Reduction in wind damages
Useful Life:	25 years	Goals Met:	1, 3, 4
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Town Budget
Responsible Organization:	Office of Emergency Management	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Rebuild facilities to new standards	High	Costly and not necessary
	Build secondary facilities protected to new standards	High	Costly and not necessary
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Retrofit Municipal Buildings for Storms	
Project Number:	2021-MiddleTwp-006	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of Township buildings.
Property Protection	1	Project will protect buildings from storm damage.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Hurricane, Nor'Easter, Severe Weather, Severe Winter Weather
Timeline	0	Within 5 years
Agency Champion	1	Office of Emergency Management
Other Community Objectives	1	Protection of critical services
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Reeds Beach Bulkheads		
Project Number:	2021-MiddleTwp-007		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Hurricane and Tropical Storm, Nor'Easter, Coastal Erosion, Climate Change and Sea Level Rise		
Description of the Problem:	Flooding is a recurring issue in the Reeds Beach area of the Township, impacting residential properties.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will install bulkheads on Reeds Beach to mitigate flooding in residential area which will mitigate flooding for approximately 30 homes.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by height of bulkheads	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	15 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, BRIC, Township budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Retreat from flooding areas	Very high	Loss of neighborhood
	Elevate properties	Very high	Access still limited during flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Reeds Beach Bulkheads	
Project Number:	2021-MiddleTwp-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect adjacent properties from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	0	The Township will require permitting to complete the project.
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	Project protect social asset
Administrative	1	
Multi-Hazard	1	Flood, Hurricane and Tropical Storm, Nor'Easter, Coastal Erosion, Climate Change and Sea Level Rise
Timeline	0	Within 5 years
Agency Champion	1	Engineer
Other Community Objectives	1	Project will protect community asset
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Increase Firefighting Capabilities		
Project Number:	2021-MiddleTwp-008		
Risk / Vulnerability			
Hazard(s) of Concern:	Drought, Wildfire		
Description of the Problem:	The Township has elevated wildfire risk. Water drawn stations are limited in certain areas.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will identify and install proper locations for and install water drawn stations (siphons) to increase fire-fighting capabilities.		
Is this project related to a Critical Facility?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Level of Protection:	To be determined	Estimated Benefits (losses avoided):	Increased emergency response capabilities
Useful Life:	20 years	Goals Met:	1, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Within 5 years	Potential Funding Sources:	HMGP, BRIC, Assistance to Firefighters Grant Program, Emergency Management Grant Program, Township budget
Responsible Organization:	Engineer, OEM, NJ DOT, New Jersey Turnpike Authority	Local Planning Mechanisms to be Used in Implementation if any:	Capital improvements planning, Emergency management planning, Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Purchase tanker truck for water	\$190,000	Transportation route lost, emergency service response times.
	Develop contract with neighboring towns for fire response	N/A	Too slow of response times, towns unable
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Increase Firefighting Capabilities	
Project Number:	2021-MiddleTwp-008	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Fire response preserved to protect life
Property Protection	1	Fire response preserved to protect property
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	Coordination with firemen
Multi-Hazard	1	Drought, Wildfire
Timeline	0	Within 5 years
Agency Champion	1	Engineer, OEM, NJ DOT, New Jersey Turnpike Authority
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



9.8 CITY OF NORTH WILDWOOD

This section presents the jurisdictional annex for the City of North Wildwood. The annex includes a general overview of the City of North Wildwood; an assessment of the City of North Wildwood's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.8.1 Staff and Local Stakeholder Involvement in Annex Development

The City of North Wildwood followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.8-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Ronald C. Simone III, City Administrator Address: 901 Atlantic Avenue, North Wildwood, New Jersey 08260 Phone Number: (609) 522-2030x1260 Email: rsimone@northwildwood.org		Name / Title: Robert Matteucci, OEM Dep. Director Address: 901 Atlantic Avenue, North Wildwood, New Jersey 08260 Phone Number: (609) 522-0191 Email: rmatteucci@northwildwoodnjoe.org
NFIP Floodplain Administrator		
Name / Title: Ralph Petrella, PE, City Engineer/Floodplain Manager Address: 901 Atlantic Avenue, North Wildwood, New Jersey 08260 Phone Number: (609) 465-2600x316 Email: rpellett@vannoteharvey.com		
Name	Title	Method of Participation
Ronald C. Simone III	City Administrator	Primary point of contact, provided data and information, contributed to the mitigation strategy, reviewed draft of annex and provided comment, reviewed and signed off on annex
Robert Matteucci	OEM Deputy Director	Alternate point of contact, took stakeholder survey, reviewed and signed off on annex
Ralph Petrella, PE	City Engineer/Floodplain Manager	NFIP floodplain administrator, reviewed and signed off on annex
Douglas Nordberg	Superintendent of Public Works	Took stakeholder survey, reviewed and signed off on annex
Michael Blizzard	Deputy Chief, North Wildwood Fire Department	Took stakeholder survey
Patrick Resenello	Mayor	Reviewed and signed off on annex
Todd Burkey	Chief Financial Officer	Reviewed and signed off on annex
Daniel Spiegel	Construction Official/Fire Official/Zoning Officer	Reviewed and signed off on annex
Matthew T. Gallagher	Chief of Police	Reviewed and signed off on annex
Dominick J. McClain	Fire Chief	Reviewed and signed off on annex



9.8.2 Jurisdiction Profile

First established as the Borough of Anglesea in June of 1885, North Wildwood is a City located on a barrier island of the Atlantic Coast in Cape May County, New Jersey, United States. The ‘Five Mile Island’ encompasses five (5) municipalities: North Wildwood, West Wildwood, Wildwood, Wildwood Crest, and Lower Township (Diamond Beach). North Wildwood has twenty-six (26) streets running North to South from 1st - 26th Avenues, and nine (9) streets running East to West from JFK to Maryland Avenue. North Wildwood also includes a section of land referred to as the ‘Anglesea’ section of North Wildwood that includes roads and permanent structures North of 1st Avenue, surrounded by natural marsh and a US Army Corps of Engineers (USACE) constructed Seawall.

The City of North Wildwood is a resort community economically driven by tourism with a full time population of greater than 4,000 full-time residents. That number increases in the summer months to over 75,000, with some holiday weekends being over 75,000.

The major thoroughfare through the City is New Jersey State Route 147 which connects to New Jersey Avenue, County Route 621. Route 147 has been completely reconstructed from the Garden State Parkway to New York Avenue. Route 147 is the only direct access to and from the City (City of North Wildwood, 2007).

According to the U.S. Census, the 2010 population for the City of North Wildwood was 4,041. The estimated 2019 population was 3,849, a 4.8 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 0.7 percent of the population is under the age of 5 and 39.4 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

The Federal Emergency Management Agency (FEMA) classifies North Wildwood, as well as its neighboring five (5) municipalities as a Special Flood Hazard Area (SFHA), otherwise known as the 100 Year Floodplain. All properties on the island are located within that floodplain and are subject to the higher floodplain management standards of each individual municipality, in addition to FEMA’s superseding federal standards. As for the City of North Wildwood, the low-lying lands west of New Jersey Avenue are most vulnerable to routine flooding resulting from tidal, lunar, and coastal storm flooding events with water coming from the Back Bay. Significant damages were incurred to public infrastructure and private properties caused by various nor’easters, coastal and tropical storms including but not limited to storms in 1984, 1987, Hurricane Gloria in 1985, October 1991, January 1992, February 1998, Hurricane Irene in 2011, Super-storm Sandy in 2012, and the most severe recorded storm since a tide gauge/weather station was installed in North Wildwood at 5th & New York Avenue, Winter Storm Jonas in January of 2016.

North Wildwood’s beach, dune system and coastal wetlands that make up approximately 30% of the City’s land area has been dramatically reduced in recent years as a result of erosion and dune/wetlands scarping caused by coastal storms, despite the City’s annual shore protection efforts that exceed \$11 million since 2016. This erosion/damage is combatted with ongoing delays by USACE and NJDEP to proceed with the Hereford Inlet to Cape May Inlet Shore Protection Project. The beach/dune system provides natural and beneficial functions that help reduce flood damage, and coastal wetlands help spread floodwater over a large area, but until Federal and State superseding governing bodies proceed with anticipated shore protection efforts that have already been authorized through House/Senate appropriations, these natural lands will continue to deteriorate/depreciate at an accelerated rate. Natural wetlands and bodies of water – Atlantic Ocean, Hereford Inlet, and the Back-bay, surround the City of North Wildwood.

The vast majority of permanent development on the island was constructed before the establishment of the National Flood Insurance Program (NFIP) and, therefore, does not meet the requirements of local and FEMA



regulatory standards. Of the +500 properties identified as repetitive loss (RL) and severe repetitive loss (SRL), six properties were identified as being post-FIRM. The City continues to apply to FEMA via the FMA grant program for the elevation or acquisition properties to mitigate the flood hazard(s). These elevations and acquisitions come with deed restrictions – for elevations (must carry flood insurance for the life of the property, regardless of change in ownership) or acquisitions (no permanent structure can be built on the land again after demolition, property will be dedicated open space).

9.8.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.8-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.8-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.8-2. Recent and Expected Future Development

Type of Development	2015	2016	2017	2018	2019
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single and Two-Family Units	40	31	54	34	49
Multi-Family	2	3	6	6	2
Other (commercial, mixed-use, etc.)	2	0	1	1	0
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Recent Major Development and Infrastructure from 2015 to Present					
None identified					
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
None anticipated					

* Only location-specific hazard zones or vulnerabilities identified.

All new properties constructed were within the SFHA and consequently were subject to strict floodplain management standards pursuant to the City's Floodplain Management Ordinance.

9.8.4 Capability Assessment

The City of North Wildwood performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.



For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.8.4). The City of North Wildwood identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.8-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Construction Codes, Uniform, Chapter 200, adopted by City Council 11-17-2009, amended through 2013. There hereby is established in the City of North Wildwood an "enforcing agency," as that term is defined in the State Uniform Construction Code Act, N.J.S.A. 52:27D-119 et seq., to be known as the "North Wildwood Construction Office," consisting of a Construction Official, a Building Subcode Official, a Fire Protection Subcode Official, a Plumbing Subcode Official, an Electrical Subcode Official.The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code.Floodplain Management Ordinance of the City of North Wildwood was adopted in 2017, which includes higher regulatory standards for building including BFE + 2' freeboard and the adoption of the 2017 FIRM.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Land Development, Chapter 276, adopted by the City Council 05-19-1994 and amended though 2019. A comprehensive ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population in order to promote and protect the public health, safety, morals and general welfare.This Chapter contains comprehensive regulations for coastal flood hazard protection and recognizes that; The City of North Wildwood occupies part of a low-lying barrier island which is exposed constantly to the threat of coastal flooding due to hurricanes, northeasters, and storms; The entire City of North Wildwood has been designated by the Federal Emergency Management Agency as being exposed to a 1% or greater chance of being flooded in any given year. The oceanfront and lands along Hereford Inlet have been designated as being exposed to high velocity waves; The beaches and dunes of North Wildwood are located entirely within these coastal flood hazard areas and, if properly maintained and protected, provide some natural protection from the floodings that result from storm waves; and The predictable hazards of coastal flooding subject the residents, owners of businesses, and visitors of the City of North Wildwood to potential loss of life, personal injury, and property damage, as well as disruption of commerce, resort activities, and governmental services, all of which adversely affect the public health, safety and welfare.The City also has overlay mapping on the Zoning Map, which prohibits development in Zoning Districts based on conservation elements – Ocean Conservation, Inlet Conservation, Bay Conservation, and ROSE (Recreation, Open Space & Education)					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated? Board	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
<ul style="list-style-type: none"> P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Land Development, Chapter 276, adopted by the City Council 05-19-1994 and amended though 2019. A comprehensive ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population in order to promote and protect the public health, safety, morals and general welfare. Subdivision proposals - All subdivision proposals shall be consistent with the need to minimize flood damage; shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage; shall have adequate drainage provided to reduce exposure to flood damage; and the base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least 50 lots or five acres (whichever is less). 					
Stormwater Management	Yes	State/Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Stormwater Control, Chapter 379, adopted by City Council on 04-05-2005. It is the purpose of this Chapter that flood control, groundwater recharge and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural best management practices (BMPs). Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. This chapter shall be applicable to all site plans and subdivisions for the major developments that require preliminary or final site plan or subdivision review: Stormwater management measures shall be designed to take into action the existing site conditions, including, for example, environmentally critical areas; wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage area and drainage patterns. The City is foregoing a City-wide bulkhead survey to determine bulkhead elevations and bayside elevations to prevent flooding in our most floodprone areas 					
Post-Disaster Recovery	Yes	State/Federal	Yes	No	-
Comment: The City documents all critical facilities and assets prior to and immediately following disasters for the purposes of documenting damages in the chance that the corresponding threshold of damage has been reached and there is a subsequent Federal Disaster Declaration. Dependent on the damage and severity of disaster, the municipality is eligible to receive 75% reimbursement of damages and also funds potentially utilized toward mitigation efforts from FEMA.					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	No	-
Comment: N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment:					
<ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. The City has an active Community Forestry and Public Lands Vegetation Management Plan that allows for growth management within environmentally 					



Section 9.8 - City of North Wildwood

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
sensitive zone such as the natural dunes.					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.Land Development, Chapter 276, adopted by the City Council 05-19-1994 and amended though 2019. A comprehensive ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population in order to promote and protect the public health, safety, morals and general welfare.					
Environmental Protection	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Environmental Commission, Chapter 29, adopted by City Council 11-15-1994.The Environmental Commission shall have the power to conduct research into the use and possible use of the open land areas in the city and may coordinate the activities of unofficial bodies organized for similar purposes, and may advertise, prepare, print and distribute; to study and made recommendations concerning open space preservation, water resources management, air pollution control, solid waste management, noise control, soil and landscape protection, environmental appearance, marine resources, and protection of flora and fauna; subject to the approval of the governing body; acquire real and personal property, or any interest therein, but in the name of the municipality. Such acquisition may be by gift, purchase, grant, bequest, devise, or lease, and the Commission shall administer the same for the Commission's purposes, subject to the terms of the conveyance or gift.Environmental map overlays also reflected on City's Zoning Map, preventing development in environmentally sensitive areas.					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.Flood Damage Prevention, Chapter 252, adopted by the City Council 08-01-2017. This Chapter shall apply to all areas of special flood hazards within the jurisdiction of the City of North Wildwood, Cape May County, New Jersey.The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the area of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.New construction and substantial improvement of any residential structure located in an A or AE Zone shall have the lowest floor, including the basement together with the attendant utilities (including all electrical, heating, ventilating, air-conditioning and other service equipment) and sanitary facilities, elevated at or above the base flood elevation plus two feet or as required by ASCE/SEI 24-14, Table 2-1, whichever is more restrictive.					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	No	-	No	-	-
Comment:					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Climate Change	No	-	No	-	-
Comment: <ul style="list-style-type: none"> Reflected in the City's comprehensive master plan with direct mention to climate change. 					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Bulkhead Enforcement Standards	Yes	State & Local	No	Yes	2021-North Wildwood-009
Comment: <ul style="list-style-type: none"> Bulkheads, Chapter 178, adopted by City Council, 03-0-2008, amended through 2017. It is the purpose and intent of this Chapter to establish uniform regulations for the construction, reconstruction, renovation or repair of existing or new bulkheads within the City of North Wildwood. The top elevation of any bulkhead to be constructed or reconstructed shall be set at a minimum elevation of 8.0 msl Datum 1929. 					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. 2010 Comprehensive Master Plan Update, adopted by the Planning Board and dated August 12, 2010. Policy: Revise the City's Land Use Plan and Land Development Ordinance in order to regulate development patterns based on the following: <ul style="list-style-type: none"> Reinforce the integrity of the City's existing residential neighborhoods; Encourage commercial development, including Vertical Redevelopment designed to increase the City's resort hotel room base and demarcated areas for specialized entertainment- and attractions-type uses Eliminate potential conflicts created by incompatible uses permitted in the various zoning districts; Discourage inappropriate and incompatible land uses by creating a clearer differentiation among and between the City's various residential and commercial zoning districts; Revise the City's Land Use Plan to better reflect current development patterns; Respect and protect the City's physical (natural) environment; and Make appropriate use of the City's natural resources, including, where appropriate, encouraging the expansion of the City's water-dependent and water-oriented land uses along the bayside waterways. The Plan has a significant section on the impacts of climate change, floodplains and vulnerability to coastal storms as well as mitigation recommendations. 					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> City of North Wildwood, Capital Plan 2019 – 2022. Ongoing and Forthcoming Projects: 2019 – 2020. This is not a descriptive plan, but rather a line item budget that includes more than one year. <ul style="list-style-type: none"> Sand-Back-Pass – Beach replenishment project, prior to 2019 Summer Season, will include in-house and contractor projects Army Corps and NJDEP Shore Protection Project – Anticipated for 2022, includes major replenishment and dune reconstruction Seawall Repair – several sections in Anglesea must be repaired due to damages Seawall Extension – From 4th – 7th Avenues, the Seawall will be extended with funding provided by NJDEP 					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> ○ Pump Station Project – Entertainment District, will protect evacuation route from flooding, will also include beautification improvements to Olde New Jersey Avenue ○ Beach Patrol Building – Will include a new Beach Patrol Building at 15th Avenue ○ Bulkhead Survey and Living Shoreline ○ Back-bay pump-station ○ Lou Booth Amphitheater and Park Renovations – Anticipated for Fall 2021 					
Disaster Debris Management Plan	No	-	No	-	2021-North Wildwood-018
<i>Comment:</i>					
Floodplain or Watershed Plan	Yes	Local	No	Yes	Yes
<i>Comment:</i> <ul style="list-style-type: none"> • Floodplain Management Plan- 2017-2018 Annual Progress Report, original Floodplain Management Plan, 1999 • The City has determined the Plan should be reviewed and implement additional strategies to reduce flood losses and to gain additional points under the CRS Program. The report includes the status of actions identified in the 2015 HMP. 					
Stormwater Management Plan	Yes	State & Local	Yes	No	No
<i>Comment:</i> <ul style="list-style-type: none"> • The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. • The Stormwater Management Plan specifies projects/actions/initiatives/ to reduce the volume of stormwater and otherwise mitigate stormwater flooding. 					
Stormwater Pollution Prevention Plan	No	State & Local	Yes	No	No
<i>Comment:</i> <ul style="list-style-type: none"> • The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. 					
Urban Water Management Plan	No	-	No	-	-
<i>Comment:</i>					
Habitat Conservation Plan	Yes	Local	No	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> • Public Lands Vegetation Management Plan, dated March, 2016. • Plan Statement - Public lands, including wetlands, parks, beaches and dunes, within the City of North Wildwood are vitally important assets of the community. These vegetated features serve as protective buffers, productive habitats, valuable resources, aesthetically appealing vistas and recreational opportunities. The coastal wetlands expanses along the back bay portions of the City provide a myriad of natural and public benefits ranging from storm energy dampening to water quality improvements to habitats for a diversity of wildlife. The beach and dune complex provides for coastal storm protection, sand bank reserves for resource replenishment, critical wildlife habitat and recreation. • Goals of the Plan are to establish science-based practices to evaluate and manage public lands vegetation in a manner to achieve the goals of the City; maintain healthy, diverse natural areas, streetscapes and parklands comprised primarily of native and acceptable 					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
cultivated species; and establish and maintain appropriate vegetation that protects the integrity of the dune complex, allows safe public access to the beach and other public areas, enhances wildlife and promotes air circulation and appropriate view sheds.					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	State & Local	Yes – if located in a coastal zone	Yes	-
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.There is not a Shoreline Plan but there is a Coastal Beach Zone Ordinance, Chapter 196, adopted by City Council in 1972 and subsequently amended. It is the intent of the City of North Wildwood in the creation of beach preservation and tidal floodplain zones to preserve the beach for public recreational purposes and also to prevent and eliminate conditions which, in the event of flood and storm, threaten the public health, safety and welfare and which lead to damage to or loss of property.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Community Forestry Management Plan, 2016 – 2020, submitted to the State on May 2, 2016. The Community Forestry Management Plan (CFMP or Plan) for the City of North Wildwood was prepared to establish programs that recognize the unique nature of its tree resources and to plan future programs that will continue to protect and enhance these resources. The City established goals and objectives compatible with its forestry planning process vision to provide forest and tree streetscapes for the benefit of its residents and visitors in addition to the wildlife that rely on tree resources.Prolonged exposure of flooding during coastal storms and frequent salt spray common to barrier island communities create stressors on the community forest resources. Further, the damaging winds associated with these storms present unique sets of management protocols. In response the Plan recommends the development of a natural tree destruction response plan addressing tree damage.Enhancement of streetscapes and planting of appropriate trees and shrubs in public open spaces, as well as on private property, will be accomplished through a number of programs and outreach efforts.					
Transportation Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">2010 Comprehensive Master Plan Update, adopted by the Planning Board and dated August 12, 2010. In addition, there is a Vehicles and Traffic Ordinance, Chapter 418.					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Getting to Resilience – Recommendations Report, dated December 2015. The “Getting to Resilience - Recommendations Report” provides a series of suggested actions to help strengthen flood resiliency in the City of North Wildwood, New Jersey. The report includes an overview of the Getting to Resilience (GTR) tool, describes North Wildwood’s GTR process, and offers recommendations that will help the City advance its flood resiliency goals and objectives.The GTR Plan recommendations, such as but not limited to, “Cross-reference flood risks and vulnerabilities in relevant sections of the municipal master plan, emergency operations plan and all hazards mitigation plan” could be considered as actions in the HMP.					
Tourism Plan	Yes	Local	No	No	-
Comment: <ul style="list-style-type: none">There is a Tourists’ Development Commission created by Ordinance, Chapter 95. The purpose of this Commission is to promote tourism on behalf of the City of North Wildwood, through assisting the city with appropriate advertising and promotional literature.					
Business Development Plan	No	-	No	-	-
Comment:					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Other	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> New Jersey Coastal Coalition Multi-Jurisdictional Program for Public Information, Adopted by City Council on February 6, 2018 and dated October, 2017. The Goals of the PPI are to ensure that those affected by flooding are aware of risks; coordinate municipal efforts to increase flood awareness; inform residents of tools that their local government offers to prevent injury and property damage from flooding; and engage in floodplain management activities that protect and bolster economic activity. 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	State, County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. City of North Wildwood, EOP Base Plan, dated February, 2017. The City of North Wildwood has prepared this Emergency Operations Plan, which sets forth the general policies and procedures to be carried out by county and allied entities using NIMS and the principles of ICS, in order to provide the citizens of City of North Wildwood with an effective integrated emergency response plan designed to minimize the loss of life and property during an emergency, starting by Identifying major, natural and man-made hazards that threaten life, property, and the environment, and providing an efficient, comprehensive organizational structure for emergency response. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> City of North Wildwood Coastal Vulnerability Assessment Matrix. The Matrix identifies over 30 Community Assets and include the level of exposure, sensitivity and consequences of a Severe Weather event. 					
Post-Disaster Recovery Plan	Yes	Local	No	Yes	-
Comment: The City's Post-Disaster Recovery Plan refers to the Hazard Mitigation Plan and includes specific mitigation projects and activities.					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.8-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes – Construction Office
Does your jurisdiction have the ability to track permits by hazard area?	Yes – within Zoning District
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of build-out in the jurisdiction.	Yes – in the Construction software and public records database/tax map

ADMINISTRATIVE AND TECHNICAL CAPABILITY





The table below summarizes potential staff and personnel resources available to the City of North Wildwood.

Table 9.8-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	Yes	Program for Public Information Committee
Environmental Board / Commission	Yes	Environmental Commission and Green Team
Open Space Board / Committee	Yes	Cape May County Open Space Board
Economic Development Commission / Committee	Yes	Economic Development Commission/North Wildwood
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Code Red Notification System, Emergency Siren System – Responsible Party is NWOEM
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	Several shared service agreements between Wildwood, Wildwood Crest, North Wildwood, as well as with the CMCOEM and MUA
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Engineering Services for: Capital improvements, special engineer for beach replenishment /beach survey projects and additional engineering services provided for everyone else.
Engineers or professionals trained in building or infrastructure construction practices	Yes	Vannote Harvey and Associates – City Engineer Services
Planners or engineers with an understanding of natural hazards	Yes	Vannote Harvey and Associates – City Engineer Services
Staff with training in benefit/cost analysis	Yes	Ralph Petrella, City Engineer
Staff with training in green infrastructure	Yes	Peter Lomax, Environmental Consultant
Staff with education/knowledge/training in low impact development	Yes	Vannote Harvey and Associates –City Engineer Services
Surveyor	Yes	Vannote Harvey and Associates –City Engineer Services
Stormwater engineer	Yes	Vannote Harvey and Associates – City Engineer Services
Personnel skilled or trained in GIS applications	Yes	In the County and our Tax Assessor, Jason Hesley; as well as Vannote Harvey and Associates –City Engineer Services
Local or state water quality professional	Yes	State Planning Department
Scientist familiar with natural hazards in local area	No	However, the City does have engineering services that specialize in natural hazards and Dr. Stewart Farrell also assists the City
Emergency manager	Yes	Robert Matteucci, Director of OEM
Watershed planner	Yes	Megan Wren, Rick Brown, and State Planning Department
Environmental specialist	Yes	Peter Lomax, City Environmental Consultant
Grant writers	Yes	TRIAD Associates – Grant Coordinator
Resilience Officer	Yes	Jack Heide, FEMA
Other – Professional Consultants	Yes	Dan Ginolfi and Howard Marlowe, Warwick Group Consulting

FISCAL CAPABILITY

The table below summarizes financial resources available to the City of North Wildwood.





Table 9.8-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	The City has an open space fund that may be used to fiscally support hazard mitigation projects.

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the City of North Wildwood.

Table 9.8-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Ronald Simone, City Administrator
Do you have personnel skilled or trained in website development?	No – Outsource by private contractor for website design (Joyce Media)
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes – ready.northwildwood.com, as well as the flood info page: https://northwildwood.com/flood-info/
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes, on City department pages, including the page managed by Office of Emergency Management
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Program for Public Information Committee, Municipal Green Team
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Sustainable Jersey, municipality's participation in the New Jersey Coastal Coalition

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the City of North Wildwood.

Table 9.8-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	6	May 1, 2017
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3 for Residential and 2 for Commercial	2018
Public Protection (Fire ISO Protection Class)	Yes	3	2/1/15
Storm Ready Certification	No	-	-
Firewise Community Classification	Yes	N/A	N/A
Sustainable Jersey	Yes	Bronze	December 12, 2017

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.8-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Climate Change and Sea Level Rise	Strong
Coastal Erosion	Strong
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Strong
Hurricane	Strong
Nor’Easter	Strong
Severe Weather	Strong
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.

The City of North Wildwood participated in a Getting to Resiliency exercise to analyze and assess potential risks associated with climate change/sea-level rise. Climate change and sea-level rise is documented and considered within the City’s Comprehensive Master Plan. Climate change is already being integrated into current policies/plans or actions (projects/monitoring) within the Comprehensive Master Plan and Floodplain Management Ordinance.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.8-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	City Engineer
Who is your floodplain administrator? (name, department/position)	Ralph Petrella
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Sal DeSimone
What is the date that your flood damage prevention ordinance was last amended?	October 2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceed, the City participates in the Community Rating System
When was the most recent Community Assistance Visit or Community Assistance Contact?	2016
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes. No new construction or substantial improvement properties are subject to any recorded major tidal flooding.



Criterion	Response
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?	The floodplain administrator is adequately trained for floodplain management responsibilities, although additional training would be welcome.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes, Class 6
How many flood insurance policies are in force in your jurisdiction?*	2,483 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	3,345 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$40,614,548 in payments
Do you maintain a list of properties that have been damaged by flooding?	Substantially damaged/RL/SRL Properties – Yes.
Do you maintain a list of property owners interested in flood mitigation?	Yes – any floodplain inquiries, especially those inquiring about FMA.

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Storm-water Management:** The City is an MS4 Regulated Community and has a Storm-water Management Plan. This plan specifies projects/actions/initiatives/ to reduce the volume of storm-water and otherwise mitigate storm-water flooding. The storm-water manager, Department of Public Works, and City Engineer perform Storm-water management in the City. The Mayor and Administrator oversee the performance and relevant materials are submitted for CRS program coordination.
- **Land Use Planning:** The City has a municipal planner on staff who promotes retrofitting, NFIP Flood Damage Prevention Ordinance Compliance and other duties related to municipal planning. The Zoning and Planning Boards were both instrumental in the completion of the Master Plan, which addresses natural hazard risk.
- **Administration:** The City's PPI Committee members, Mayor, Administrator, Police Chief, Public Works Superintendent, and Deputy OEM Director all have functions related to managing natural hazard risk.
- **Technical Capabilities:** City engineering staff has experience with BCA (Benefit Cost Analysis) when determining what capital projects to consider and pursue to mitigate flooding. The City Construction Official can perform substantial damage estimates, in addition to the City Engineer. OEM staff and contract support (Triad Associates) have experience in preparing grant applications for mitigation projects and continue to do so successfully and efficiently.
- **Training and Education:** City staff receives training and continued professional education that supports natural hazard risk reduction. Staff could benefit from additional training on public information distribution.
- **Sustainable Jersey:** The City is a bronze certified community in the Sustainable Jersey program. The City has earned points toward certification through creating a green team, climate adaptation, emergency communications planning, building healthier communities, smoke and tobacco free public places, natural resource inventory, the City's Environmental Commission, open space planning, online municipal public service systems, prescription drug safety and disposal, community paper shredding day, and the recycling depot.
- **Climate Adaptation, Flooding Risk:** Members of the Program for Public Information Committee of the City of North Wildwood completed the Getting to Resiliency Study with members of Sustainable Jersey, NJDEP and TCNJ in the Mayor's Office of the City of North Wildwood.



- **Shade Tree:** The City is also a 3-year Tree City USA community and City representatives also attend the Shade Tree Federation Conference on an annual basis.
- **Green Team and Environmental Commission:** The City has an active Green Team and Environmental Commission that work in sync with one another, as likeminded committees to promote environmental projects City-wide.
- **Beaches, Dunes, and Wetlands:** The Construction Office and Emergency Management continue to support the prohibition of development within the beach/dune and coastal wetland open space preservation areas. Planning, Construction Office, and Emergency Management encourage the development of dunes along the City's beachfront to protect against erosion and storm surge inundation. The City and Stockton College Coastal Research Center continue to monitor and survey the beaches. This provides critical information providing the basis for decisions regarding beach re-nourishment and long-term analysis of littoral processes. The Municipality (engineering) work with NJDOT on any/all future back-bay dredging projects.
- **Elevations:** The City Building Inspector continue to maintain FEMA elevation certificates for all permits for new buildings or improvements to buildings. Emergency Management and Engineering continue to update website with grant opportunities for property elevation. The Municipality (engineering management and engineering) continue to search for more grants for portable dewatering systems.
- **Lightning Protection:** The municipality (engineering) with emergency management and NOAA continue to support the construction and installation of more lightning protection.
- **Floodplain Management and the CRS:** The Municipality PPI Committee continue to implement the initiatives identified in the MJPPI. FEMA, NJDEP, and Municipality North Wildwood seek ways to mitigate flood risk to critical facilities located in special flood hazard areas. The Municipality PPI Committee and ISO include a presentation on retrofitting in the MJPPI initiatives. ISO, FEMA, and Municipality- North Wildwood continue to disseminate flood insurance information courtesy of NFIP and FEMA distribution center. The Construction Office and Emergency Management continue to enforce the City's Floodplain Ordinance that improvements to a building area on cumulative basis. Once the value of all improvements over time reaches 50% of the original building value, the entire building must be raised to the current BFE.
- **Blue Acres:** NJDEP and Municipality- North Wildwood continue to participate in the Blue Acres Funding program where permissible, as well as FMA for FMA acquisitions.
- **Storm Records:** North Wildwood, OEM, State of New Jersey Police/ OEM continue to document all damages from coastal storms/disasters with the potential for disaster declaration.
- **Impervious Coverage:** North Wildwood and the Parks and Grounds Department continue to enforce Community Forestry and Public Lands Vegetation Management Plans to continue to meet impervious coverage standards. The Planning Board maintain existing zoning regulations to prevent an increase in development densities.

9.8.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The City of North Wildwood's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.8-11 provides details regarding municipal-specific loss and damages the City experienced during hazard events. Information provided in the table below is based on reference material or local sources.



Table 9.8-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January, 2016	Winter Storm Jonas – DR4264	Yes	Major Tidal Flooding/Erosion	Severe erosion, significant tidal flooding, damage to facilities and equipment.
January 20, 2020 and continuing	EM-3451, DR- 4488: COVID- 19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The City was subject to masking and social distancing restrictions and business /school closures due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

9.8.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the City of North Wildwood risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the City of North Wildwood.

- Number of repetitive loss (RL) properties: 453
- Number of severe repetitive loss (SRL) properties: 95
- Number of RL/SRL properties that have been mitigated: 12 according to FEMA, 27 since 2016 according to the City.

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.8-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Notes
		1% Event	0.2% Event	
Oak Ave Pump Station	MUA	X	X	No update. New Pump installed in 2019.
No Name	Communications Facility	X	X	
No Name	Communications Facility	X	X	
No Name	Communications Facility	X	X	
No Name	Communications Facility	X	X	
North Wildwood Recreation Center	Recreation	X	X	Although below BFE, all utilities are above BFE, structure is entirely built of brick, built to withstand the elements in the most major of storms, with a recently updated reserve power system (generator).
North Wildwood Senior and	Health Services	X	X	Within the Recreation



Name	Type	Exposure		Notes
		1% Event	0.2% Event	
Nutrition Center				Center. Not a lifeline.
NORTH WILDWOOD FIRE DEPARTMENT	Fire Stations	X	X	Lifeline. Discussions of building a shared public safety building, which would serve as an elevated structure, outside of floodplain area. Temporary maintenance of Fire Department building to mitigate potential future flooding hazards.
MARGARET MACE ELEMENTARY	Education	X	X	Within one of the highest elevation areas in the City, no update on mitigation. Does not operate as a lifeline, but could potentially utilize floodgates or elevate the structure if flooding is catastrophic.
WILDWOOD CATHOLIC HIGH SCHOOL	Education	X	X	Does not operate as a lifeline, but could potentially utilize floodgates or elevate the structure if flooding is catastrophic.
North Wildwood EOC	EOC	X	X	Does not operate as a lifeline. Emergency Radio System will continue to broadcast remotely in the worst of storms. Discussions of building a shared public safety building, which would serve as an elevated structure, outside of floodplain area. No updates at this time.
Hoffman Canal Pump Station	Wastewater Treatment Facilities	X	X	
Oak Ave Pump Station	Wastewater Treatment Facilities	X	X	
North Wild Wood Police Department	Police Stations	X	X	Within one of the highest elevation areas in the City, within the SFHA. No history of flooding; however, prior discussions of a new consolidated public safety building with elevated features.
NORTH WILDWOOD COMMUNITY BUILDING	Polling Places	X	X	
NORTH WILDWOOD EMS	EMS	X	X	Within the Fire Department. Discussions of building a shared public safety building, which would serve as an elevated structure, outside of floodplain area. Temporary



Name	Type	Exposure		Notes
		1% Event	0.2% Event	
				maintenance of Fire Department building to mitigate potential future flooding hazards.
North Wildwood Municipal Hall	Municipal Facilities	X	X	Within one of the highest elevations within the SFHA, structure has no history of flooding and is built to withstand the worst of storm. Has a high volume diesel generator as backup power and structure stands above BFE.
NJ MARINE POLICE - North Wildwood Station	Police Stations	X	X	Although below BFE, the building is surrounded by a USACE seawall built to withstand the 500-year storm. Building is owned by the State of New Jersey.
Anglesea Volunteer Fire Co. #1	Fire Stations	X	X	Lifeline that also operates as an emergency evacuation center.
Flood Warning Siren #1	Communications Facility	X	X	Above BFE, siren can be activated remotely.
Flood Warning Siren #2	Communications Facility	X	X	Above BFE, siren can be activated remotely.
Hereford Inlet Lighthouse	County Facilities	X	X	State owned Lighthouse, not a lifeline to the City of North Wildwood, although stands as a lifeline/aids to navigation for all boaters.
Hoffman Canal Pump Station	MUA	X	X	No update. New Pump installed in 2019.
Marina Bay Towers	Senior Facility	X	X	Living spaces stand well above BFE, within a floodprone area. Renovations ongoing. Privately owned.
North Wildwood Beach Patrol HQ	County Facilities	X	X	Lifeline within the SFHA, within a VE Zone.
North Wildwood Boat Ramp & Weather Station/Tide Gauge	Marinas	X	X	Within a floodprone area, weather station and tide gauge work remotely
North Wildwood Public Works Facility & Recycling Center	DPW	X	X	Although below BFE, the building is surrounded by a USACE seawall built to withstand the 500-year storm. No history of flooding at this location.
North Wildwood Volunteer Fire Co. #1	Fire Stations	X	X	
Wawa Gas Station (Only Gas Station in NW)	Natural Gas Facility	X	X	Lifeline above BFE, the only gas station in the municipality
Acme Food-store	Grocery/Food Processing	X	X	Below BFE, serving as a lifeline. Privately owned and mitigation activities unknown. The City of



Name	Type	Exposure		Notes
		1% Event	0.2% Event	
				North Wildwood is exploring an elevated living shoreline to alleviate flooding at this location, as well as potentially installing a flood pump connected into the storm drainage system.
CVS Pharmacy	Health Services	X	X	Below BFE, serving as a lifeline. Privately owned and mitigation activities unknown. The City of North Wildwood is exploring an elevated living shoreline to alleviate flooding at this location, as well as potentially installing a flood pump connected into the storm drainage system.

Source: FEMA DFIRM 2014/2017; Cape May County 2020, City Administrator

Note: All Critical Facilities were listed, documented and revised from the HMP 2016

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The City has 453 remaining unmitigated repetitive loss properties and 95 severe repetitive loss properties. All pre-FIRM properties West of New Jersey Avenue. The City has been adamantly applying for RL/SRL properties through the FMA grant program and has been quite successful in doing so. HMGP and REM were two pre-existing grants that helped to elevate some RL/SRL properties. In the City's CRS submission, 6 RL properties were listed as substantial improvements. In total, there have been over 14 substantial improvements for RL/SRL properties within the past two years.
- Oceanfront erosion has caused damage to the beach, dune, and wetlands areas. Continued erosion could threaten homes and infrastructure behind the dune line.
- Flooding is a repetitive issue in the New Jersey Avenue area.
- Erosion to beach, dune and wetlands areas. The City has spent over \$16 million for shore protection efforts since 2016.
- Nuisance tidal flooding produced by the back-bay is a recurring problem. Restoration of natural wetlands and shoreline is also needed.
- Nuisance tidal flooding produced by the back-bay is slow to drain on outgoing tides.
- Nuisance tidal flooding produced by the back-bay can occasionally catch residents and visitors off guard, resulting in car damages.
- The City has numerous facilities spread throughout the City and exposed to various levels of flooding such as the North Wildwood Career Fire Department HQ, Anglesea Volunteer Fire Company, 15th Street Volunteer Fire Company, and the North Wildwood Recreation Center.
- Coastal flooding takes place along the bayside. Bulkheads are in place on private and public property though the elevations and standards of bulkheads are not consistent. Failure of bulkheads would increase flood and coastal erosion risk.
- New Jersey Avenue/NJ-147 currently stands as the only evacuation route in and outside of the City of North Wildwood.



- Flooding is a repetitive issue in the Moores Inlet area.
- The City Boat Ramp is located along the bayfront of the City of North Wildwood, presently at an elevation below 8' BFE according to NAVD 88 datum, with no floodgate/mechanism to block water during a rising tidal event.
- The Public Works facility is a critical facility is located outside of floodprone area, above BFE, surrounded by an Army Corps of Engineers seawall built to withstand the 500-year storm. The facility also serves as an evacuation center.
- Traffic signals in the City lack battery backup and shut off during power outages.
- Home buyers may not be aware of the hazards their new homes are exposed to.
- CR-621 is impacted by stormwater flooding.
- The three schools in the City limits (Margaret Mace, Wildwood Catholic Academy, St. Simeons – Wildwood Board of Ed.) could be damaged in storm events.
- The City lacks a Disaster Debris Management Plan to organize post event cleanup.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the City of North Wildwood that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the City of North Wildwood has significant exposure. A map of the City of North Wildwood hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the City of North Wildwood. The City of North Wildwood has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the City indicated the following:

- The City agreed with the calculated hazard rankings.

Table 9.8-13. City of North Wildwood Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
High	High	Medium	Medium	High	High
Nor'Easter	Severe Weather	Severe Winter	Tsunami	Wildfire	



Weather				
High	High	High	Medium	Medium

9.8.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.8-14. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CNW-1a	Property Mitigation Support – Retrofit: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	City (through NFIP Floodplain Administrator)	In Progress	X	2021-North Wildwood-001
CNW-1b	Property Mitigation Support – Acquisition/Relocation: Where appropriate, support acquisition and/or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	City (through NFIP Floodplain Administrator)	In Progress	X	2021-North Wildwood-001
CNW-2	Continue active participation in incentive-based program CRS and obtain a higher class during next recertification.	City (through NFIP Floodplain Administrator)	Ongoing Capability		
CNW-3	Continually implement, monitor and maintain the hazard mitigation plan and update the plan every five years.	City (through mitigation planning point of contacts)	Ongoing Capability		
CNW-4	Strive to maintain compliance with, and good standing in the National Flood Insurance program (NFIP) and CRS, through enforcement and adoption of the most up to date FIRMs	Municipality (through NFIP Floodplain Administrator)	Ongoing Capability		
CNW-5	Continue to develop, enhance, and implement existing	Municipal Emergency	Ongoing Capability		



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	emergency plans, including City participation in County EOP.	Manager with support from County OEM and NJ OEM			
CNW-6	Create/enhance/maintain and continue to implement mutual aid agreements with neighboring communities to promote shared services, decrease expenses and streamline operations	Local Departments	Ongoing Capability		
CNW-7	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local Departments (as applicable for specific initiative)	Ongoing Capability		
CNW-8	Continue to replace/repair/upgrade bay front storm sewer outfall lines (linear feet of pile, manhole, Tideflex valve, bulkhead repair and/or collar, restoration of disturbed areas), as needed.	Engineering	In Progress	X	2021-North Wildwood-009
CNW-9	Continue to make infrastructure improvements to Spruce Avenue (NJ-147), New Jersey Avenue, only evacuation route out of town	State DOT, Cape May County, and Municipality	In Progress – pump station will alleviate flooding from evacuation route	X	2021-North Wildwood-010
CNW-10	Elevate engine room floors of fire stations at 2nd and New Jersey.	Municipality (engineering with fire department)	No progress – funding constraints	X	
CNW-11	Continue to make upgrades to both fire houses and police dispatch for storm hazard prevention.	Municipality (engineering and emergency management)	In Progress	X	2021-North Wildwood-008
CNW-12	Continue to amend COOP/COG plan for all government operations when/where needed.	Emergency Management with County OEM and Lower Township	Ongoing Capability		
CNW-13	Continue to make improvements that will reduce flood risk from Central Avenue to Delaware Avenue and floodprone areas along and West of New Jersey/Spruce Avenues	Construction Office, Engineering and DPW	In Progress	X	2021-North Wildwood-005
CNW-14	Continue to upgrade and tie-in stormwater pump station at Pine and New York Avenue.	Construction Office, Engineering and DPW	In Progress	X	2021-North Wildwood-006
CNW-15	Continue providing educational materials, and advising and assisting property owners on retrofitting existing buildings through the City Construction Office. Update this material in conjunction with FEMA distribution office.	Construction Office, Emergency Management	Ongoing Capability		
CNW-16	Continue to enforce the City's Floodplain Ordinance requiring	Construction Office,	Ongoing Capability		



Section 9.8 - City of North Wildwood

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	all buildings substantially damaged be elevated to BFE +2' Freeboard.	Emergency Management			
CNW-17	Continue to enforce the City's Floodplain Ordinance that improvements to a building area on cumulative basis. Once the value of all improvements over time reaches 50% of the original building value, the entire building must be raised to the current BFE.	Construction Office, Emergency Management	Ongoing Capability		
CNW-18	Implement / continue the City's public outreach efforts to inform residents and visitors about flood damage and protection, and hazard awareness.	Construction Office, Emergency Management	Ongoing Capability		
CNW-19	Continue to support the prohibition of development within the beach/dune and coastal wetland open space preservation areas.	Construction Office, Emergency Management	Ongoing Capability		
CNW-20	Encourage the development of dunes along the City's beachfront to protect against erosion and storm surge inundation	Planning, Construction Office, Emergency Management	Ongoing Capability		
CNW-21	Maintain existing zoning regulations to prevent an increase in development densities.	Planning Board	Ongoing Capability		
CNW-22	The Building Inspector will continue to maintain FEMA elevation certificates for all permits for new buildings or improvements to buildings.	City Building Inspector	Ongoing Capability – City even uploads all ECs onto the City's website		
CNW-23	Continue to update website with grant opportunities for property elevation.	Emergency Management, Engineering	Ongoing Capability – City annually applies for properties to elevate their structures via FMA program (Over 10 structures elevated via FMA since 2016)		
CNW-24	Prepare a priority list for bulkhead upgrades, including private bulkheads through surveying.	Municipality (engineering and DPW)	In progress – City has been diligent in replacing public bulkheads, but the City is currently undertaking a private bulkhead survey to determine what properties may need upgrades.	X	2021-North Wildwood-009
CNW-25	Work with USACE on future mitigation projects, including Shore Protection Project.	USACE, Municipality (engineering and DPW)	In Progress – City anxiously waiting for Hereford Inlet to Cape May Inlet Shore Protection Project	X	2021-North Wildwood-004
CNW-26	Work with County to upgrade stormwater drainage along CR-621 and arterials	County Engineering and municipality (engineering and	In Progress	X	2021-North Wildwood-016



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
		DPW)			
CNW-27	Develop a project timeline to upgrade DPW that are extremely vulnerable to most any storm events	Municipality (engineering)	In Progress – City is developing a plan to upgrade DPW facilities; however, not the most floodprone of all City facilities.	X	2021-North Wildwood-013
CNW-28	Retrofit schools for coastal storms and other Severe Weather (e.g. wind resistant glazing or storm shutters, redundant utilities)	Municipality (engineering)	In Progress – three schools in the City limits (Margaret Mace, Wildwood Catholic Academy, St. Simeons – Wildwood Board of Ed.)	X	2021-North Wildwood-017
CNW-29	Replace/upgrade manhole covers for sanitary system to reduce stormwater inflow that overtaxes sanitary system	Municipality (engineering)	Completed		
CNW-30	Continue to monitor and survey the beaches. This provides critical information providing the basis for decisions regarding beach re-nourishment and long-term analysis of littoral processes.	City and Stockton College Coastal Research Center	Ongoing Capability		
CNW-31	Determine design strength of light poles at Bill Henfey Park, address deficiencies as necessary and seek funding for self-sustaining lights.	Municipality (engineering)	Completed		
CNW-32	Elevate Beach Patrol Building	Municipality (engineering)	No progress – issues with CAFRA		
CNW-33	Install backup power at traffic lights on critical roadways (e.g. evacuation routes)	Municipality (engineering)	In Progress	X	2021-North Wildwood-014
CNW-34	Install bulkhead along oceanfront beach to protect dune	Municipality (engineering)	In Progress	X	2021-North Wildwood-002
CNW-35	Work with NJDOT on any/all future back-bay dredging projects.	Municipality (engineering)	Ongoing Capability		
CNW-36	Continue to install tide flex valves/emergency sewer repairs at Pine and Anglesea Drive (joint project with State)	Municipality (engineering) with State DOT	Completed		
CNW-37	Continue to search for more grants for portable dewatering systems	Municipality (emergency management and engineering)	Ongoing Capability		
CNW-38	Continue to support the construction and installation of more lightning protection.	Municipality (engineering) with emergency management and NOAA	Ongoing Capability		
CNW-39	Continue to implement the initiatives identified in the MJPI.	Municipality – PPI Committee	Ongoing Capability		
CNW-40	Seek ways to mitigate flood risk to critical facilities located in special flood hazard areas.	FEMA, NJDEP, Municipality – North Wildwood	Ongoing Capability		
CNW-	Include a presentation on	PPI Committee –	Ongoing Capability		



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
41	retrofitting in the MJPII initiatives.	Municipality, ISO			
CNW-42	Continue to participate in the Blue Acres Funding program where permissible, as well as FMA for FMA acquisitions.	NJDEP, Municipality – North Wildwood	Ongoing Capability		
CNW-43	Continue to amend floodplain ordinances in accordance with changes in FEMA requirements.	FEMA, ISO, Municipality – North Wildwood	Ongoing Capability – City adopted floodplain management ordinance in 2017 to adopt the most recently approved FIRM.		
CNW-44	Continue to disseminate flood insurance information courtesy of NFIP and FEMA distribution center.	ISO, FEMA and Municipality – North Wildwood	Ongoing Capability – annual PPI initiative.		
CNW-45	Continue city's support of the "Draft Feasibility Study" prepared by NJDEP and U.S. Army Corp of Engineers (in reference to initiative NW-24.	Army Corp., NJDEP, Municipality – North Wildwood	Completed – City expressed approval in feasibility study; however, material is insufficient to the damage the beach has and is experiencing.		
CNW - 46	Continue to document all damages from coastal storms/disasters with the potential for disaster declaration	Municipality – North Wildwood OEM, State of New Jersey Police/OEM	Ongoing Capability		
CNW – 47	Consider Real Estate disclosure of flood and other hazards could become an Ordinance Requirement for transfers of title and/or a written policy for disclosing a property's Flood information	Municipality – North Wildwood	No Progress	X	2021-North Wildwood-015
CNW – 48	Continue to enforce Community Forestry and Public Lands Vegetation Management Plans to continue to meet impervious coverage standards	Municipality – North Wildwood, Parks and Grounds Dept.	Ongoing Capability		
CNW – 49	Continue to implement and enforce Land Use standards incorporated within the Comprehensive Master Plan	Municipality – North Wildwood, Construction and Zoning	Ongoing Capability		

In addition to the above progress, the City of North Wildwood identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- The City has spent over \$16 million for shore protection efforts since 2016.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The City of North Wildwood participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The City of North Wildwood participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the



following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.8-15 summarizes the comprehensive-range of specific mitigation initiatives the City of North Wildwood would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.8-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.8-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-North Wildwood -001	Repetitive Loss Mitigation	<p>Problem: The City has 453 remaining unmitigated repetitive loss properties and 95 severe repetitive loss properties. All pre-FIRM properties West of New Jersey Avenue. The City has been adamantly applying for RL/SRL properties through the FMA grant program and has been quite successful in doing so. HMGP and REM were two pre-existing grants that helped to elevate some RL/SRL properties. In the City's CRS submission, 6 RL properties were listed as substantial improvements. In total, there have been over 14 substantial improvements for RL/SRL properties within the past two years.</p> <p>Solution: Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$55M	3 years	High	SIP	PP
2021-North Wildwood -002	Oceanfront Bulkhead/ Seawall Extension	<p>Problem: Oceanfront erosion has caused damage to the beach, dune, and wetlands areas. Continued erosion could threaten homes and infrastructure behind the dune line.</p> <p>Solution: The City received a \$6.75 million grant from NJDEP to extend the seawall from 3rd – 5th Avenue. The City temporarily installed an emergency bulkhead to protect adjacent critical infrastructure from 3rd – 12th Avenue, and is presently working on a CAFRA permit to extend that bulkhead to 25th</p>	Existing	Flood, Coastal Erosion	1	NJDEP, City Administration	NJ DEP, HMGP, BRIC, City budget	Protection of homes and infrastructure from erosion damage	High	3 years	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Avenue, in anticipation and due to delays of the Army Corps/NJDEP Hereford Inlet to Cape May Inlet Shore Protection project to renourish the City's beach and stabilize the dune system.											
2021-North Wildwood -003	New Jersey Avenue Pump Station	Problem: Flooding is a repetitive issue in the New Jersey Avenue area. Solution: The City will install a pump station at New Jersey Avenue. The project will be going out to bid by the end of the year, with project completion anticipated by Fall, 2022. The pump station will be protected to the 500-year flood level and will have a backup power generator	New	Flood, Severe Weather	1	Engineer	HMGP, BRIC, City budget	Reduction in flood risk	\$3M	2 years	High	SIP	SP
2021-North Wildwood -004	Hereford Inlet to Cape May Inlet Shore Protection Project – USACE/NJDEP	Problem: Erosion to beach, dune and wetlands areas. The City has spent over \$16 million for shore protection efforts since 2016. Solution: According to Stockton Coastal Research, there is presently over 10 – 20 million cubic yards of material within the Hereford Inlet borrow zone. Through partnership with Stone Harbor and Avalon, it is the City's intent to apply for a CAFRA IP to pursue the harvesting of that material to place upon beaches. The City will then work to restore the dune system.	N/A	Coastal Erosion	1, 5	USACE, NJ DEP, City Administration, Stone Harbor, Avalon	USACE, NJDEP, City budget	Nourishment of beaches and dunes.	High	Within 5 years	High	NSP	NR
2021-North Wildwood -005	Bayside Living Shoreline	Problem: Nuisance tidal flooding produced by the back-bay is a recurring problem. Restoration of natural wetlands and shoreline is also needed. Solution: The City will construct a Bayside Living Shoreline in order to supplement mitigation efforts within most floodprone areas – the City is researching grant opportunities, but the determination of elevation at these locations will be represented in the Citywide bulkhead survey.	Both	Coastal Erosion, Flood, Severe Weather	1, 5	USACE, NJ DEP, Engineer	USACE, NJDEP, Partners for Fish and Wildlife City budget	Reduction in flood and coastal erosion, restoration of ecosystem services	High	Within 5 years	High	NSP	NR
2021-North	Bayside Pump-Station	Problem: Nuisance tidal flooding produced by the back-bay is slow to drain	New	Flood, Severe	1	Engineer	HMGP, BRIC, City	Reduction in	\$3M	2 years	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
Wildwood-006		on outgoing tides. Solution: The City will explore the addition of a bayfront pump to decrease flooding within the City's most floodprone area. If feasible, the City will install a pump station. The pump station will be protected to the 500-year flood level and will have a backup power generator.		Weather			budget	flood risk		ars			
2021-North Wildwood-007	Back-bay Flood Warning Signage	Problem: Nuisance tidal flooding produced by the back-bay can occasionally catch residents and visitors off guard, resulting in car damages. Solution: The City will install back-bay flood warning signs in areas with high back bay flooding risk.	Both	Flood, Severe Weather	2	OEM	City budget	Better flood awareness in high risk areas	Low	2 ye ars	Hig h	EAP	PI
2021-North Wildwood-008	Relocation and Building of a Consolidated Recreation/Public Safety Facility	Problem: The City has numerous facilities spread throughout the City and exposed to various levels of flooding such as the North Wildwood Career Fire Department HQ, Anglesea Volunteer Fire Company, 15 th Street Volunteer Fire Company, and the North Wildwood Recreation Center. Solution: The City will explore the option of building one consolidated Recreation/Public Safety Facility, designed to the 500-year flood level. If possible, the City will construct the facility.	New	All Hazards	1, 3, 4	Engineer, Administration	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, City Budget	Reducti on in flood risk, increasing emerge ncy capabili ty	High	Wi thi n 5 ye ars	Hig h	SIP	PP, ES
2021-North Wildwood-009	Bayside Bulkhead/Elevation Survey and Improvements	Problem: Coastal flooding takes place along the bayside. Bulkheads are in place on private and public property though the elevations and standards of bulkheads are not consistent. Failure of bulkheads would increase flood and coastal erosion risk. Solution: The City is currently in the midst of a Citywide bulkhead survey to determine elevations of all public and private bayfront bulkheads. Concluding the survey, the City will be implementing	Existing	Flood, Severe Weather, Coastal Erosion	1	Administrat ion	City budget	Reducti on in flood and erosion risk	High	Wi thi n 5 ye ars	Hig h	SIP, LPR	SP, PR



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		higher regulatory standards by ordinance to mitigate bulkheads responsible for the increase in nuisance tidal flooding. Additionally, the City is surveying the elevation of some street-ends where bulkheads may not be permissible due to wetlands/conservation easements – in that case, the City is looking to elevate the area through the creation and implementation of a living shoreline (2021-North Wildwood-005). An additional portion of the work on public bulkheads will include the replacement/repair/upgrade of bay front storm sewer outfall lines (linear feet of pile, manhole, Tideflex valve, bulkhead repair and/or collar, restoration of disturbed areas) as needed.											
2021-North Wildwood -010	NJ-147	<p>Problem: New Jersey Avenue/NJ-147 currently stands as the only evacuation route in and outside of the City of North Wildwood.</p> <p>Solution: Using CDBG DR funds provided by an NJDEP flood hazard risk resiliency grant, the City is installing a major pump-station to alleviate flooding on the only evacuation route. The project would also include a complete redevelopment of the storm sewer system at this location. The City will work with NJ DEPT to also raise the elevation of NJ147.</p>	Existing	Flood, Severe Weather	1, 4	NJDOT, City Administration	CDBG, NJDEP Flood Hazard Risk Resiliency Grant, City budget	Reduction of flood risk on evacuation route	High	Within 5 years	High	SIP	PP, SP
2021-North Wildwood -011	Moore's Inlet Pump-station Project	<p>Problem: Flooding is a repetitive issue in the Moore's Inlet area.</p> <p>Solution: The City will install a pump station at Moore's Inlet. The pump station will be protected to the 500-year flood level and will have a backup power generator on site.</p>	New	Flood, Severe Weather	1	Engineer	HMGP, BRIC, City budget	Reduction in flood risk	\$3M	2 years	High	SIP	SP
2021-North Wildwood -012	Elevation of 5 th Avenue Boat-Ramp	Problem: The City Boat Ramp is located along the bayfront of the City of North Wildwood, presently at an elevation below 8' BFE according to NAVD 88	Existing	Flood, Severe Weather	1	Engineer	EMPG, City budget	All bayside properties	\$7 million	Within 5 years	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		datum, with no floodgate/mechanism to block water during a rising tidal event. Solution: Elevate the boat ramp above BFE, reconstruct the bulkhead adjacent to the boat ramp. A temporary fix would be the installation of flood gates to be installed prior to any and every major tidal event.								ars			
2021-North Wildwood -013	Reconstruction of Public Works Facility (DPW)	Problem: The Public Works facility is a critical facility is located outside of floodprone area, above BFE, surrounded by an Army Corps of Engineers seawall built to withstand the 500-year storm. The facility also serves as an evacuation center. Solution: The City will install flood gates at the facility.	Existing	Flood, Severe Weather	3	Public Works	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, City Budget	Public Works facility protected from flooding	\$200,000	Within 5 years	High	SIP	PP
2021-North Wildwood -014	Backup Power for Traffic Lights	Problem: Traffic signals in the City lack battery backup and shut off during power outages. Solution: The City will purchase and install battery backup systems for traffic lights.	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	3, 4	Engineer, Public Works	HMGP, BRIC, City budget	Preserves function of traffic signals during power outages	\$4,000 per battery backup	Within 5 years	High	SIP	ES
2021-North Wildwood -015	Real Estate Disclosure	Problem: Home buyers may not be aware of the hazards their new homes are exposed to. Solution: The City will consider Real Estate disclosure of flood and other hazards could become an Ordinance Requirement for transfers of title and/or a written policy for disclosing a property's Flood information.	Existing	All Hazards	2	Administration	City budget	Increased outreach to and protection for homeowners	Staff time	Within 1 year	High	EAP	PI



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-North Wildwood -016	CR-621 Stormwater Improvements	Problem: CR-621 is impacted by stormwater flooding. Solution: The City will work with the County to design and implement upgrades stormwater drainage along CR-621 and arterials.	Existing	Flood, Severe Weather	1	County, City administration supporting	County budget, City budget	Increased cooperation on stormwater issues	Staff time	Within 5 years	High	SIP	SP
2021-North Wildwood -017	Retrofit Schools	Problem: The three schools in the City limits (Margaret Mace, Wildwood Catholic Academy, St. Simeons – Wildwood Board of Ed.) could be damaged in storm events. Solution: OEM will provide guidance on potential mitigation measures that could be implemented such as wind resistant glazing or storm shutters, redundant utilities, etc.	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	2	OEM, School boards	City budget	Schools better informed on potential mitigation measures	OEM staff time	Within 6 months	High	EAP	PI
2021-North Wildwood -018	Disaster Debris Management Plan	Problem: The City lacks a Disaster Debris Management Plan to organize post event cleanup. Solution: The City will prepare and adopt a Disaster Debris Management Plan	Existing	All Hazards	3, 4	OEM, Public Works, Administration	City budget	Disaster response capabilities increased	Low	Within 1 year	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

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





- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.8-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-North Wildwood-001	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High ⚠
2021-North Wildwood-002	Oceanfront Bulkhead/ Seawall Extension	0	1	0	1	1	0	0	0	1	1	1	0	1	1	9	High
2021-North Wildwood-003	New Jersey Avenue Pump Station	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High
2021-North Wildwood-004	Hereford Inlet to Cape May Inlet Shore Protection Project – USACE/NJDEP	0	1	1	1	1	0	0	0	1	1	1	0	1	1	9	High
2021-North Wildwood-005	Bayside Living Shoreline	0	1	1	1	0	0	0	1	1	1	1	0	1	1	9	High
2021-North Wildwood-006	Bayside Pump-Station	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High
2021-North Wildwood-007	Back-bay Flood Warning Signage	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-North Wildwood-008	Relocation and Building of a consolidated Recreation/Public Safety Facility	1	1	0	1	1	1	0	1	1	1	1	0	1	1	11	High
2021-North Wildwood-009	Bayside Bulkhead/Elevation Survey and Improvements	0	1	1	1	1	0	1	1	1	1	0	0	1	1	10	High
2021-North Wildwood-010	NJ-147	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-North Wildwood-011	Moores Inlet Pump Station	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High
2021-North Wildwood-012	Elevation of 5 th Avenue Boat-Ramp	0	1	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2021-North Wildwood-013	Reconstruction of Public Works Facility (DPW)	1	1	0	1	1	1	0	1	1	1	1	0	1	1	11	High



Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-North Wildwood-014	Backup Power for Traffic Lights	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2021-North Wildwood-015	Real Estate Disclosure	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-North Wildwood-016	CR-621 Stormwater Improvements	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-North Wildwood-017	Retrofit Schools	1	1	1	1	1	0	1	1	1	1	1	1	1	1	13	High
2021-North Wildwood-018	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.8-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise		X	X		X			X
Coastal Erosion	X	X	X	X	X	X		X
Disease Outbreak (new)		X	X		X			X
Drought (new)		X	X		X			X
Flood	X	X	X	X	X	X	X	X
Hurricane		X	X		X			X
Nor'Easter		X	X		X			X
Severe Weather	X	X	X	X	X	X	X	X
Severe Winter Weather		X	X		X			X
Tsunami		X	X		X			X
Wildfire		X	X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.8-1. City of North Wildwood Hazard Area Extent and Location Map 1

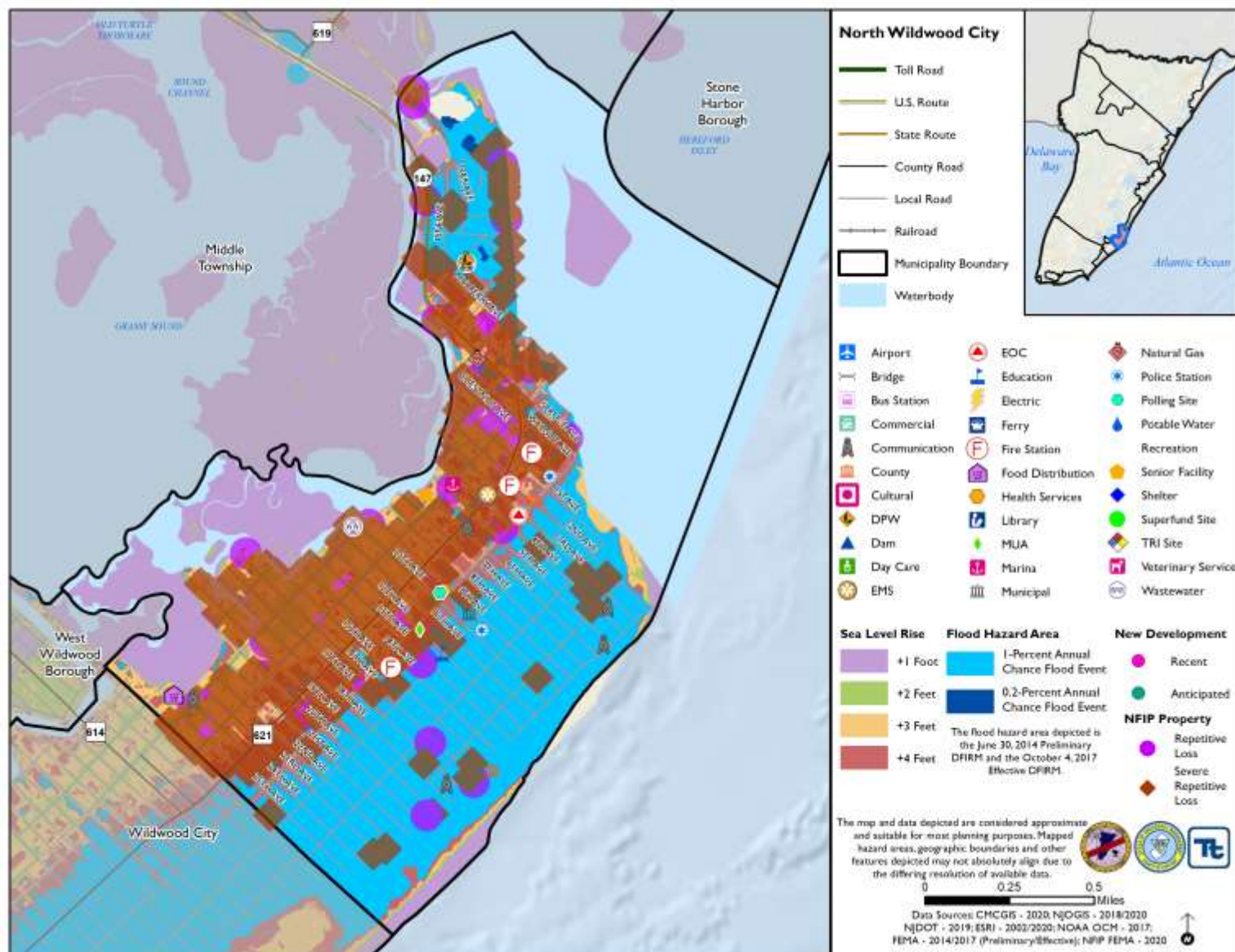




Figure 9.8-2. City of North Wildwood Hazard Area Extent and Location Map 2

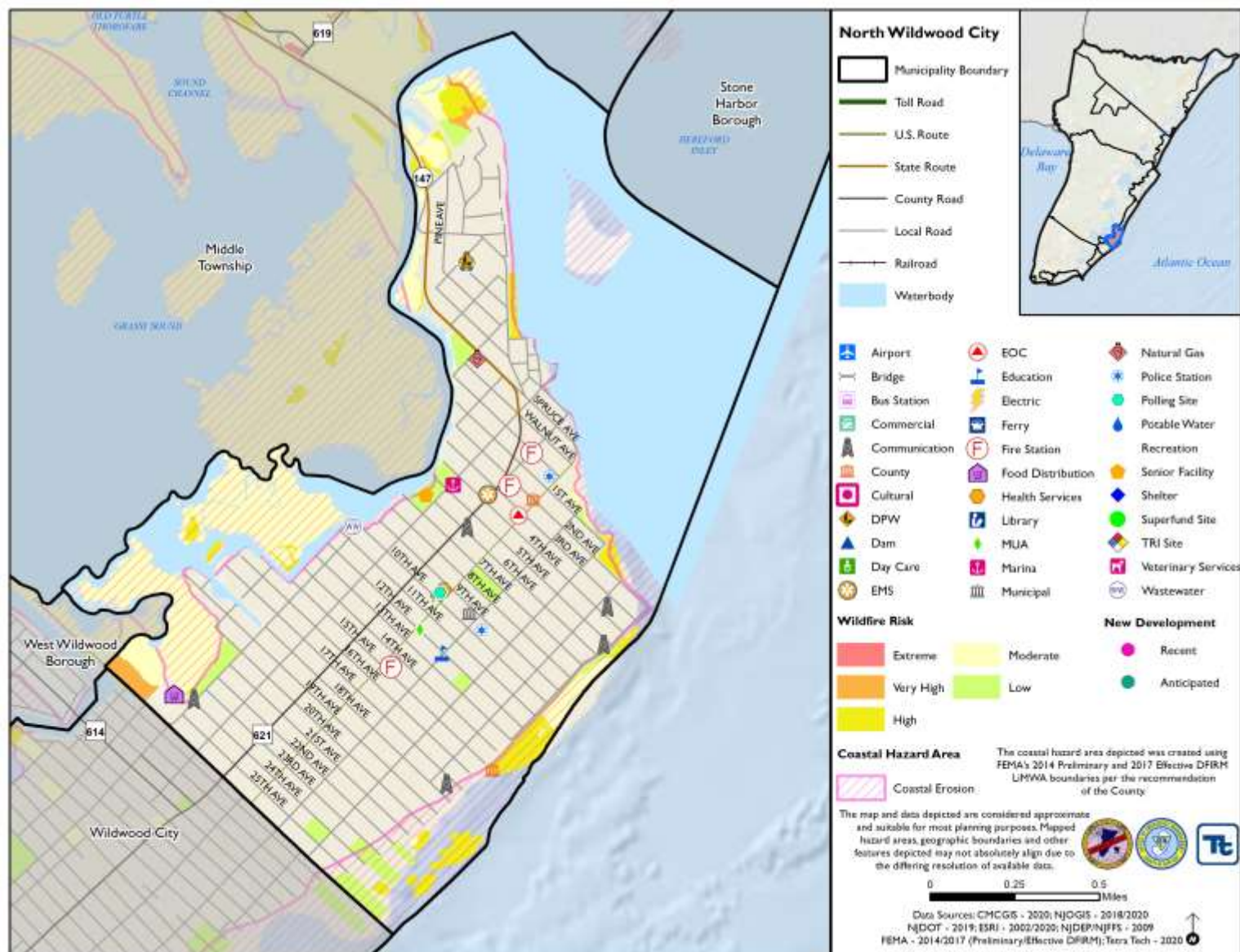
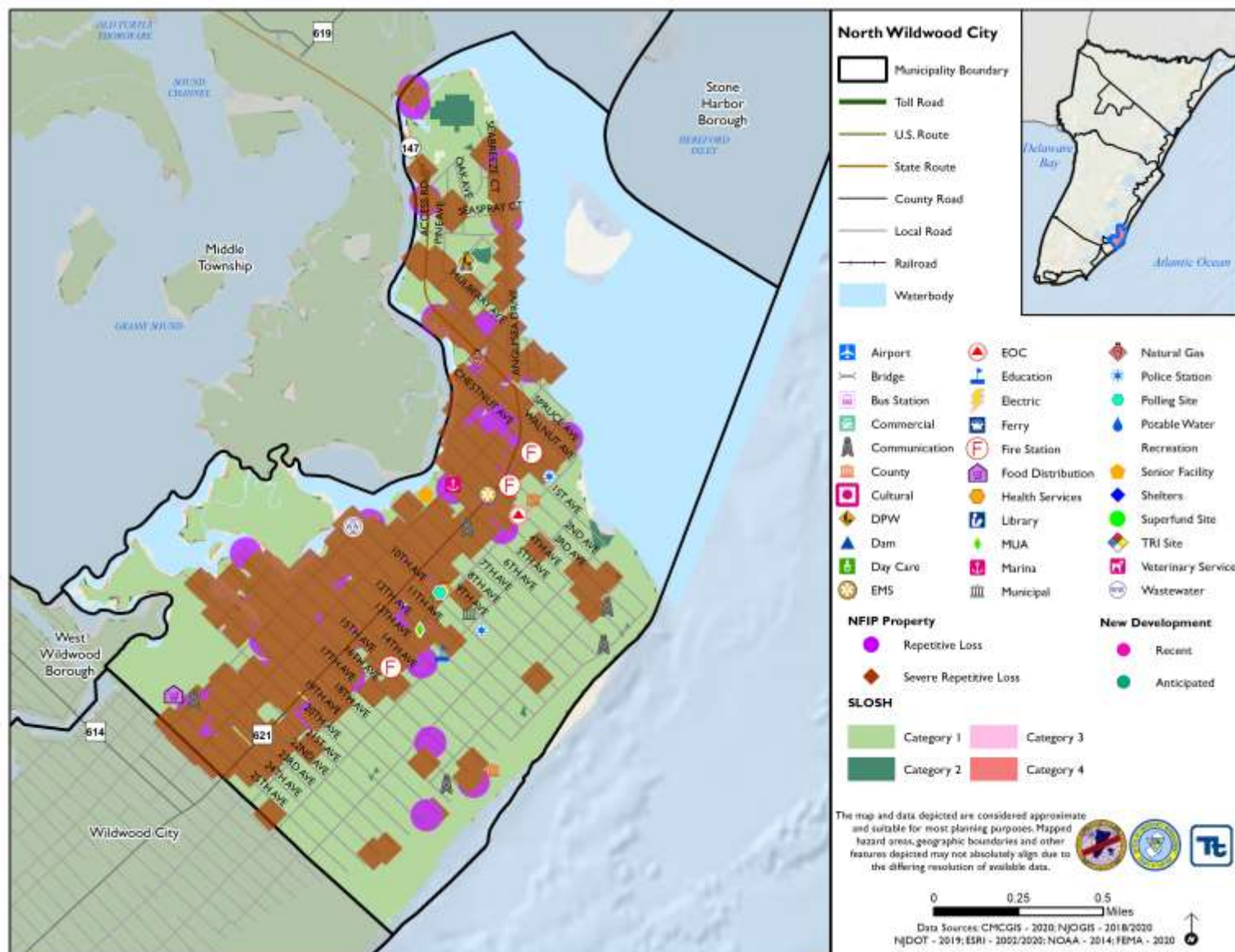




Figure 9.8-3. City of North Wildwood Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-North Wildwood-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The City has 453 remaining unmitigated repetitive loss properties and 95 severe repetitive loss properties. All pre-FIRM properties West of New Jersey Avenue. The City has been adamantly applying for RL/SRL properties through the FMA grant program and has been quite successful in doing so. HMGP and REM were two pre-existing grants that helped to elevate some RL/SRL properties. In the City's CRS submission, 6 RL properties were listed as substantial improvements. In total, there have been over 14 substantial improvements for RL/SRL properties within the past two years.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$55Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-North Wildwood-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The City has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the City.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Oceanfront Bulkhead/ Seawall Extension		
Project Number:	2021-North Wildwood-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Coastal Erosion		
Description of the Problem:	Oceanfront erosion has caused damage to the beach, dune, and wetlands areas. Continued erosion could threaten homes and infrastructure behind the dune line.		
Action or Project Intended for Implementation			
Description of the Solution:	The City received a \$6.75 million grant from NJDEP to extend the seawall from 3rd – 5th Avenue. The City temporarily installed an emergency bulkhead to protect adjacent critical infrastructure from 3rd – 12th Avenue, and is presently working on a CAFRA permit to extend that bulkhead to 25th Avenue, in anticipation and due to delays of the Army Corps/NJDEP Hereford Inlet to Cape May Inlet Shore Protection project to renourish the City's beach and stabilize the dune system.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Bulkhead extended	Estimated Benefits (losses avoided):	Protection of homes and infrastructure from erosion damage
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	3 years
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	NJ DEP, HMGP, BRIC, City budget
Responsible Organization:	NJDEP, City Administration	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Remove dune and install larger seawall	High	Likely to increase erosional rates
	Restore dune alone	\$300,000	Not enough guarantee of safety
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Oceanfront Bulkhead/ Seawall Extension	
Project Number:	2021-North Wildwood-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Protects properties from coastal erosion
Cost-Effectiveness	0	
Technical	1	The project is technically feasible
Political	1	
Legal	0	The project requires permitting to complete
Fiscal	0	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Coastal Erosion
Timeline	0	3 years
Agency Champion	1	NJDEP, City Administration
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	New Jersey Avenue Pump Station		
Project Number:	2021-North Wildwood-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Flooding is a repetitive issue in the New Jersey Avenue area.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will install a pump station at New Jersey Avenue. The project will be going out to bid by the end of the year, with project completion anticipated by Fall, 2022. The pump station will be protected to the 500-year flood level and will have a backup power generator on site.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	\$3 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Raise roadways in the area	\$250,000	Flooding likely to impact property owners
	Elevate homes in the area	\$3 million	Costly and roadways still flood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	New Jersey Avenue Pump Station	
Project Number:	2021-North Wildwood-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The City is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	2 years
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Bayside Pump Station		
Project Number:	2021-North Wildwood-006		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Nuisance tidal flooding produced by the back-bay is slow to drain on outgoing tides.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will explore the addition of a bayfront pump to decrease flooding within the City's most floodprone area. If feasible, the City will install a pump station. The pump station will be protected to the 500-year flood level and will have a backup power generator.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	\$3 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Raise roadways in the area	\$250,000	Flooding likely to impact property owners
	Elevate homes in the area	\$3 million	Costly and roadways still flood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Bayside Pump Station	
Project Number:	2021-North Wildwood-006	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The City is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	2 years
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Relocation and Building of a Consolidated Recreation/Public Safety Facility		
Project Number:	2021-North Wildwood-008		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	The City has numerous facilities spread throughout the City and exposed to various levels of flooding such as the North Wildwood Career Fire Department HQ, Anglesea Volunteer Fire Company, 15th Street Volunteer Fire Company, and the North Wildwood Recreation Center.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will explore the option of building one consolidated Recreation/Public Safety Facility, designed to the 500-year flood level. If possible, the City will construct the facility.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Reduction in flood risk, increasing emergency capability
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, City Budget
Responsible Organization:	Engineer, Administration	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Elevate all facilities	High	Costly and not possible for some facilities
	Build levees around facilities	N/A	No space for full levee systems
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Relocation and Building of a Consolidated Recreation/Public Safety Facility	
Project Number:	2021-North Wildwood-008	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of public safety facilities
Property Protection	1	Project will protect public safety facilities from flood damage.
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	1	The City has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All Hazards
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Administration
Other Community Objectives	1	Protection of critical services
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Moores Inlet Pump Station		
Project Number:	2021-North Wildwood-011		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Flooding is a repetitive issue in the Moores Inlet area.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will install a pump station at Moores Inlet. The pump station will be protected to the 500-year flood level and will have a backup power generator on site.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	\$3 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Raise roadways in the area	\$250,000	Flooding likely to impact property owners
	Elevate homes in the area	\$3 million	Costly and roadways still flood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Moores Inlet Pump Station	
Project Number:	2021-North Wildwood-011	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The City is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	2 years
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Reconstruction of Public Works Facility (DPW)		
Project Number:	2021-North Wildwood-013		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Public Works facility is a critical facility is located outside of floodprone area, above BFE, surrounded by an Army Corps of Engineers seawall built to withstand the 500-year storm. The facility also serves as an evacuation center.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will design and install flood gates at the facility.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by flood wall design	Estimated Benefits (losses avoided):	Public Works facility protected from flooding
Useful Life:	50 years	Goals Met:	3
Estimated Cost:	\$200,000	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, City Budget
Responsible Organization:	Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, Emergency management planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate facility	\$500,000	Costly and may not solve problem
	Relocate facility	N/A	Not possible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Reconstruction of Public Works Facility (DPW)	
Project Number:	2021-North Wildwood-013	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project protects emergency services of Public Works
Property Protection	1	Reduction in flooding risk
Cost-Effectiveness	0	
Technical	1	Technically feasible project
Political	1	
Legal	1	The City has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	Project would reduce flooding impacts.
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power for Traffic Lights		
Project Number:	2021-North Wildwood-014		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	Traffic signals in the City lack battery backup and shut off during power outages.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will purchase and install battery backup systems for traffic lights.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Preserves function of traffic signals during power outages
Useful Life:	20 years	Goals Met:	3, 4
Estimated Cost:	\$4,000 per battery backup	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, , Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbines	\$100,000 per turbine	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power for Traffic Lights	
Project Number:	2021-North Wildwood-014	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Preserves function of traffic signals during power outages
Property Protection	1	Project will protect traffic signals from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The City has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



9.9 CITY OF OCEAN CITY

This section presents the jurisdictional annex for the City of Ocean City. The annex includes a general overview of the City of Ocean City; an assessment of the City of Ocean City's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.9.1 Staff and Local Stakeholder Involvement in Annex Development

The City of Ocean City followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.9-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Frank Donato III, CFO/OEM Address: 861 Asbury Avenue Ocean City, NJ 08226 Phone Number: (609) 525-9350 Email: fdonato@ocnj.us		Name / Title: Vincent Bekier, Director Operations & Engineering Address: 115 East 12th Street Ocean City NJ 08226 Phone Number: (609) 525-9405 Email: vbekier@ocnj.us
NFIP Floodplain Administrator		
Name / Title: Mike Koochembere, Building Subcode Official Address: 115 East 12th Street Ocean City NJ 08226 Phone Number: (609) 525-9178 Email: MKoochembere@ocnj.us		
Name	Title	Method of Participation
Frank Donato III	CFO/OEM	Primary point of contact, meeting attendance; annex development, reviewed and signed off on annex
Randy Scheule	City Planner	Capability assessment development, annex updates, reviewed and signed off on annex
Vincent Bekier	Director of Operations & Engineering	Alternate point of contact, reviewed and signed off on annex
Mike Koochembere	Building Subcode Official	NFIP floodplain administrator
Jay A Gillian	Mayor	Reviewed and signed off on annex
George Savastano	Administrator/Engineer	Reviewed and signed off on annex
Cornelius Byrne	Building Code Official	Reviewed and signed off on annex
Jay Prettyman	Chief, Police Department	Reviewed and signed off on annex
James Smith	Chief, Fire Department	Reviewed and signed off on annex



9.9.2 Jurisdiction Profile

Ocean City, known as America's Greatest Family Resort, is a resort community in northern Cape May County located on the barrier island known as Peck's Beach. Ocean City is a historic destination for families from the mid-Atlantic region and beyond, boasting a 2.5-mile boardwalk, nine miles of beaches, more than 1,000 acres of marsh ecosystem, and unparalleled access to the Intracoastal Waterway and the Jersey Shore's beautiful back bays. With more than 20,000 housing units, Ocean City is a lively second home and primary residential community and features amenity-filled commercial and recreation districts and small-town charm.



According to the U.S. Census, the 2010 population for the City of Ocean City was 11,701. The estimated 2017 population was 11,202, a 4.2 percent decrease from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 4.9 percent of the population is 5 years of age or younger and 31.6 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.9.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.9-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.9-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.9-2. Recent and Expected Future Development

Type of Development	2015	2016	2017	2018	2019
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single and Two-Family Units	217	195	194	178	183
Multi-Family	31	4	6	2	19
Other (commercial, mixed-use, etc.)	1	1	0	0	3
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Recent Major Development and Infrastructure from 2015 to Present					
Ocean City Housing Authority	Low income housing	20 units	6th & West Avenue	AE-9 Flood Zone	New high-rise, four living stories over parking
North Island Inn	Condo/Hotel	15 Units	10th & Ocean Avenue	AE- 8 Flood Zone	Three stories over parking

* Only location-specific hazard zones or vulnerabilities identified.



9.9.4 Capability Assessment

The City of Ocean City performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.9.4). The City of Ocean City identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.9-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> • State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon) • Building and Housing, Chapter XII, adopted by City Council in 1985. There is hereby established in the City of Ocean City a State Uniform Construction Code Enforcing Agency, consisting of a Construction Official, Building Subcode Official, Fire Protection Subcode Official, and such other subcode officials for such additional subcodes as the Commissioner of the Department of Community Affairs, State of New Jersey. The Construction Official shall be the Chief Administrator of the Enforcing Agency. • The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code. 					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment:					



Table 9.9-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?					If no - can it be a mitigation action? If yes, add Mitigation Action #.
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments		
<ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Zoning and Land Development Chapter XXV, Zoning District Regulations, Article 200, adopted by City Council in 1988 and subsequently amended. The intent of this Ordinance is to establish a precise and detailed plan for the use of land in Ocean City and is enacted in order to promote and to protect the public health, safety, morals, comfort, convenience and the general welfare of the people by establishing zoning districts and therein regulate the use of land and structure for residential, business, office, conservation and other purposes, and by regulating the location, height, bulk and size of buildings and structures, the size of yards, courts and open spaces, the percentage of a lot which may be occupied by a building or a structure, and the density of population.The City created a Conservation Zone to prevent and eliminate conditions which, in the event of flood and storm, threaten the public health, safety and welfare and which lead to damage to, or loss of, property; and to promote recreational opportunities and public access along the bay front of the coastal area.The Beach and Dune Zone established in Section 25-201.3 of this Ordinance delineates areas in Ocean City where beaches and dunes have developed and are deemed to be part of those landforms which provided a natural protection from flooding. The purpose of establishing the Beach and Dune Zone is to regulate the use of this flood preventative land form in ways that will not destroy its flood preventative function, in accordance with N.J.S.A. 40:55D-2(a),(b),(g) and (j), in order to secure safety from flood and other natural disasters; to provide sufficient space for recreational uses in order to meet the needs of all New Jersey citizens; and to promote the conservation of a valuable natural resource.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Zoning and Land Development Chapter XXV, Development Application Procedures and Plat Details, Article 1500. Knowledge of FEMA flood zone, base flood elevation, Zoning Flood Elevation and such other information as may assist the Planning Board in the determination of floodway and flood hazard area limits shall be provided when considering an application for Subdivision approval.					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Sewer and Water, Chapter XV, adopted by the City CouncilAll discharges of stormwater, surface water, groundwater, roof runoff, and subsurface drainage shall be made to storm sewers or natural outlets designed for such discharges. Any connection, drain, or arrangement which will permit any such waters to enter any wastewater sewer shall be deemed to be a violation of this subsection and this Chapter.Stormwater Drainage is also addressed in detail in Zoning and Land Development, Chapter XXV, Development Applications Procedures and Plat Details, Article 1500.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment:					



Table 9.9-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. . It should be noted that Section 21-1.3 of the City's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard. 					
Growth Management	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. There is not a specific Growth Management Ordinance, but the management of growth is addressed in the City's Land Development Ordinances. The City is in the process of renewing its Regional Center designation from the State Planning Commission. 					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Zoning and Land Development Chapter XXV, Development Application Procedures and Plat Details, Article 1500. Knowledge of FEMA flood zone, base flood elevation, Zoning Flood Elevation and such other information as may assist the Planning Board in the determination of floodway and flood hazard area limits shall be provided when considering an application for Subdivision approval. 					
Environmental Protection	Yes	Local	No	Yes	--
Comment: <ul style="list-style-type: none"> Ocean City has adopted policies, plans and ordinances to protect the environment including the Master Plan Conservation Plan, Open Space and Recreation Plan, Stormwater Management Plan, Beach Management Plan, Watershed Management Plan, Floodplain Management Plan, and Natural Resource Inventory. The City code contains regulations that protect beach and dune areas, wetlands and bay islands. The State Plan Regional Center designation highlights the City's strategy to promote immediate and long-term adaptation and resilience strategies that protect natural resources, infrastructure, and the local economy. 					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. 					



Table 9.9-3. Planning, Legal and Regulatory Capability

	Have aspects of this been integrated into your mitigation plan?				
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">Flood Damage Prevention, Chapter XXI, adopted by the City Council in 1985 with subsequent amendments. The City Council of the City of Ocean City of Cape May County, New Jersey does ordain as follows.<ul style="list-style-type: none">The flood hazard areas of the City of Ocean City are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, causes damage in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.In order to accomplish the purposes of flood protection described in this Chapter the following methods and provisions are proposed:<ul style="list-style-type: none">Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction;Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;Controlling filling, grading, dredging, and other development which may increase flood damage; and,Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.New construction and substantial improvement of any residential structure located in an A or AE Zone shall have the lowest floor, including basement together with the attendant utilities (including all electrical, heating, ventilating, air-conditioning and other service equipment) and sanitary facilities, elevated at or above the best available flood hazard data elevation plus two (2) feet.					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	Yes	Local- Frank Donato, OEM	No	No	--
Comment: <ul style="list-style-type: none">Ocean City has adopted policies, plans and ordinances to protect the environment including the Master Plan Conservation Plan, Open Space and Recreation Plan, Stormwater Management Plan, Beach Management Plan, Watershed Management Plan, Floodplain Management Plan, and Natural Resource Inventory. The City code contains regulations that protect beach and dune areas, wetlands and bay islands. The State Plan Regional Center designation highlights the City's strategy to promote immediate and long-term adaptation and resilience strategies that protect natural resources, infrastructure, and the local economy.					
Climate Change	Yes	-	No	-	-
Comment: <ul style="list-style-type: none">The City's Floodplain Management Plan, Coastal Resilience Plan and Municipal Self-Assessment discuss the potential effects of climate change. These documents recognize the inherent challenges to barrier island communities presented by the more frequent and powerful coastal storms which are compounded by sea level rise.					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	State & Local	No	No	-
Comment: <ul style="list-style-type: none">Coastal Beach Zone, Chapter XIX, adopted by the City Council on June 16, 1988. It is the intent of the City in the creation of beach preservation and tidal flood plain zones to preserve the beach for public recreational purposes and also to prevent and eliminate conditions which in the event of flood and storm threaten the public health, safety and welfare and which lead to damage to or loss of property.Within the Atlantic Ocean Coastal Beach Zone, all existing natural and man-made sand dunes and vegetations shall be preserved. Where sand dunes do not exist, sand dunes may be established through the use of sand fencing or other suitable means and stabilized with American Beachgrass (Ammophila breviligulata) or other suitable plan materials. All protective sand dunes and					



Table 9.9-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?					If no - can it be a mitigation action? If yes, add Mitigation Action #.
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments		
vegetation shall be protected from damage by the restriction of pedestrian, equestrian and vehicular traffic. The use of dune buggies, motorcycles, motorbikes, jeeps and similar vehicles is prohibited within sand dune areas. Where necessary, trails and stairways through and over protective sand dunes may be provided for beach and water access. The removal, cutting, burning or destruction of the natural vegetation, sand fences and/or other types of beach protection devices in the Atlantic Ocean Coastal Beach Zone is prohibited.					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.The intent of the Tidal Flood Plain Zone is to prevent and eliminate conditions which, in the event of flood and storm, threaten the public health, safety and welfare and which lead to damage to, or loss of, property. The tidal flood plain zone includes all areas of the City lying waterward of official bay side flood plain line as shown on the accompanying map designated "Official Bay Side Flood Plain Line, Ocean City, New Jersey, dated December 1, 1971" and continuing to the municipal boundary. This zone specifically includes all islands in the bay.Master Plan Re-Examination Report, adopted by the Ocean City Planning Board on January 10, 2019.Master Plan objectives related to flood hazards and sustainability include to; Encourage efficient management of stormwater to address existing and prevent future drainage problems, and provide environmentally-sound land use planning, improve water quality, and reduce tidal flooding; and Promote and implement "Green" building techniques, sustainable design best management practices and energy conservation in the City, and encourage energy efficient and environmentally-sustainable development through the use of the standards established and published by the United States Green Building Council.					
Capital Improvement Plan	Yes	Local	No	Yes	-001, -002, -003, -004, -005, -006, -009, -013, -014, -015, -016
Comment:					
<ul style="list-style-type: none">2019 Capital Improvement Plan, 5-year plan line Item budget format. It funds Vehicle Rehab and Storm Trucks, Emergency Transport Bed; and City-Wide Communications Upgrades in 2019 &2020.					
Disaster Debris Management Plan	No	-	No	-	-018
Comment:					
Floodplain or Watershed Plan	Yes	Local	No	Yes	-003, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, 017
Comment:					
<ul style="list-style-type: none">Post-Sandy Planning Assistance Grant, Floodplain Management Plan, 2016. Floodplain management is the operation of a community program of preventive and corrective measures to reduce the risk of current and future flooding, resulting in a more					



Table 9.9-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?					If no - can it be a mitigation action? If yes, add Mitigation Action #.
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	
resilient community. These measures take a variety of forms, are carried out by multiple stakeholders with a vested interest in responsible floodplain management and generally include requirements for zoning, subdivision or building, building codes and special-purpose floodplain ordinances.					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-004, -005, -006, -009
Comment:					
<ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.Municipal Stormwater Management Plan. The goals of this MSWMP are to:<ul style="list-style-type: none">reduce flood damage, including damage to life and property;minimize, to the extent practical, any increase in stormwater runoff from any new development;reduce soil erosion from any development or construction project;assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;maintain groundwater recharge;prevent, to the greatest extent feasible, an increase in nonpoint pollution;maintain the integrity of stream channels for their biological functions, as well as for drainage;minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance thedomestic, municipal, recreational, industrial, and other uses of water; andprotect public safety through the proper design and operation of stormwater basins.					
Stormwater Pollution Prevention Plan	Yes	State & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.Stormwater Pollution Prevention Plan, dated 2005.To control stormwater from new development and redevelopment projects throughout the City of Ocean City (including projects operated by the City) we will do the following:<ul style="list-style-type: none">The City of Ocean City is already ensuring that all new residential development and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management (including the NJDEP Storm water Management rules, N.J.A. C. 7:8, referenced in those standards) are in compliance with those standards. The planning and zoning boards ensure such compliance before issuing preliminary or final subdivision or site plan approvals under the Municipal Land Use Law.Since the EDPA, the City of Ocean City has not constructed any new development or redevelopment projects on municipal property. If it decides to construct such a project before the municipal stormwater control ordinance takes effect, the City will ensure adequate long-term operation and maintenance of BMPs for that project by requiring a project maintenance plan similar to the maintenance plan described in the draft ordinance, and by requiring and funding the implementation of that plan. Also, any storm drain inlets that are installed will comply with the design standard in Attachment C of general permit.					



Table 9.9-3. Planning, Legal and Regulatory Capability

	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.				
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	
Once the stormwater control ordinance takes effect, operation and maintenance for any new development or redevelopment projects on municipal property will comply with the maintenance requirements as outlined in the ordinance. In addition, any storm drain inlets installed for municipal projects will comply with standards outlined in the ordinance.					
<ul style="list-style-type: none">As a result of this Plan a Municipal Storm Water Management Plan has been adopted by the City's planning board; and, a stormwater control ordinance was adopted to control development and redevelopment projects.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	No	-
Comment: <ul style="list-style-type: none">Beach Management Plan (January 2016) - The purpose of this beach management plan (BMP) is to provide a framework for cooperation among the City of Ocean City (City), the New Jersey Department of Environmental Protection's (NJDEP) Division of Fish and Wildlife's (NJDFW) Endangered and Nongame Species Program (ENSP), and the United States Fish and Wildlife Service's (USFWS) New Jersey Field Office (NJFO) in the stewardship of federally and State-listed endangered and threatened beach-nesting birds and flora (listed species) occurring on the City's beaches. Through this plan, the parties seek to provide for the long-term protection and recovery of listed species' populations in the City and the State, while balancing potentially conflicting missions. In the plan, the parties define and describe the roles and responsibilities of the City, the NJDFW, and the USFWS in the protection and management of listed species within the City.Conservation Plan Element, Environmental Resources and Recreation Inventory, adopted by the Ocean City Planning Board, June 10, 2009.Recommended policies in the Plan that are mitigation and/or sustainable measures are to:<ul style="list-style-type: none">establish coastal wetlands/bay islands as a zoning district, and prohibit development of any kind, except structures such as public access walkways and structures for wildlife observation.continue to implement measures to elevate streets to prepare for rising sea level.use the at-grade elevation data as a gis layer for flood predictions.support aquifer-wide and regional planning so that the water usage level does not exceed current levels to maintain potable water as long as possible.encourage low-water or native plantings in new development.identify and list large mature trees on private properties.consider an initiative that encourages plantings that provide habitat to migrating birds and butterflies; andidentify and protect large mature trees on public properties.					
Economic Development Plan	Yes	Local	No	No	-
Comment: <ul style="list-style-type: none">Ocean City Master Plan, Economic Development Element, dated May 2017.For the purposes of the [Hurricane Sandy] Rebuilding Strategy, green infrastructure is defined as the integration of natural systems and processes, or engineered systems that mimic natural systems and processes, into investments in resilient infrastructure. Green infrastructure takes advantage of the services and natural defenses provided by land and water systems such as wetlands, natural areas, vegetated sand dunes, and forests, while contributing to the health and quality of America's communities. Damage from flooding in inland areas, and from storm surge and flooding in coastal environments, is significantly reduced when natural wetland, riparian, and floodplain areas and the ecosystem services they provide are protected. A particularly effective use of green infrastructure to reduce damage from natural disasters is to conserve environmentally sensitive areas through strategies such as acquisition of land or easements, natural resource protection ordinances, and other regulatory controls and incentives. Potential benefits to Ocean City's economy associated with green infrastructure include, but are not limited to the following:<ul style="list-style-type: none">Creation of job and business opportunitiesIncreased tourism, retail sales, and other economic activityIncreased property valuesReduced energy, health care, and gray infrastructure costsProvision of locally produced resources (food, fiber, and water)While many of the above benefits do not directly relate to post-disaster recovery, they can contribute to increased community resilience and, in doing so, reduce vulnerability to natural disasters.Ocean City should continue to explore new and innovative ways to increase coastal resilience. Integrated approaches to planning for future disasters combine green and gray infrastructure strategies such as those used in Howard Beach, a neighborhood in Queens that was flooded by Hurricane Sandy, concluded that a combination of natural and structural defenses would provide the					



Table 9.9-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?					
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.	
most cost-effective protection against future storms 8. These “hybrid” strategies include restored marsh, mussel beds, rock groins, removable flood walls, and flood gates. At a larger scale, A Stronger, More Resilient New York 9 combines nature-based (e.g., beach, dune, and marsh restoration) and structural (e.g., floodwalls and storm surge barriers) measures to protect against the effects of climate change. Louisiana’s Coastal Protection Master Plan10 proposes a combination of restoration, nonstructural, and targeted structural measures to provide increased flood protection.					
Shoreline Management Plan	Yes	Federal, State & Local	Yes – if located in a coastal zone	Yes	-
Comment: <ul style="list-style-type: none">Ocean City is partner to a new 50-year agreement that calls for a three-year cycle of beach renourishment projects of which the federal government will pay 50 percent, the state 50 percent (with the municipality bearing 25 percent of the state’s cost).NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ’s Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq.Beach Management Plan, dated January 2016. This Beach Management Plan is more to protect Federal and State listed species, than it is a shoreline protection plan and is also suitable as a plan for habitat protection. However, while the Plan stresses protection of flora and fauna, it does so by including provisions for Dune Management and Beach Nourishment that also protects the shoreline and adjacent homes and facilities.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Community Forest Management Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Ocean City Community Forest Management Plan III, 2014-2108. The goals of Ocean City’s Shade Tree Management Program are; to continue to assure that any person constructing, reconstructing, converting, or enlarging any new building(s) or residence(s) within the City shall provide landscaping including pollution-resistant trees; to quantify and qualify tree resources; to increase the amount of, and the species diversity of shade trees on the island; to refine tree establishment standards; to protect existing trees; to acquaint, and encourage support from, the public about the value of trees; and to maximize public safety in association with trees.					
Transportation Plan	Yes	State, County & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Bicycle Friendly Community, Feedback Report, Fall 2012. Ocean City has a local policy to engineer streets with the consideration of bicyclists. There are additional policies in place that make cycling and walking more comfortable, convenient and enjoyable. Staff receive regular training in bicycle and pedestrian planning and engineering. Parking facility guidelines conform to the currently recognized design standards. Public buses are equipped with bike racks. The street network is well connected and allows cyclists to choose among several routes to get to a destination.In an effort to create a pedestrian and bike network that makes walking and cycling a viable alternative to driving, City Council adopted a ‘complete streets’ policy in October 2011.					
Agriculture Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Climate Action Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Tourism Plan	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Business Development Plan	Yes	Local	No	No	-
Comment: <ul style="list-style-type: none">Buying Local Business Program. Although not a written plan the Ocean City Regional Chamber of Commerce has a program in place increasing its social media platform and Ocean City app features to draw more visitors to the island. The Ocean City					



Table 9.9-3. Planning, Legal and Regulatory Capability

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Regional Chamber of Commerce has increased its social media platform to attract even more visitors to “America’s Greatest Family Resort.” This Program also promotes tourism.					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	State, County & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.Emergency Operations Plan, approved 01-12-2017.The City of Ocean City, Office of Emergency Management, in cooperation with the County Office of Emergency Management, local agencies, and other members of the community, endeavors to prepare for, respond to, and recover from natural and man-made disasters that threaten the lives, safety, and property of the citizens of City of Ocean City. This Basic Plan will provide guidance for: preparedness, response, recovery, and mitigation procedures; disaster and emergency responsibilities; and training and public education activities					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">2013 Plan.					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.9-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No – The buildout analysis contained in the 2019 CMC Wastewater Management Plan shows the residential dwelling units (DU) and non-residential floor area (SF) potential development for each zone, which is calculated as the sum of the



Criterion	Response
	approved or potential new development. Based on the limited vacant lands available for infill development in Ocean City, the analysis estimates net future development up to 75 new residential dwellings units and 223,896 square feet of new non-residential space based on the current zoning, not including existing development.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the City of Ocean City.

Table 9.9-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board and Zoning Board of Adjustment
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	Committee TBD
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Office of Emergency Management
Maintenance program to reduce risk	Yes	Stormwater Basin Plan (Annual)
Mutual aid agreements	Yes	Fire
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Administration City
Engineers or professionals trained in building or infrastructure construction practices	Yes	Administration City
Planners or engineers with an understanding of natural hazards	Yes	Administration City
Staff with training in benefit/cost analysis	Yes	Administration City
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	No	-
Stormwater engineer	Yes	Roger Rinck- Engineering Manager, Ocean City Engineering Division
Personnel skilled or trained in GIS applications	Yes	Administration City
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Administration City
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Administration City
Resilience Officer	No	-
Other	No	-



FISCAL CAPABILITY

The table below summarizes financial resources available to the City of Ocean City.

Table 9.9-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the City of Ocean City.

Table 9.9-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes- Doug Bergen
Do you have personnel skilled or trained in website development?	Yes- the City has an Information Technology division. Its director is Max Hurst and the network engineer is Jeff Miletta.
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes- the City's FloodSmart website hosts a wealth of information about flooding conditions in Ocean City. http://www.ocnj.us/flood-smart/
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes- the Engineering Division's GIS Specialist, Benny Tafoya, publishes social media information related to flooding and hazard awareness.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes- the City has a Floodplain Management Committee that addresses flooding issues and planning.
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Ocean City and Upper Township jointly host Community Emergency Response Team (CERT) training classes and solicit corps volunteers for events in the City.

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the City of Ocean City.

Table 9.9-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	4	5/1/2020
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	May 8, 2012
Public Protection (Fire ISO Protection Class)	Yes	3	May 8, 2012
Storm Ready Certification	Yes	N/A	September, 2015



Program	Participating?	Classification	Date Classified
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	11/7/2019

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.9-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.9-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering and Construction
Who is your floodplain administrator? (name, department/position)	Mike Koochembere , Building Subcode Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	November 26, 2019
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Yes, the City is recognized as a Class 4 CRS community and its ordinance exceeds NFIP requirements for freeboard and other standards.
When was the most recent Community Assistance Visit or Community Assistance Contact?	August 23, 2007
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	Yes



Criterion	Response
-If no, state why.	
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes- the City is continuing to examine ways to enhance its CRS class
How many flood insurance policies are in force in your jurisdiction?*	9,843 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	8,343 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$85,589,583 in payments for losses
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Floodplain Management Planning:** Ocean City has undertaken a comprehensive approach to floodplain management as part of its FloodSmart program. The City has a citizen committee that advises on floodplain management planning and drainage efforts. The City continually seeks and implement measures to enhance floodplain management and improve its Community Rating System program ranking. The City requires more than two feet of freeboard for new and substantial improvements.
- **Cooperation:** The City works with surrounding communities and Cape May County on multi-jurisdictional efforts promoting sound floodplain management, infrastructure improvements, and emergency response.
- **Public Awareness:** Ocean City undertakes a number of projects to enhance the public's awareness of flooding and other hazard events. The City maintains a list of recorded flood levels and impacts.
- **Nature-based Solutions:** Ocean City undertakes ecological uplift for flood mitigation projects and to enhance its natural habitats.
- **Bulkhead Standards:** Ocean City is working with private property owners to maintain a consistent bulkhead elevation to prevent inundation and mitigate wave action damage.
- **Beach Management:** The City has an ongoing beach nourishment program and maintains its dune systems. Its Beach Management Plan manages its shoreline habitats and designates areas for recreation and preservation.

9.9.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The City of Ocean City's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.9-11 provides details regarding municipal-specific loss and damages the City experienced during hazard events. Information provided in the table below is based on reference material or local sources.



Table 9.9-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 Jonas	Snow Storm/ Nor'easter	Yes	A low pressure system traveled across the country and became a major nor'easter, bringing high amounts of snow, coastal flooding, and winds to coastal New Jersey.	More than 200 properties in the City filed claims for flood losses, which totaled \$4 million.
October 27, 2018	Flood	No	The City was impacted by a strong low pressure system moving up the coast. Coastal New Jersey experienced coastal flooding and high winds.	Nine structures were damaged during the flooding event, when tide gauges reported levels at 5.2 feet NAVD 88. NFIP damage claims totaled \$62,000.
April 21, 2020	Windstorm	No	An anomalous, strong cold front causing extreme wind shear and instability. Wind gusts up to 72 mph were reported in Cape May.	Some buildings experienced minor roof damage and sign posts were felled by the winds.

Source: NOAA NCEI 2020, FEMA 2020

9.9.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the City of Ocean City risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the City of Ocean City.

- Number of repetitive loss (RL) properties: 554
- Number of severe repetitive loss (SRL) properties: 69
- Number of RL/SRL properties that have been mitigated: 81

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.9-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
OCEAN CITY MUNICIPAL AIRPORT	Airport	X	X
Roosevelt Blvd. Bridge	Bridge	X	X
Ocean City-Longport Bridge(CMCBC)	Bridge	X	X
Ocean Drive Bridge (CMCBC)	Bridge	X	X
Rt. 52 Causeway	Bridge	X	X
W. 17th St. Bridge	Bridge	X	X
Gardens Plaza	Communications Facility	X	X



Name	Type	Exposure	
		1% Event	0.2% Event
Port-O-Call	Communications Facility		X
OCEAN CITY INTERMEDIATE	Education	X	X
OCEAN CITY HIGH SCHOOL	Education	X	X
OCEAN CITY PRIMARY	Education	X	X
Ocean City	EOC	X	X
OCEAN CITY FIRE DEPARTMENT Station 2	Fire Stations	X	X
OCEAN CITY FIRE DEPARTMENT Station 1	Fire Stations	X	X
OCEAN CITY FIRE DEPARTMENT Station 3	Fire Stations	X	X
Howard Stainton Senior and Nutrition Center	Health Services	X	X
Bayview Marina	Marinas	X	X
Ocean City Marina	Marinas	X	X
Bay Club	Marinas	X	X
Blue Water Marina	Marinas	X	X
Ocean City Boat Ramp	Marinas	X	X
Ocean City Bayside Center	Marinas	X	X
USCG Station Ocean City,NJ	Marinas	X	X
Ocean City City Hall	Municipal Facilities	X	X
Henry Knight Building	Municipal Facilities	X	X
Ocean City Police Department	Police Stations	X	X
8TH STREET RECREATION CENTER	Polling Places	X	X
CIVIC CENTER	Polling Places	X	X
OCEAN CITY LIBRARY	Polling Places	X	X
OCEAN CITY YACHT CLUB	Polling Places	X	X
OUR LADY OF GOOD COUNSEL HALL	Polling Places	X	X
ST. FRANCES CABRINI	Polling Places		X
WESLEY MANOR	Polling Places	X	X
OCEAN CITY HUMANE SOCIETY	Polling Places	X	X
Ocean City Boardwalk	Recreation	X	X
The Shores at Wesley Manor	Senior Facility	X	X
Wesley By the Bay	Senior Facility	X	X
Ocean City Housing Authority	Senior Facility	X	X
3rd St Pump Station	Superfund Sites	X	X
OCEAN CITY COAL GAS (JCP&L & NJNG)	Superfund Sites	X	X
OCEAN CITY MUNICIPAL AIRPORT	Superfund Sites	X	X
Waste Water Treatment Plant	Wastewater Treatment Facilities	X	X
28th Street Storm Water Pump Station	Wastewater Treatment Facilities	X	X
32nd St Pump Station	Wastewater Treatment Facilities	X	X
27th Street Storm Water Pump Station	Wastewater Treatment Facilities	X	X
20th St Pump Station	Wastewater Treatment Facilities	X	X
2nd Street Storm Water Pump Station	Wastewater Treatment Facilities	X	X
30th Street Storm Water Pump Station	Wastewater Treatment Facilities	X	X
36th Street Storm Water Pump Station	Wastewater Treatment Facilities	X	X
6th Street Storm Water Pump Station	Wastewater Treatment Facilities	X	X
Bayland Storm Water Pump Station	Wastewater Treatment Facilities	X	X



Name	Type	Exposure	
		1% Event	0.2% Event
Somerset Storm Water Pump Station	Wastewater Treatment Facilities	X	X
Westminster Storm Water Pump Station	Wastewater Treatment Facilities	X	X
Bayside Center Storm Water Pump Station	Wastewater Treatment Facilities	X	X
Rt. 52 Welcome Center Pump Station	Wastewater Treatment Facilities	X	X
Oxford CCMUA Sewage Pump	Wastewater Treatment Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- Ocean City experiences frequent nuisance flooding resulting from the combined impact of tide levels and precipitation events. Debris in the stormwater system also contributes to flooding conditions. Road elevations are typically highest mid-block and slope downwards towards the sidewalks and intersections, leading to observed street flooding on numbered streets. Flooding is most prevalent in sections of the City located between West Avenue and the Bay, inclusive of Haven and Simpson Avenues.
- During storm surge events, flood waters enter the City's upland residential areas from gaps in bulkheads and from storm drains. The City owns bulkheads for its waterfront properties, though most bulkheads in the City are on privately-owned lands where the owner is responsible for upgrades and maintenance. Gaps in bulkheads remain on certain areas of Bay Avenue and are not currently present in two low-lying neighborhoods in the City (Ocean City Homes and Merion Park).
- Stormwater flooding has been observed in various upland portions of the City, such as the 200 block of Central and Asbury Avenues, as well as street-ends located at the dunes and boardwalk.
- The North End of Ocean City's beachfront (generally from 12th Street north to Seaview Road) and 57th Street south to Corson's Inlet experiences consistent beach erosion, particularly during nor'easter season. The City receives regular beach nourishment projects and also has a dune system, though emergency stopgap measures to arrest erosion are deployed in response to storms.
- Ocean City is located on a barrier island that has been partially filled and is subject to subsidence. Portions of the City that are particularly low-lying include: Bay Avenue to West Avenue between 25th Street and 34th Street; Bay Avenue between 2nd Street and 17th Street; Merion Park; West 17th Street, Pleasure Avenue; Crescent Road; and Battersea Road and North Street west of Wesley Road.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the City of Ocean City that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the City of Ocean City has significant exposure. A map of the City of Ocean City hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The



ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the City of Ocean City. The City of Ocean City has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the City accepted the proposed risk ranking.

Table 9.9-13. City of Ocean City Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
High	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Medium

9.9.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.9-14. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update? Check if Yes	
					Enter 2021 HMP Action #
OC-1a (former OC-1a)	Support retrofitting (e.g. elevation) of floodprone structures, with repetitive loss and severe repetitive loss properties as priority.	City (likely through NFIP Floodplain Administrator)	Ongoing Capability	X	2020-OceanCity-016
OC-1b (former OC-1b)	Support acquisition and/or relocation of floodprone structures, with repetitive loss and severe repetitive loss properties as priority.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing Capability	X	2020-OceanCity-007
OC-2 (former OC-5)	Complete the development of the City's Strategic Recovery Plan.	City	Complete		



Table 9.9-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
OC-3 (former OC-6)	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Local departments (as applicable for specific initiative)	Ongoing Capability		
OC-4 (former OC-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
OC-5 (former OC-8)	Complete the development and adoption of an additional ordinance requiring a minimum elevation for garages, pursuant to the City's adoption of Ordinance #12-19 requiring 2 feet of freeboard.	Planning and Engineering	Ongoing Capability		
OC-6 (former OC-11)	Post expanded information on the website about more flood vulnerable sections of the City (e.g. low elevation areas) – affects CRS credits.	Local Departments	Ongoing Capability		
OC-7 (former OC-12)	Promote public awareness of local flood risk (e.g. put BFE's on telephone poles using yellow spikes or painted bands; identify flood levels at all critical facilities).	Emergency Management, Planning and Engineering	Ongoing Capability		
OC-8 (former OC-13)	Upgrade existing revetment wall (needs to be extended to the south and existing sections upgraded) and provide additional road protection to CR-619 in Strathmere to Ocean City, and elevate sections of road as needed.	County Engineering with municipal support	No Progress	X	2021-OceanCity-008
OC-9 (former OC-14, CMC-36)	Upgrade storm drainage in Ocean City, which are currently designed to handle only a 2-year storm event. Various projects.	County Engineering with municipal support	In Progress	X	2021-OceanCity-006
OC-10 (former OC-16)	Relocate or elevate firehouse at 29th and West which was severely damaged during Sandy.	City	Completed		
OC-11	Perform drainage improvements in Bayland Drive and Bay Avenue to address recurrent flooding	Engineering	No Progress		



Table 9.9-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	(from Master Plan Re-exam)				
OC-12	Use dredge material as a beneficial reuse for wetlands restoration in the City.	Planning, Engineering, Administration	Ongoing Capability		
OC-13 (former OC-21)	Continue program to upgrade bulkheads to 8.20' NGVD.	Planning and Engineering Department	Ongoing Capability		
OC-14 (former OC-26)	Consolidation of the Drainage Systems and Construction of a Pump Station to service drainage areas from 1st St. and 8th St. between West Ave. and the bayfront.	Planning and Engineering Departments	Complete		
OC-15 (former OC-27)	Construction of a protective floodwall with stone reinforcement around the historic Music Pier. Location is on the beachfront at Moorlyn Terrace.	Planning and Engineering Departments	No Progress	X	2021-OceanCity-003
OC-16 (former OC-29)	Road elevation of Haven Ave. between 26th St. and 34th St.; and Simpson Ave. between 31st Street and 34th Street.	Planning and Engineering Departments	Complete		
OC-17 (former OC-32, CMC-69)	Fire protection education and National Fire Protection Association (NFPA) "Firewise" initiative.	Local Fire Chiefs working with County Fire Coordinator and identified residents	No Progress	X	2021-OceanCity-010
OC-18 (former OC-33)	South End Ocean From Bulkhead Replacement	Planning and Engineering Department	No Progress	X	2021-OceanCity-011
OC-19 (former OC-35)	Standards for the Construction Adjacent to Bulkheads	Planning and Engineering	Ongoing Capability		
OC-20 (former OC-36)	Route 152 Shore Protection and Elevation	County Engineering with municipal support	No Progress	X	2021-OceanCity-017
OC-21 (former OC-37)	Elevation of Roosevelt Boulevard from Bay Avenue to the Garden State	County Engineering with municipal support	No Progress	X	2021-OceanCity-012
OC-22 (former OC-38)	Bulkhead Merion Park and Install Pump Station	Planning and Engineering Department	In Progress	X	2021-OceanCity-013



Table 9.9-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
OC-23 (former OC-39)	Elevate Merion Park	Planning and Engineering Departments	In Progress	X	2021-OceanCity-014
OC-24 (former OC-40)	Bulkhead Ocean City Homes and Install Pump Station	Planning and Engineering Department	In Progress	X	2021-OceanCity-015
OC-25 (former OC-41)	Elevate Ocean City Homes – elevate the roads, yards and homes in this section of town to reduce flooding.	Planning and Engineering Departments working with property owners	No Progress	X	2021-OceanCity-016
OC-26 (former OC-42)	Beach nourishment and dune reconstruction for beaches south of 36th street.	USACE with municipal support	Ongoing Capability		
OC-27 (former OC-43, -44)	Once new flood maps are finalized, the City will begin the process to: Adopt Coastal A-Zone construction standards. Review and revise zoning standards to promote construction standards that embrace new higher base flood elevations.	Planning and Engineering	Complete		
OC-28	Implement outreach projects as described in the City's PPI.	Planning, Engineering, Administration	Ongoing Capability		
OC-29	Promote protection of open space, important habitats, and environmentally sensitive areas through public and private action in order to maintain and improve the City's biodiversity, and improve protection from sea level rise and Severe Weather events. (from Open Space Plan)	Planning, Engineering, Administration	Ongoing Capability		
OC-30	Establish design and performance standards that will protect environmentally sensitive and critical habitat lands including floodplains, wetlands, sand dunes and beaches. (from Open Space Plan)	Planning, Engineering, Administration	Ongoing Capability		



PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The City of Ocean City participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The City of Ocean City participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.9-15 summarizes the comprehensive-range of specific mitigation initiatives the City of Ocean City would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.9-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-OceanCity-001	South End Flood Protection	<p>Problem: West Avenue in Ocean City is located at a low elevation. Inundation of West Avenue begins at water levels that are just two feet above the typical high tide. Currently there are no structural protective measures in place preventing floodwaters from inundating West Avenue and moving inland into Ocean City.</p> <p>Solution: Bulkhead/Barrier along West Ave. from 36th to 52nd Street and install pump station to encumber Asbury Ave. to marsh and elevate roads.</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise	1, 3, 6	Operations & Engineering Department, working with property owners and County	Ocean City capital plan funding and/or hazard mitigation funding	Protection of large low-lying sections of the City's South End	\$10 mil	2025	High	SIP	SP
2020-OceanCity-002	Recreation Facility Mitigation	<p>Problem: Some of Ocean City's recreation and open space facilities are located at low elevations. For example, the Grimes Field facility at Sixth Street begins experiencing flooding when flood levels are just one foot above typical high tides. This leads to acute drainage issues and hampers the ability of the City to use the publicly-owned land for staging and recovery during emergency situations.</p> <p>Solution: The City proposes to elevate certain recreational facilities (inclusive of the Tennessee Avenue Complex and Grimes Field at 6th and Bay Avenue) to provide local areas of high ground refuge during flooding events.</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise	1, 3, 6	Operations & Engineering Department	Ocean City capital plan funding	Localized and accessible areas of higher ground during flooding	\$3.5 mil	2021	High	SIP	SP
2020-OceanCity-003 (Former OC-15)	Music Pier Wave Mitigation	<p>Problem: The Ocean City Music Pier, located on the boardwalk, is a major destination in Ocean City as well as a building eligible for listing on the State Register of Historic Places. The Music Pier is located within the VE Zone and is highly vulnerable to coastal erosion and wave action. The historic structure is located on concrete pilings that extend into the surf.</p> <p>Solution: The City proposes to expand the deck around the Music Pier and provide</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion	1, 3, 6	Operations & Engineering Department	US Army Corps; BRIC; Shore Protection Fund; Local match	Protection of a historic structure and surrounding infrastructure	\$5 mil	2030	Medium	SIP	SP



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		wave attenuating measures to protect the Music Pier, Boardwalk, and landward properties. This would mitigate wave action and erosive forces.											
2020-OceanCity-004	West 17 th Street Improvements	<p>Problem: West 17th Street is a 10-acre section of the City's waterfront Riviera neighborhood that is home to approximately 250 residential properties valued at \$32.1 million in structure value. The neighborhood was one of the City's first waterfront neighborhoods and was built from fill. The neighborhood is very low-lying and begins experiencing tidal flooding impacts when tide levels are just one foot above typical high tides.</p> <p>Solution: The City proposes to elevate street and install higher bulkheads and a pump station to discharge stormwater and mitigate nuisance flooding.</p>	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise	1, 3, 6	Operations & Engineering Department	Ocean City capital plan funding and/or hazard mitigation funding	Enhanced protection of neighborhood.	\$5 mil	2022	High	SIP	SP
2020-OceanCity-005	Ocean City Outfall Consolidation	<p>Problem: Ocean City has a number of outfall structures that carry stormwater from streets and properties to both the Ocean and bay. The utility of the outfalls has decreased as sediment has accumulated and caused backups at numerous outfalls. This inhibits stormwater drainage, causing upland impacts.</p> <p>Solution: The City proposes to consolidate existing outfalls and remove surplus outfalls as identified by the Operations and Engineering Department.</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather	1, 3, 6	Operations & Engineering Department	Ocean City Capital Plan and NJ DEP Coastal Engineering	Enhanced drainage for neighborhoods in the City	\$3 mil	2022	High	SIP	SP
2020-OceanCity-006	Ocean City Stormwater Management Upgrades	<p>Problem: Ocean City's drainage systems have historically been designed to handle the two-year stormwater event. The City has replaced the system in some areas, though a number of sections of the City continue to have undersized stormwater systems.</p> <p>Solution: Enhance and upgrade Ocean City's stormwater system capabilities to handle more intense storms.</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather	1, 3, 6	Operations & Engineering Department	Ocean City Capital Plan	Enhanced drainage for neighborhoods in the City	\$1 mil	2021	Medium	SIP	SP



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-OceanCity-007 (Former OC-1b)	Property Acquisition	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: Where appropriate, the City proposes to acquire properties in low-lying areas where structural flood protection is not feasible.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather	1, 3, 5, 6	Ocean City OEM and Floodplain Administrator	FMA; HMGP; Local match; Blue Acres	Foregone damage to structures from flooding; ecosystem enhancements	\$20 mil	2021	High	SIP	PP
2020-OceanCity-008 (Former OC-8)	CR-619 Mitigation	Problem: CR-619 is an evacuation route for the Upper Township neighborhood of Strathmere and provides access to Corson's Inlet State Park. The road is vulnerable to coastal erosion and flooding near the Corsons Inlet bridge. Solution: Upgrade existing revetment wall (needs to be extended to the south and existing sections upgraded) and provide additional road protection to CR-619 in Strathmere to Ocean City and elevate sections of road as needed.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion	1, 3, 4, 6	Operations & Engineering Department and Cape May County Engineering Department	Local match; BRIC; HMGP; County funds; Transportation Trust Fund	Enhanced protection for evacuation route	\$10 mil	2030	Medium	SIP	SP
2020-OceanCity-009 (Former OC-16)	Third Ward Drainage Improvements	Problem: The Third Ward of Ocean City experiences nuisance tidal and stormwater flooding owing to drainage patterns and low elevations. The neighborhood has not yet received comprehensive drainage improvements that have been undertaken for other sections of the City. Solution: Road elevation, consolidation of the Drainage Systems and Construction of pump stations on Haven Ave. between 9th St. and 26th St.; and Simpson Ave. between 9th Street and 26th Street.	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather	1, 3, 6	Operations & Engineering Department	Ocean City Capital Plan; BRIC; HMGP	Enhanced drainage capabilities/mitigated stormwater issues	\$10 mil	2021	High	SIP	SP
2020-OceanCity-010 (Former	Firewise Participation	Problem: Approximately one-third of Ocean City's population and structures are in the WUI Interface/Intermix Zone. This represents more than 4,000 people, nearly	Existing	Wildfire	1, 2, 3, 4, 6	Local Fire Chiefs working with County Fire	Ocean City operating budget	Enhanced fire protection	\$50k	2021	Medium	EAP	PR PI



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
OC-17)		6,500 structures, and \$4.7 billion in RCV. The City has identified a need to enhance public outreach relating to wildfire risk in the Township. Solution: The City seeks a status as a Firewise community through the facilitation of public outreach/awareness projects and fire risk reduction activities.				Coordinator and identified residents		capabilities					
2020-OceanCity-011 (Former OC-18)	South End Oceanfront Bulkhead Replacement	Problem: The South End of Ocean City is partially protected by a wooden bulkhead that runs along Central Avenue from 57 th Street south. The oceanward side of the bulkhead is protected by a vegetated dune and the landward side of the bulkhead includes parking spaces, a road, and residential homes. The bulkhead is deteriorated and undersized. The South End is vulnerable to coastal erosion and waves overtopping dunes. Solution: The City proposes to elevate and replacement the South End bulkhead with a higher bulkhead built of sturdier materials. The bulkhead will provide an enhanced level of protection.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion	1, 3, 4, 6	Operations & Engineering Department	BRIC; HMGP; US Army Corps; NJDEP Shore Protection Fund	Enhanced protection of South End from wave damage	\$30 mil	2030	Medium	SIP	SP
2020-OceanCity-012 (Former OC-21)	Roosevelt Boulevard Elevation (2020-CapeMayCounty-020)	Problem: Roosevelt Boulevard (CR-623) is a major access road and evacuation route between Ocean City and the mainland. The road sees average daily traffic of between 10,000 and 25,000 vehicles depending on the season. The Boulevard sees flooding beginning at water levels that are two feet above high tide. Solution: Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	County Engineering	HMA grants; County funds; local match	High	\$15 mil	2026	Medium	SIP	PP
2020-OceanCity-013 (Former OC-22)	Merion Park Bulkheading	Problem: Merion Park is a neighborhood in Ocean City encompassing more than 70 acres of land, 545 properties, and more than 500 buildings worth more than \$109 million in assessed value. The neighborhood is among the City's lowest lying, with street	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate	1, 3, 6	Operations & Engineering Department	Ocean City Capital Plan; BRIC; FMA	Enhanced protection of neighborhood	\$30 mil	2030	Medium	SIP	SP



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		<p>flooding observed in typical storm events and flooding observable when tide levels are less than one foot above typical high tides. The neighborhood lacks bulkheading in several sections, allowing for flood waters to inundate the neighborhood and cause flooding.</p> <p>Solution: Bulkhead Merion Park, thereby closing gaps in existing flood protection and enhancing the level of protection for the neighborhood.</p>		Change and Sea Level Rise									
2020-OceanCity-014 (Former OC-23)	Elevate Merion Park	<p>Problem: Merion Park is a neighborhood in Ocean City encompassing more than 70 acres of land, 545 properties, and more than 500 buildings worth more than \$109 million in assessed value. The neighborhood is among the City's lowest lying, with street flooding observed in typical storm events and flooding observable when tide levels are less than one foot above typical high tides. The neighborhood lacks bulkheading in several sections, allowing for flood waters to inundate the neighborhood and cause flooding. In addition to low-lying streets and lack of bulkheads, the neighborhoods overall elevation is low, including private yards and homes. Nearly half of the properties in the neighborhood are owned by year-round residents – one of the highest proportions in the City.</p> <p>Solution: The City proposes to elevate low-lying streets and yards in Merion Park to assist with drainage and mitigate flooding.</p>	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 6	Operations & Engineering Department	Ocean City capital plan funding and/or hazard mitigation funding	Enhanced protection of neighborhood	\$10 mil	2022	High	SIP	SP
2020-OceanCity-015 (Former OC-24)	Ocean City Homes Bulkheading	<p>Problem: Ocean City Homes is a neighborhood of approximately 450 residential structures located at the South End of Ocean City. The neighborhood was built on filled marsh in the mid-twentieth century and is generally low-lying. Assessed structures in the neighborhood total more than \$77 million. Ocean City Homes lacks</p>	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and	1, 3, 6	Operations & Engineering Department	Ocean City capital plan funding and/or hazard mitigation funding	Protection of Ocean City Homes neighborhood	\$30 mil	2024	Medium	SIP	SP



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		bulkheads in most of the neighborhood and there are no structural flood protection measures besides the fill and oceanfront dunes and bulkheads. Solution: In order to mitigate back bay flooding in Ocean City homes, the City proposes a comprehensive bulkhead/floodwall to provide protection for the neighborhood as well as an appurtenant pump station to pump out excess floodwater.		Sea Level Rise				from flooding					
2020-OceanCity-016 (Former OC-25)	Ocean City Homes Elevation	Problem: Ocean City Homes is a neighborhood of approximately 450 residential structures located at the South End of Ocean City. The neighborhood was built on filled marsh in the mid-twentieth century and is generally low-lying. Assessed structures in the neighborhood total more than \$77 million. Numerous sections of the neighborhood are at a particularly low elevation, including 52 nd , 53 rd , 54 th , and 55 th Streets. Solution: The City proposes to elevate portions of the Ocean City Homes neighborhood, including streets and yards, to facilitate drainage and prevent flooding.	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 6	Operations & Engineering Department working with property owners	Ocean City capital plan funding and/or hazard mitigation funding	Protection of Ocean City Homes neighborhood from flooding	\$10 mil	2024	Medium	SIP	SP
2020-OceanCity-017 (Former OC-20)	Route 152 Hardening	Problem: Ocean Drive/CR-656 is an evacuation route for the Gardens and the northern portion of Ocean City. The Ocean Drive bridge crosses the Great Egg Harbor Inlet into Egg Harbor Township, where it intersects with Route 152 and continues inland to Somers Point and eastward into Longport and Seaview Harbor. While the Ocean City section of roadway is on high ground, the portion in Atlantic County is at a low elevation that is subject to flooding and coastal erosion. Land on the south side of Ocean Drive has steadily eroded over the past few decades, with portions of the	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion	1, 3, 4, 6	Atlantic County; NJ Department of Transportation; Cape May County; NJDEP; Egg Harbor Township	Transportation Trust Fund; BRIC; County funds; local match	Protection of key evacuation route for the City	TBD	TBD	Medium	SIP	PP



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		roadbed now exposed and only protected by rip-rap. Solution: The City proposes a Route 152 Shore Protection and Elevation project that provides a higher degree of protection to the evacuation route and arrests the erosion issue.											
2020-OceanCity-018	Disaster Debris Management Plan	Problem: The City lacks a debris management plan. Solution: The City will develop a vegetation management program.	N/A	All Hazards	4, 6	Administration/DPW	Municipal budget	Plan in place for debris management	Staff time	1 year	High	LPR	ES
2020-OceanCity-019	Ocean City First Responder Building Consolidation	Problem: The City's existing police/court building and fire department are both located in outdated, floodprone facilities. Solution: The City proposes to consolidate the Police Department, Fire Department, emergency operations center, 9-1-1 center in a single facility located at the site of the current firehouse located between West and Asbury Avenues between Fifth and Sixth Streets.	New	All Hazards	1, 3, 4, 6	Ocean City Police Department, Fire Department, Emergency Management	Ocean City Capital Plan; BRIC	New and floodproofed facilities for emergency services	\$35 million	2 years	High	SIP	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

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




- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.9-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2020-OceanCity-001	South End Flood Protection	1	1	0	1	1	1	-1	0	1	1	1	1	1	1	10	High 
2020-OceanCity-002	Recreation Facility Mitigation	1	1	0	1	1	1	-1	0	1	1	1	1	1	1	10	High
2020-OceanCity-003	Music Pier Wave Mitigation	1	1	0	1	1	0	-1	0	1	1	1	0	1	1	8	Medium
2020-OceanCity-004	West 17 th Street Improvements	1	1	0	1	1	1	-1	0	1	1	1	1	1	1	10	High
2020-OceanCity-005	Ocean City Outfall Consolidation	1	0	0	1	1	1	-1	0	1	1	1	1	1	1	10	High
2020-OceanCity-006	Ocean City Stormwater Management Upgrades	1	0	0	1	1	1	-1	0	1	1	1	0	1	1	8	Medium
2020-OceanCity-007	Property Acquisition	1	1	1	1	1	1	-1	1	1	1	1	1	1	1	12	High
2020-OceanCity-008	CR-619 Mitigation	1	0	1	1	1	1	-1	0	1	0	1	0	1	1	8	Medium
2020-OceanCity-009	Third Ward Drainage Improvements	1	0	0	1	1	1	-1	0	1	1	1	1	1	1	9	High
2020-OceanCity-010	Firewise Participation	1	1	1	1	1	1	-1	0	1	1	1	0	1	1	10	Medium
2020-OceanCity-011	South End Oceanfront Bulkhead Replacement	1	1	0	1	1	1	-1	0	1	0	1	0	1	1	8	Medium
2020-OceanCity-012	Roosevelt Boulevard Elevation	1	0	1	1	1	1	-1	0	1	0	1	0	1	1	8	Medium
2020-OceanCity-013	Merion Park Bulkheading	1	1	1	1	1	1	-1	-1	1	0	1	0	1	1	8	Medium
2020-OceanCity-014	Elevate Merion Park	1	1	0	1	1	1	-1	0	1	1	1	1	1	1	10	High
2020-OceanCity-015	Ocean City Homes Bulkheading	1	1	1	1	1	1	-1	-1	1	0	1	0	1	1	8	Medium
2020-OceanCity-016	Ocean City Homes Elevation	1	1	0	0	1	1	-1	0	1	1	0	1	1	1	8	Medium
2020-OceanCity-017	Route 152 Hardening	1	0	0	1	1	1	-1	0	1	0	1	0	1	1	7	Medium
2020-OceanCity-018	Disaster Debris Management Plan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High



Initiative Number	Mitigation Initiative Name																High / Medium / Low
		Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	
2020-OceanCity-019	First Responder Building Consolidation	1	1	1	1	1	1	-1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.
Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.9-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and SLR		X			X	X		
Coastal Erosion		X			X	X		
Disease Outbreak					X			
Drought					X			
Flood		X			X	X		
Hurricane		X			X	X		
Nor'Easter		X			X	X		
Severe Weather		X			X	X		
Severe Winter Weather					X			
Tsunami					X			
Wildfire	X		X		X			

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.9-1. City of Ocean City Hazard Area Extent and Location Map 1

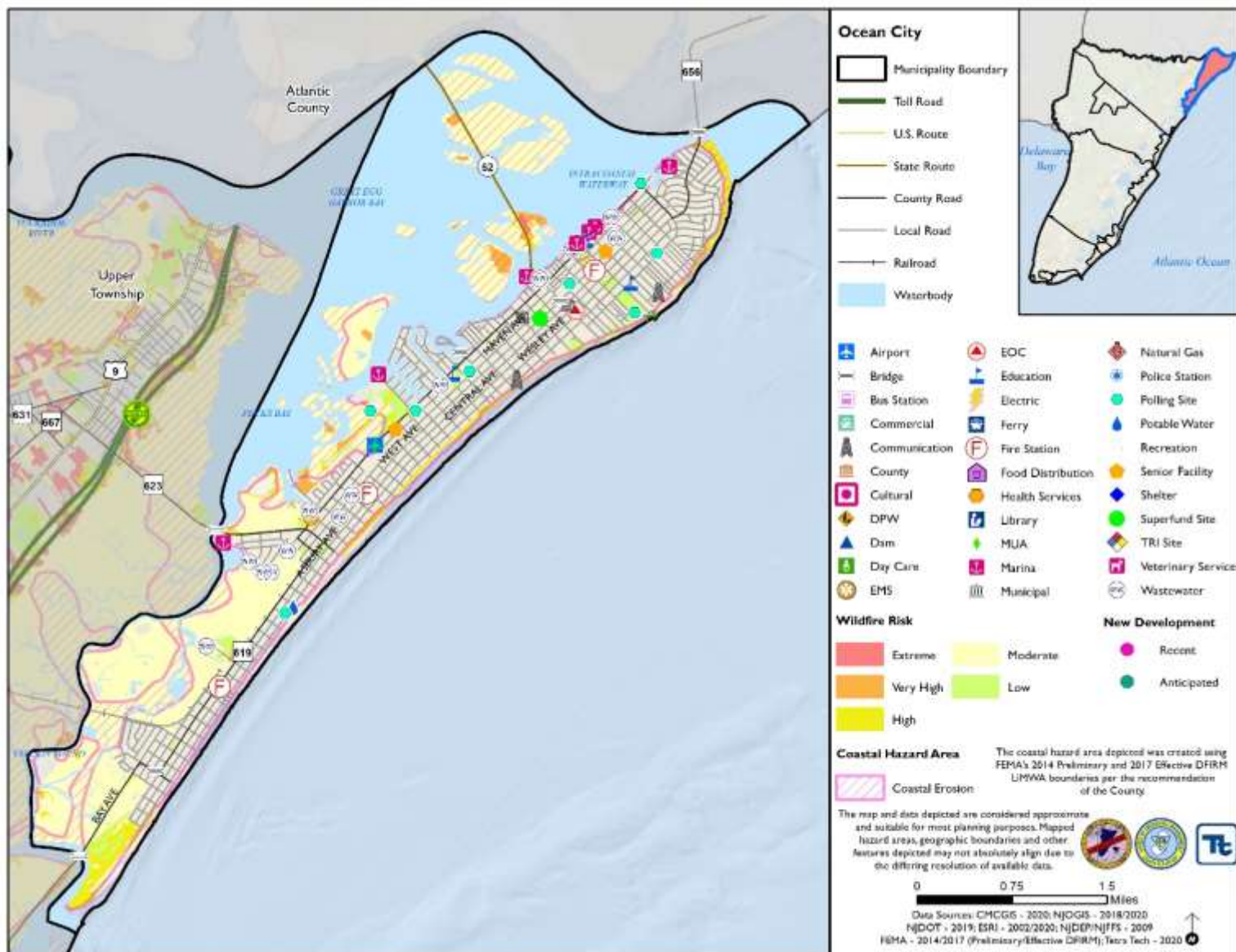




Figure 9.9-2. City of Ocean City Hazard Area Extent and Location Map 2

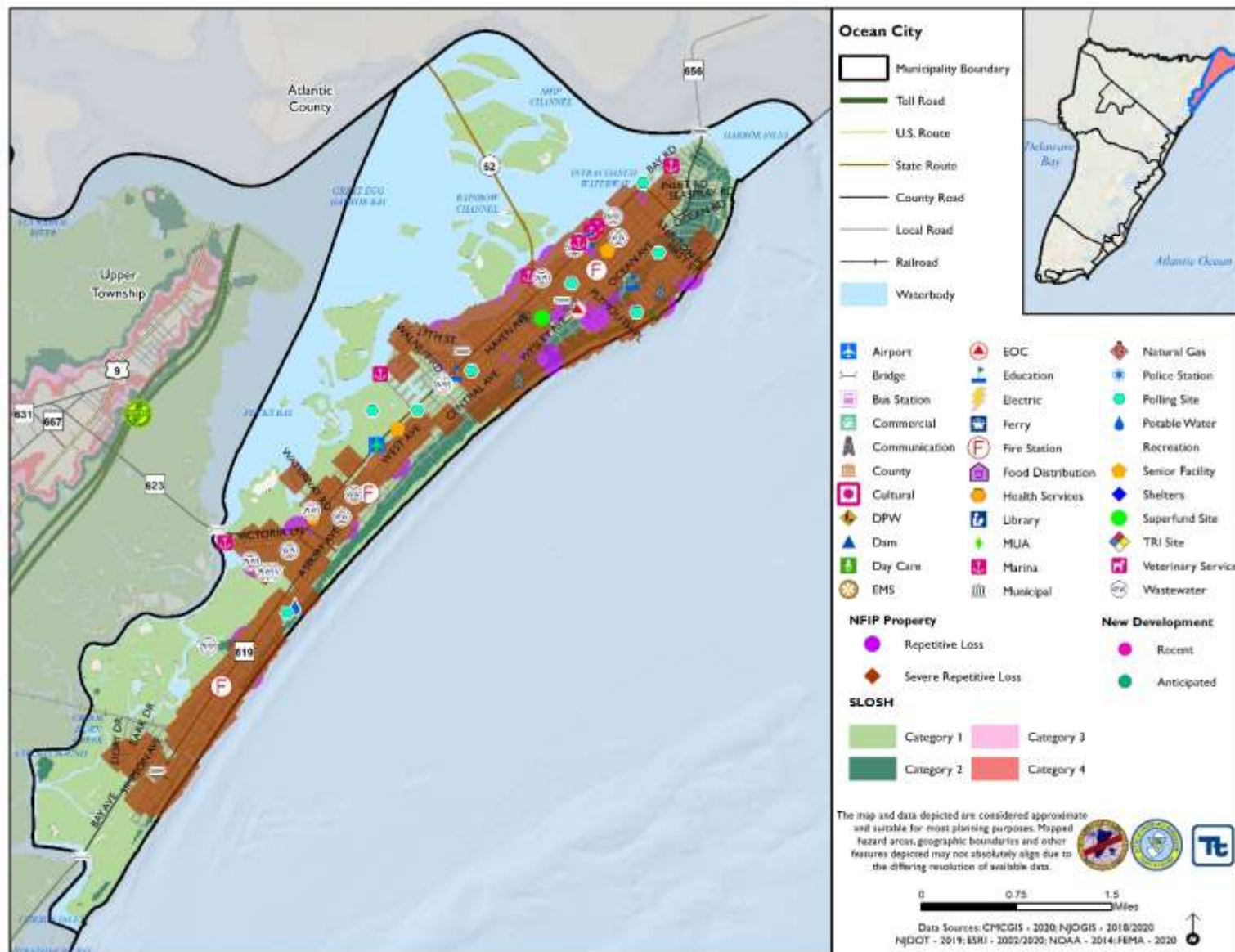
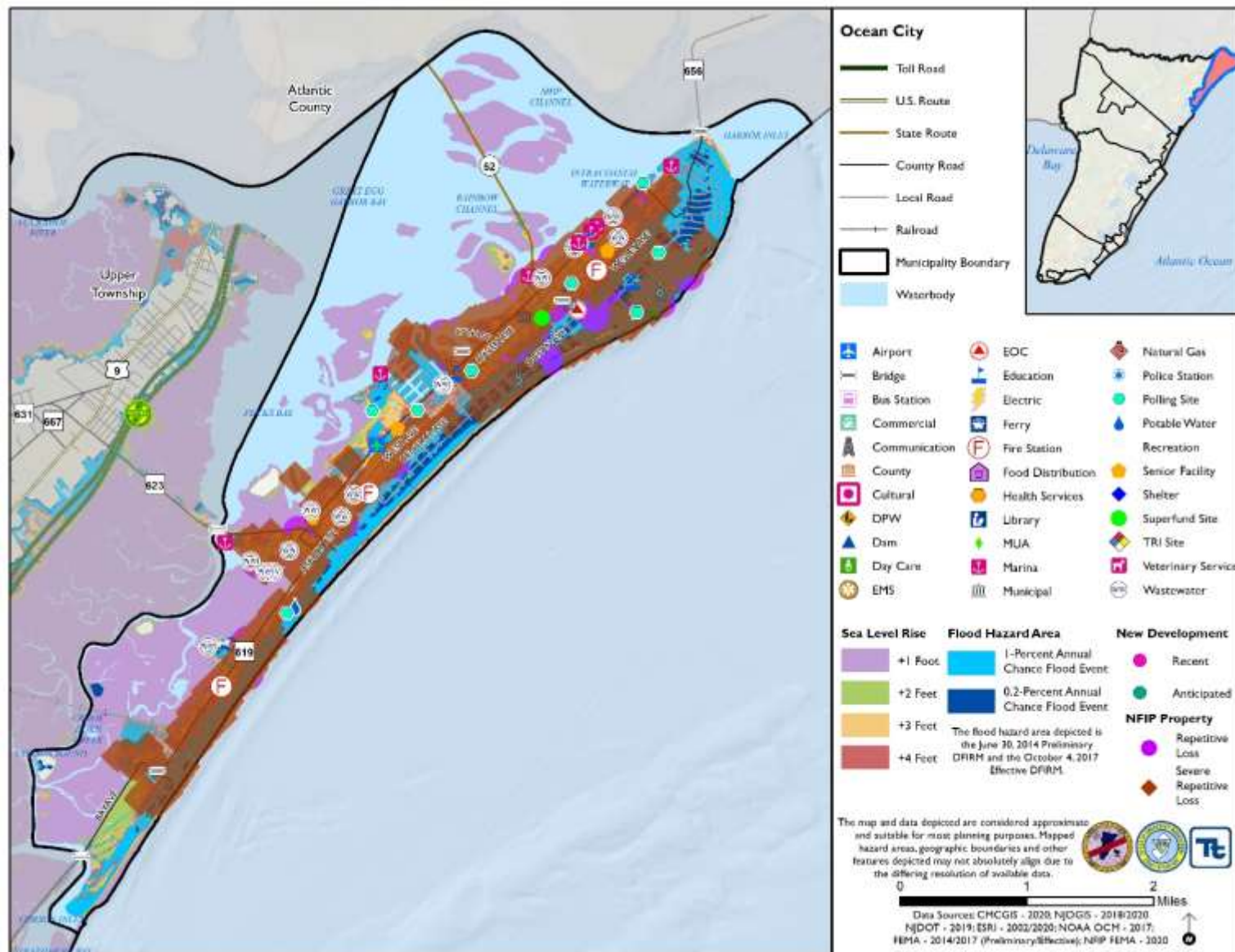


Figure 9.9-3. City of Ocean City Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	2020-OceanCity-001		
Project Number:	South End Flood Protection		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise		
Description of the Problem:	West Avenue in Ocean City is located at a low elevation. Inundation of West Avenue begins at water levels that are just two feet above the typical high tide. Currently there are no structural protective measures in place preventing floodwaters from inundating West Avenue and moving inland into Ocean City.		
Action or Project Intended for Implementation			
Description of the Solution:	Bulkhead/Barrier along West Ave. from 36th to 52nd Street and install pump station to encumber Asbury Ave. to marsh and elevate roads.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Protection of large low-lying sections of the City's South End
Useful Life:	30 years	Goals Met:	1, 3, 6
Estimated Cost:	\$10 mil	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2025
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Ocean City capital plan funding and/or hazard mitigation funding
Responsible Organization:	Operations & Engineering Department, working with property owners and County	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Road elevation	High	Does not mitigate inundation/erosion issue
	Bulkhead project	High	mitigates flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-001	
Project Number:	South End Flood Protection	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	1	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support.
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Multiple flooding types mitigated
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-002		
Project Number:	Recreation Facility Mitigation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise		
Description of the Problem:	Some of Ocean City's recreation and open space facilities are located at low elevations. For example, the Grimes Field facility at Sixth Street begins experiencing flooding when flood levels are just one foot above typical high tides. This leads to acute drainage issues and hampers the ability of the City to use the publicly-owned land for staging and recovery during emergency situations.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to elevate certain recreational facilities (inclusive of the Tennessee Avenue Complex and Grimes Field at 6th and Bay Avenue) to provide local areas of high ground refuge during flooding events.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Localized and accessible areas of higher ground during flooding
Useful Life:	N/A	Goals Met:	1, 3, 6
Estimated Cost:	\$3.5 mil	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2021
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	Ocean City capital plan funding
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Flood wall	High	Cost too high for facility
	Property elevation	Medium	mitigates flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-002	
Project Number:	Recreation Facility Mitigation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project will protect the Recreation Facility.
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project.
Fiscal	-1	Project requires funding support.
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-003		
Project Number:	Music Pier Wave Mitigation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion		
Description of the Problem:	The Ocean City Music Pier, located on the boardwalk, is a major destination in Ocean City as well as a building eligible for listing on the State Register of Historic Places. The Music Pier is located within the VE Zone and is highly vulnerable to coastal erosion and wave action. The historic structure is located on concrete pilings that extend into the surf.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to expand the deck around the Music Pier and provide wave attenuating measures to protect the Music Pier, Boardwalk, and landward properties. This would mitigate wave action and erosive forces.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Protection of a historic structure and surrounding infrastructure
Useful Life:	TBD	Goals Met:	1, 3, 6
Estimated Cost:	\$5 mil	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2030
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	US Army Corps; BRIC; Shore Protection Fund; Local match
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Facility relocation	High	Not feasible
	Wave attenuation	High	Mitigates wave damage
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-003	
Project Number:	Music Pier Wave Mitigation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project will protect Music Pier
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	0	Project will likely require permitting approval from NJ DEP
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-004		
Project Number:	West 17th Street Improvements		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise		
Description of the Problem:	West 17th Street is a 10-acre section of the City's waterfront Riviera neighborhood that is home to approximately 250 residential properties valued at \$32.1 million in structure value. The neighborhood was one of the City's first waterfront neighborhoods and was built from fill. The neighborhood is very low-lying and begins experiencing tidal flooding impacts when tide levels are just one foot above typical high tides.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to elevate street and install higher bulkheads and a pump station to discharge stormwater and mitigate nuisance flooding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced protection of neighborhood.
Useful Life:	30 years	Goals Met:	1, 3, 6
Estimated Cost:	\$5 mil	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2022
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Ocean City capital plan funding and/or hazard mitigation funding
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Individual structure elevation	High (property owner)	Does not address inundation
	Bulkhead/pump station	High	Consistent protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-004	
Project Number:	West 17th Street Improvements	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	1	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-005		
Project Number:	Ocean City Outfall Consolidation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather		
Description of the Problem:	Ocean City has a number of outfall structures that carry stormwater from streets and properties to both the Ocean and bay. The utility of the outfalls has decreased as sediment has accumulated and caused backups at numerous outfalls. This inhibits stormwater drainage, causing upland impacts.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to consolidate existing outfalls and remove surplus outfalls as identified by the Operations and Engineering Department.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced drainage for neighborhoods in the City
Useful Life:	50 years	Goals Met:	1, 3, 6
Estimated Cost:	\$3 mil	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2022
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Ocean City Capital Plan and NJ DEP Coastal Engineering
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Drainage enhancements/onsite detention	High	Too costly
	Outfall consolidation	Medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-005	
Project Number:	Ocean City Outfall Consolidation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-006		
Project Number:	Ocean City Stormwater Management Upgrades		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather		
Description of the Problem:	Ocean City's drainage systems have historically been designed to handle the two-year stormwater event. The City has replaced the system in some areas, though a number of sections of the City continue to have undersized stormwater systems.		
Action or Project Intended for Implementation			
Description of the Solution:	Enhance and upgrade Ocean City's stormwater system capabilities to handle more intense storms.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced drainage for neighborhoods in the City
Useful Life:	50 years	Goals Met:	1, 3, 6
Estimated Cost:	\$1 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2021
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Ocean City Capital Plan
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Drainage enhancements/onsite detention	High	Too costly- private property
	Capacity enhancements	Medium	Alleviates stormwater flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-006	
Project Number:	Ocean City Stormwater Management Upgrades	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Multiple flooding types mitigated
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-007		
Project Number:	Property Acquisition		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; 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.		
Action or Project Intended for Implementation			
Description of the Solution:	Where appropriate, the City proposes to acquire properties in low-lying areas where structural flood protection is not feasible.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Foregone damage to structures from flooding; ecosystem enhancements
Useful Life:	N/A	Goals Met:	1, 3, 5, 6
Estimated Cost:	\$20 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2021
Estimated Time Required for Project Implementation:	1.5 years	Potential Funding Sources:	FMA; HMGP; Local match; Blue Acres
Responsible Organization:	Ocean City OEM and Floodplain Administrator	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Continue development	Low	additional risk
	Acquisition	medium	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-007	
Project Number:	Property Acquisition	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will remove families from high flood risk
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	1	Natural floodplain functions
Social	1	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-008		
Project Number:	CR-619 Mitigation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion		
Description of the Problem:	CR-619 is an evacuation route for the Upper Township neighborhood of Strathmere and provides access to Corson's Inlet State Park. The road is vulnerable to coastal erosion and flooding near the Corsons Inlet bridge.		
Action or Project Intended for Implementation			
Description of the Solution:	Upgrade existing revetment wall (needs to be extended to the south and existing sections upgraded) and provide additional road protection to CR-619 in Strathmere to Ocean City and elevate sections of road as needed.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced protection for evacuation route
Useful Life:	20 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	\$10 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2030
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Local match; BRIC; HMGP; County funds; Transportation Trust Fund
Responsible Organization:	Operations & Engineering Department and Cape May County Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	County CIP
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Road abandonment	Low	not feasible due to access need
	Wall upgrade	high	Arrests erosion
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-008	
Project Number:	CR-619 Mitigation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-009		
Project Number:	Third Ward Drainage Improvements		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Severe Weather		
Description of the Problem:	The Third Ward of Ocean City experiences nuisance tidal and stormwater flooding owing to drainage patterns and low elevations. The neighborhood has not yet received comprehensive drainage improvements that have been undertaken for other sections of the City.		
Action or Project Intended for Implementation			
Description of the Solution:	Road elevation, consolidation of the Drainage Systems and Construction of pump stations on Haven Ave. between 9th St. and 26th St.; and Simpson Ave. between 9th Street and 26th Street.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced drainage capabilities/mitigated stormwater issues
Useful Life:	50 years	Goals Met:	1, 3, 6
Estimated Cost:	\$10 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2021
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	Ocean City Capital Plan; BRIC; HMGP
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Road elevation	Low	does not address drainage
	Drainage system consolidation	High	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-009	
Project Number:	Third Ward Drainage Improvements	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Multiple flooding types mitigated
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-011		
Project Number:	South End Oceanfront Bulkhead Replacement		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change/Sea Level Rise; Coastal Erosion		
Description of the Problem:	The South End of Ocean City is partially protected by a wooden bulkhead that runs along Central Avenue from 57th Street south. The oceanward side of the bulkhead is protected by a vegetated dune and the landward side of the bulkhead includes parking spaces, a road, and residential homes. The bulkhead is deteriorated and undersized. The South End is vulnerable to coastal erosion and waves overtopping dunes.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to elevate and replacement the South End bulkhead with a higher bulkhead built of sturdier materials. The bulkhead will provide an enhanced level of protection.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Enhanced protection of South End from wave damage
Useful Life:	50 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	\$30 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2030
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	BRIC; HMGP; US Army Corps; NJDEP Shore Protection Fund
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Bulkhead removal	Low	Loss of protection
	Bulkhead elevation	Medium	Enhanced protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-011	
Project Number:	South End Oceanfront Bulkhead Replacement	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	0	
Multi-Hazard	1	Multiple flooding types mitigated
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-012		
Project Number:	Roosevelt Boulevard Elevation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Roosevelt Boulevard (CR-623) is a major access road and evacuation route between Ocean City and the mainland. The road sees average daily traffic of between 10,000 and 25,000 vehicles depending on the season. The Boulevard sees flooding beginning at water levels that are two feet above high tide.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	\$15 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2026
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	HMA grants; County funds; local match
Responsible Organization:	County Engineering	Local Planning Mechanisms to be Used in Implementation if any:	County CIP
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Road abandonment	Low	Not feasible-loss of access
	Road elevation	High	Enhanced access during flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-012	
Project Number:	Roosevelt Boulevard Elevation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	The project requires funding support
Environmental	0	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-013		
Project Number:	Merion Park Bulkheading		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Merion Park is a neighborhood in Ocean City encompassing more than 70 acres of land, 545 properties, and more than 500 buildings worth more than \$109 million in assessed value. The neighborhood is among the City's lowest lying, with street flooding observed in typical storm events and flooding observable when tide levels are less than one foot above typical high tides. The neighborhood lacks bulkheading in several sections, allowing for flood waters to inundate the neighborhood and cause flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Bulkhead Merion Park, thereby closing gaps in existing flood protection and enhancing the level of protection for the neighborhood.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Enhanced protection of neighborhood
Useful Life:	50 years	Goals Met:	1, 3, 6
Estimated Cost:	\$30 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2030
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Ocean City Capital Plan; BRIC; FMA
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Continue drainage enhancements	Medium	Will not mitigate floodnig
	Install bulkhead	High	Mitigate inundaton risk
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-013	
Project Number:	Merion Park Bulkheading	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	-1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-014		
Project Number:	Elevate Merion Park		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Merion Park is a neighborhood in Ocean City encompassing more than 70 acres of land, 545 properties, and more than 500 buildings worth more than \$109 million in assessed value. The neighborhood is among the City's lowest lying, with street flooding observed in typical storm events and flooding observable when tide levels are less than one foot above typical high tides. The neighborhood lacks bulkheading in several sections, allowing for flood waters to inundate the neighborhood and cause flooding. In addition to low-lying streets and lack of bulkheads, the neighborhoods overall elevation is low, including private yards and homes. Nearly half of the properties in the neighborhood are owned by year-round residents – one of the highest proportions in the City.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to elevate low-lying streets and yards in Merion Park to assist with drainage and mitigate flooding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced protection of neighborhood
Useful Life:	40 years	Goals Met:	1, 3, 6
Estimated Cost:	\$10 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2022
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	Ocean City capital plan funding and/or hazard mitigation funding
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Continue drainage enhancements	Medium	Does not address vulnerability
	Low-lying fill	High	Continued protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-014	
Project Number:	Elevate Merion Park	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	1	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-OceanCity-015		
Project Number:	Ocean City Homes Bulkheading		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Ocean City Homes is a neighborhood of approximately 450 residential structures located at the South End of Ocean City. The neighborhood was built on filled marsh in the mid-twentieth century and is generally low-lying. Assessed structures in the neighborhood total more than \$77 million. Ocean City Homes lacks bulkheads in most of the neighborhood and there are no structural flood protection measures besides the fill and oceanfront dunes and bulkheads.		
Action or Project Intended for Implementation			
Description of the Solution:	In order to mitigate back bay flooding in Ocean City homes, the City proposes a comprehensive bulkhead/floodwall to provide protection for the neighborhood as well as an appurtenant pump station to pump out excess floodwater.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	Protection of Ocean City Homes neighborhood from flooding
Useful Life:	30 years	Goals Met:	1, 3, 6
Estimated Cost:	\$30 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2024
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	Ocean City capital plan funding and/or hazard mitigation funding
Responsible Organization:	Operations & Engineering Department	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Continue drainage enhancements	Medium	Will not mitigate floodnig
	Install bulkhead	High	Mitigate inundaton risk
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-015	
Project Number:	Ocean City Homes Bulkheading	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	The City has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	-1	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-016		
Project Number:	Ocean City Homes Elevation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Ocean City Homes is a neighborhood of approximately 450 residential structures located at the South End of Ocean City. The neighborhood was built on filled marsh in the mid-twentieth century and is generally low-lying. Assessed structures in the neighborhood total more than \$77 million. Numerous sections of the neighborhood are at a particularly low elevation, including 52nd, 53rd, 54th, and 55th Streets.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to elevate portions of the Ocean City Homes neighborhood, including streets and yards, to facilitate drainage and prevent flooding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Protection of Ocean City Homes neighborhood from flooding
Useful Life:	50 years	Goals Met:	1, 3, 6
Estimated Cost:	\$10 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2024
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	Ocean City capital plan funding and/or hazard mitigation funding
Responsible Organization:	Operations & Engineering Department working with property owners	Local Planning Mechanisms to be Used in Implementation if any:	Flood Mitigation Plan; Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Continue drainage enhancements	Medium	Does not address vulnerability
	Low-lying fill	High	Continued protection
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-016	
Project Number:	Ocean City Homes Elevation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	1	Project will protect properties from flooding
Cost-Effectiveness	0	
Technical	0	
Political	1	Political support for mitigation exists
Legal	1	
Fiscal	-1	The project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	0	
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-017		
Project Number:	Route 152 Hardening		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion		
Description of the Problem:	Ocean Drive/CR-656 is an evacuation route for the Gardens and the northern portion of Ocean City. The Ocean Drive bridge crosses the Great Egg Harbor Inlet into Egg Harbor Township, where it intersects with Route 152 and continues inland to Somers Point and eastward into Longport and Seaview Harbor. While the Ocean City section of roadway is on high ground, the portion in Atlantic County is at a low elevation that is subject to flooding and coastal erosion. Land on the south side of Ocean Drive has steadily eroded over the past few decades, with portions of the roadbed now exposed and only protected by rip-rap.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes a Route 152 Shore Protection and Elevation project that provides a higher degree of protection to the evacuation route and arrests the erosion issue.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Protection of key evacuation route for the City
Useful Life:	50 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	TBD	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	5 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Transportation Trust Fund; BRIC; County funds; local match
Responsible Organization:	Atlantic County; NJ Department of Transportation; Cape May County; NJDEP; Egg Harbor Township	Local Planning Mechanisms to be Used in Implementation if any:	Atlantic County CIP
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Does not mitigate flooding
	Road elevation	Medium	Does not address erosion threat
	Erosion project	High	continued road functionality
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-017	
Project Number:	Route 152 Hardening	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would mitigate flooding and enhance emergency response
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Coastal Erosion
Timeline	0	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2020-OceanCity-019		
Project Number:	Ocean City First Responder Building Consolidation		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
Description of the Problem:	The City's existing police/court building and fire department are both located in outdated, floodprone facilities.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to consolidate the Police Department, Fire Department, emergency operations center, 9-1-1 center in a single facility located at the site of the current firehouse located between West and Asbury Avenues between Fifth and Sixth Streets.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500 year	Estimated Benefits (losses avoided):	New and floodproofed facilities for emergency services
Useful Life:	60 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	TBD	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2023
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	Ocean City Capital Plan; BRIC
Responsible Organization:	Ocean City Police Department, Fire Department, Emergency Management	Local Planning Mechanisms to be Used in Implementation if any:	Ocean City Capital Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Facilities are vulnerable
	Floodproof separate facilities	High	Cost prohibitive/inefficient
	Facility consolidaton/Floodproofing	High	Enhanced operations
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-OceanCity-019	
Project Number:	Ocean City First Responder Building Consolidation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project would enhance emergency response
Property Protection	1	New facility will be mitigated
Cost-Effectiveness	1	
Technical	1	
Political	1	Political support for mitigation exists
Legal	1	
Fiscal	-1	Project requires funding support
Environmental	1	
Social	1	Project will protect residents and visitors to the City
Administrative	1	
Multi-Hazard	1	All hazards addressed with new EOC and first responder facility consolidation
Timeline	1	
Agency Champion	1	City support is strong
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



9.10 CITY OF SEA ISLE CITY

This section presents the jurisdictional annex for the City of Sea Isle City. The annex includes a general overview of the City of Sea Isle City; an assessment of the City of Sea Isle City's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.10.1 Staff and Local Stakeholder Involvement in Annex Development

The City of Sea Isle City followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.10-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Michael A. Jargowsky, OEM Coordinator Address: 233 JFK Blvd, Sea Isle City, NJ 08243 Phone Number: 609 425 4371 Email: maj21@comcast.net		Name / Title: Thomas J. D'Intino, OEM Dep Coordinator Address: 233 JFK Blvd, Sea Isle City, NJ 08243 Phone Number: 609 425 4490 Email: tdintino@police.seaislecitynj.us
NFIP Floodplain Administrator		
Name / Title: Cornelius R. Byrne, Construction Official Address: 233 JFK Blvd Sea Isle City, NJ 08243 Phone Number: 609 263 1166 #4 Email: nbyrne@seaislecitynj.us		
Name	Title	Method of Participation
Michael A. Jargowsky	OEM Coordinator	Primary point of contact, annex development; meeting participation, took stakeholder survey, reviewed and signed off on annex
Neil Byrne	Construction Official	Annex assistance, NFIP floodplain administrator
Thomas J. D'Intino	OEM Deputy Coordinator	Alternate Point of Contact
Andrew Previti	City Engineer	Mitigation project development for annex
Thomas McQuillen	Chief of Police	Took stakeholder survey

9.10.2 Jurisdiction Profile

Sea Isle City is a beachfront barrier island community located on Ludlam's Island between Strathmere in Upper Township and Avalon on Seven Mile Island. Sea Isle City boasts five miles of public beach, unparalleled access to the Intracoastal Waterway and back bay marsh ecosystems, a beachfront promenade, and many cultural civic amenities for year-round residents, seasonal visitors, and second-home owners. Sea Isle City is predominantly residential and features vibrant commercial districts and nightlife options.



According to the U.S. Census, the 2010 population for the City of Sea Isle City was 2,114. The estimated 2017 population was 1,955, a 7.5 percent decrease from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 1.3 percent of the population is 5 years of age or younger and 45.5 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.10.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.10-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.10-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.10-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	83	83	72	72	67	67	64	64	93	93
Multi-Family	0	0	0	0	0	0	0	0	0	0
Other (commercial, mixed-use, etc.)	19	19	3	3	25	25	15	15	10	10
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
None identified										
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
Rec Center- not officially a shelter—will need generator	Municipal		1		4501 Park Road		SFHA		Under construction	
Lacosta Hotel	Commercial		Mixed Use/Events/Residential		4000 Landis Avenue		SFHA		Under construction	

* Only location-specific hazard zones or vulnerabilities identified.

9.10.4 Capability Assessment

The City of Sea Isle City performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.



- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.10.4). The City of Sea Isle City identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.10-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Building and Housing, Chapter 10, adopted by the City Council in 1994 and amended through 2019. There is hereby established in the City of Sea Isle City a State Uniform Construction Code enforcing agency to be known as the Construction Office headed by the Building Official of the City, who shall be the Building Subcode Official and Construction Official and who has heretofore been known as the Construction Official of the City.The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code. Would the City like to revise the Building Code to include additional hazard related mitigation measures? It is a continuing process through the CRS to update to the highest standards.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Zoning, Chapter 26, adopted by the City Council. Whereas the Governing Body of the City deem it necessary to the promotion of the health, safety, morals and the general welfare of the City, to regulate therein the use and the size and location of buildings, and the size and locations of yards and other open space in relation to buildings, the districts are hereby created wherein the regulations contained in this Chapter shall hereafter govern.This Chapter contains comprehensive flood protections requirements for regulated structures and stormwater management.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development. except that subdivision or individual lot applications for detached one					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<i>or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.</i>					
<ul style="list-style-type: none"><i>Land Subdivision, Chapter 32, adopted by the City Council in 1976 and amended subsequently. The purpose of this chapter shall be to provide rules, regulations and standards to guide land subdivision in the City in order to promote the public health, safety, convenience and general welfare of the City. It shall be administered to ensure orderly growth and development; the conservation, protection and proper use of land; and adequate provision for circulation, utilities and services.</i><i>This Chapter contains standard requirements for stormwater controls including that provisions shall be made and shown on a set of plans accompanying the preliminary plat for collection and conveyance of stormwater on, and as required off-site, and for proper connection with an approved system. The Chapter also addresses flood hazards to a limited extent. The City has installed a pumping station to remove storm water from residential areas. The City would like to add additional pumping stations in other low-lying areas to address this problem as well.</i>					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"><i>See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8</i><i>Sewer and Water, Chapter 16, adopted by the City Council in 1976 and subsequently amended. In addition to controls on sanitary sewer discharges and potable water use, he purpose of this section is to prohibit the spilling, dumping, or disposal of materials other than stormwater to the municipal separate storm sewer system (MS4) operated by the City of Sea Isle City, so as to protect public health, safety and welfare, and to prescribe penalties for failure to comply.</i><i>The spilling, dumping, or disposal of materials other than stormwater to the municipal separate storm sewer system operated by the City of Sea Isle City is prohibited. The spilling, dumping, or disposal of materials other than stormwater in such a manner as to cause the discharge of pollutants to the municipal separate storm sewer is also prohibited.</i><i>Stormwater Management is addressed in more detail in the City's Zoning Code, Chapter 26.</i>					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <i>N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.</i> <ul style="list-style-type: none"><i>Real Estate disclosure of flood and other hazards could become an Ordinance Requirement for transfers of title and/or a written policy for disclosing a property's Flood information. Also, providing flood insurance information for impacted properties could be an additional requirement the City may want to consider. 'To ensure that potential buyers are notified that property is in an area of special flood hazard' is a stated purpose of the City's Flood Damage Prevention Ordinance, Section 14-1.3.</i>					
Growth Management	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"><i>State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.</i>					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"><i>Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning</i>					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.</p> <ul style="list-style-type: none">Site Plan Review, Chapter 30, adopted by the City Council as amended through 2014. Applications for site plan review shall be filed with the Planning Board pursuant to the instructions hereinafter set forth. Applications shall be made upon the forms supplied by the Planning Board, which can be obtained from the Secretary of the Planning Board. All information required by the official checklist, a copy of which will be given to applicant, shall be supplied.This Chapter contains basic references and controls related to flooding and stormwater management.					
Environmental Protection	No	-	No	-	-
Comment:					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.Flood Damage Prevention, Chapter 14, adopted by the City Council in 1976 and amended through 2019. It is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.The flood hazard areas of the City are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately flood proofed, elevated or otherwise protected from flood damage also contribute to the flood loss.The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the area of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.Identified "AE" Zones shall have all construction at an elevation of 11 feet NAVD 88 which shall include Sea Isle City required freeboard, as defined herein which shall be at a minimum of one foot. Would the City be interested in making increasing the amount of freeboard as a mitigation measure that could be added to the HMP as an action? Class III already has an established requirement.					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	Yes	County and Local	No	-	-
Comment:					
Climate Change	Yes	Local	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	Federal, State & Local	No	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">Beaches, Boardwalk and Protection of Dunes, Chapter 21, adopted by the City Council in 1976 and amended through 2018. This Chapter focuses on the preservation of beach and dune areas for the protection of wildlife and as a flood mitigation measure.There shall be established protection areas within the City of Sea Isle City, pursuant to the City of Sea Isle City Beach Management Plan, for the Protection of Federally & State-Listed Species, dated March, 2011, prepared by Sea Isle City in cooperation with the NJDEP, Division of Fish and Wildlife, and the U.S. Department of the Interior, Fish and Wildlife Service.It has been clearly demonstrated that well established and protected sand dunes, together with berms, beaches and underwater slopes of suitable configuration and of proper grade and height are a durable and effective protection against damage by the ocean under storm conditions and are the natural protection of the coastal areas adjacent thereto, and the State and its subdivisions and their inhabitants have an interest in the combined protection thereof and the right to restore them in the event of damage or destruction. It is a purpose of this section to define the areas so affected and to establish regulations to assure their continued effectiveness. This section is declared to be an exercise of the police power in the interest of safety and welfare and the protection of persons and property.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Capital Plan 2020-2024, adopted by City Council on 11-26-19. This is a 5-year Capital Plan in the form of a line item budget. Funding in 2020 for hazard related improvements include, lagoon dredging, mobi-mats, street end stabilization, storm drainage improvement/correction program, and pump stations; flood mitigation(design/construct).					
Disaster Debris Management Plan	No	-	No	-	2020-SeaisleCity-007
Comment:					
Floodplain or Watershed Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Floodplain Management Plan dated June 2017. The City of Sea Isle City's past successes and future strategic planning, policy changes, programs, projects and other activities will produce a far better prepared community for coastal storms and flooding and their impacts of hazards on the City of Sea Isle City. Goals of the Plan include; reducing flood damage, including damage to life and property; reducing stormwater impacts to protect human health, safety, and property; and protecting and improving habitat and water quality to sustain native animals and plants.The plan would coordinate existing ongoing plans and programs so that high priority initiatives and projects to mitigate possible disaster impacts would be funded and implemented. The City of Sea Isle City has a history of proactive, progressive planning and program implementation and is desirous of further enhancing this history by developing this FMP.The City also has a Watershed Management Plan. It is a multi-part plan, but Watershed Management Area 16 – Master Plan, dated August, 2016 seems to be the plan most frequently referenced. The Sea Isle City Watershed Management Plan presents a strategy for mitigating the impacts of development, protecting life and property, and improving or preserving the water resources and natural habitat in the watershed management area. One of the primary goals of the Watershed Master Plan is to reduce damage to structures caused by flooding from these storms and thereby reduce the loss to property within the City. The plan also suggests potential solutions and policy changes and prioritizes a group of projects that will help improve the watershed's					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
conditions as they impact or are impacted by Sea Isle City. Would the City like to add any of the projects recommended in the Watershed Management Plan as actions in the HMP? The City would like to integrate the WMP into the HMP.					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.Stormwater Management Plan, dated March 2005. This plan contains all 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. To achieve the goals of this plan, it outlines specific stormwater design and performance standards for new development. Additionally, the plan proposes stormwater management controls to address impacts from existing development.					
Stormwater Pollution Prevention Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.Stormwater Pollution Prevention Plan, Original Plan March 31, 2005 and updated June 2020. To control stormwater from new development and redevelopment projects they are subject to the residential site improvement standards for stormwater management (including the NJDEP Stormwater Management rules, N.J.A.C. 7:8. The Plan also addresses public education, labeling of storm drains, mapping of outfalls, illicit connections, storm drain retrofitting and street sweeping and erosion control, consistent with the State's requirements.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	State & Local	No	No	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none"> Community Forestry Management Plan, 2018 – 2020, adopted by the City Council, March 13, 2018. The Community Forestry Management Plan (CFMP) of City of Sea Isle City (City) was initially created to establish programs that recognize the unique nature of the municipality's tree resources and to plan future programs that will continue to protect and enhance these resources. The City established goals and objectives compatible with the forestry planning process vision to provide community forest and tree streetscapes for the benefit of its residents and visitors in addition to the wildlife that rely on these important natural resources Examples of the City's efforts to document and steward its natural resources include: preparation and presentation of a community-wide tree survey; input during the initial stages of the City's Master Plan Rexam process; community events to highlight the importance of natural resource stewardship, including trees; tripled the number of trained staff and volunteers participating in the community forestry program; and engaged in multiple tree planting/maintenance projects with community partners. 					
Transportation Plan	Yes	State	Yes	No	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	-
Comment:					
Tourism Plan	Yes	Local	No	No	-
Comment:					
Business Development Plan	Yes	Local	No	No	-
Comment:					
Other	No	-	No	-	-
Comment: <ul style="list-style-type: none"> Flood Mitigation Study. This study is the first step in identifying specific problem areas and should be considered a planning tool. The City will use this study to develop a partnership with the County. The City will also use this study in order to integrate itself with the New Jersey Back Bays (NJBB) Flood Risk Management Study being undertaken by the U.S. Army Corps of Engineers and the New Jersey Department of Environmental Protection. RECOMMENDATIONS AND PLANS OF ACTION <ul style="list-style-type: none"> Sea Isle City should continue to implement and monitor the flood risk management measures which are in place. Sea Isle City should be actively involved in the New Jersey Back Bays Flood Risk Management Study. Sea Isle City should develop a partnership with Cape May County which would address chronic flooding issues within these Drainage Areas which are the responsibility of Cape May County. Stormwater Pump Stations should be constructed in each of those problem Drainage Areas. Funding for these pump stations should be included in Capital Fund Programs. Sea Isle City should include funding in its Five (5) Year Capital Funding Plan for the construction of a stormwater pump station to service Drainage Area, DA-23. Sea Isle City should include funding in its Five (5) Year Capital Funding Plan for the installation of check valves on all City outfall structures which do not currently have a check valve. Sea Isle City should include funding in its Five (5) Year Capital Plan for the construction of berms along areas which are adjacent to salt marshes and are in low lying areas. Cape May County should include funding in its Capital Improvement Program for the installation of check valves on all County outfall structures which do not currently have a check valve 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local and County	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. 					



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

Table 9.10-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes. Construction Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. Have inventory of residential/commercial as well as all buildable lots.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the City of Sea Isle City.

Table 9.10-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning/ Zoning
Mitigation Planning Committee	Yes	Administration
Environmental Board / Commission	Yes	Administration
Open Space Board / Committee	Yes	Administration
Economic Development Commission / Committee	Yes	Administration
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Reverse 911 through Nixle. Email alerts through the City. Facebook notifications from the Police Department. Electronic and static signage.
Maintenance program to reduce risk	Yes	All Departments
Mutual aid agreements	Yes	Administration
Technical/Staffing Capability		



Staff/Personnel Resource	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning/Zoning
Engineers or professionals trained in building or infrastructure construction practices	Yes	Administration
Planners or engineers with an understanding of natural hazards	Yes	Administration
Staff with training in benefit/cost analysis	Yes	Administration
Staff with training in green infrastructure	Yes	City is a sustainable NJ community
Staff with education/knowledge/training in low impact development	Yes	Construction
Surveyor	Yes	City Engineer
Stormwater engineer	Yes	City Engineer
Personnel skilled or trained in GIS applications	Yes	Administration
Local or state water quality professional	Yes	County Health
Scientist familiar with natural hazards in local area	Yes	Stew Farrell Stockton University
Emergency manager	Yes	Public Safety
Watershed planner	Yes	City Engineer, Construction office.
Environmental specialist	Yes	Stew Farrell. Stockton University
Grant writers	Yes	Administration
Resilience Officer	No	If yes, provide name of department/agency/position responsible and brief summary of what this resource provides
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the City of Sea Isle City.

Table 9.10-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the City of Sea Isle City.

Table 9.10-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes. Kathy Custer
Do you have personnel skilled or trained in website development?	Yes Kathy Custer



Criterion	Response
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes. On the City's website, links to resources.
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes. Through the City's website. Links to mitigation monies available.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Yes. Various social media sites.

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the City of Sea Isle City.

Table 9.10-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	3	5/1/2018
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3/3	6/2012
Public Protection (Fire ISO Protection Class)	Yes	5	10/2015
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	12/31/2019

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 2014). In other words, it describes a jurisdiction's current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction's rating.

Table 9.10-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.



The City has access to resources to determine the possible impacts of climate change upon the municipality through the National Weather Service in Mount Holly. This allows the City to obtain relevant data of trends and storm predictions in an upcoming season such as how the current climate may impact the number of serious storms we may face in a given time-frame. The City Administration is supportive of integrating climate change in policies or actions. The City has been very proactive in addressing the increased risk of flooding through mitigation, outreach, and instant notification when flooding is an issue. The City also works closely with Dr. Stewart Farrell of Stockton University. Climate change is already being integrated into current policies/plans or actions (projects/monitoring) within the City through an ongoing effort of mitigation and public outreach and a stringent CRS program.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.10-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction
Who is your floodplain administrator? (name, department/position)	Cornelius R. Byrne, Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes, Cornelius R. Byrne
What is the date that your flood damage prevention ordinance was last amended?	06/23/2020 #16542020
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceeds, currently a Class 3 community in the CRS program
When was the most recent Community Assistance Visit or Community Assistance Contact?	October 2017. In recycle visit now.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	None
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes, Sea Isle City participates in the CRS and is interested in further improving its CRS classification.
How many flood insurance policies are in force in your jurisdiction?*	3,274 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	2,567 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$232,281 in payments
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- Municipal Emergency Management Manager, with support from County OEM and NJOEM, continue to develop, enhance, and implement existing emergency plans.



- Local departments support County-wide initiatives identified in Section 9.1 of the County Annex. Support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan.
- The County and ACOE, along with Municipal Support, are partnering to support beachfront maintenance and protection of CR-619.
- The Municipal Emergency Management are continuing to support public education and outreach.
- The City Administration is partnering with Planning and Zoning to continue to limit development in the vulnerable and environmentally sensitive North End by continuing the single and two-family zoning in the area (from Master Plan).

9.10.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The City of Sea Isle City's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.10-11 provides details regarding municipal-specific loss and damages the City experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.10-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 Jonas	Snow Storm/ Nor'easter	Yes	A low pressure system traveled across the country and became a major nor'easter, bringing high amounts of snow, coastal flooding, and winds to coastal New Jersey.	Blizzard followed by flooding. Heavy ice floes in streets damaging structures. Structure damage in Sea Isle City totaled \$3 million.
October 27, 2018	Flood	No	The City was impacted by a strong low pressure system moving up the coast. Coastal New Jersey experienced coastal flooding and high winds.	The City experienced minor damage from a flood event that caused \$102,000 in flood damage to private properties.
April 21, 2020	Windstorm	No	An anomalous, strong cold front causing extreme wind shear and instability. Wind gusts up to 72 mph were reported in Cape May.	Minor city damages/debris- east side compromised during windstorm. The City spend \$1,000 in overtime.

Source: NOAA NCEI 2020, FEMA 2020

9.10.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the City of Sea Isle City risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the City of Sea Isle City.

- Number of repetitive loss (RL) properties: 208
- Number of severe repetitive loss (SRL) properties: 54





- Number of RL/SRL properties that have been mitigated: 74

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.10-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
Townsend Inlet Bridge (CMCBC)	Bridge	X	X
SEA ISLE CAUSEWAY BRIDGE	Bridge	X	X
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
BEACH PATROL HEADQUARTERS	County Facilities	X	X
SEA ISLE CITY AMBULANCE CORPS	EMS	X	X
Sea Isle City City Hall	EOC	X	X
SEA ISLE CITY FIRE DEPARTMENT	Fire Stations	X	X
Sea Isle Branch Library	Library	X	X
Sunset Pier	Marinas	X	X
Pier 88	Marinas	X	X
Sea Isle City Marina	Marinas	X	X
Sea Isle City	Municipal Facilities	X	X
Sea Isle City Police Department	Police Stations	X	X
SEA ISLE CITY LODGE	Polling Places	X	X
Sea Isle Recreation Building	Polling Places	X	X
40TH ST PUMP AND WATER TOWER	Potable Water Facilities	X	X
40TH ST WELL#7	Potable Water Facilities	X	X
80 TH ST WELL #5	Potable Water Facilities	X	X
80TH ST WATER TOWER AND PUMP	Potable Water Facilities	X	X
80TH ST WELL# 6	Potable Water Facilities	X	X
SEA ISLE CITY GAS PLANT	Superfund Sites	X	X
26TH ST PUMP STATION SEWER	Wastewater Treatment Facilities	X	X
34 TH ST PUMP STATION SEWER	Wastewater Treatment Facilities	X	X
38TH AND BAY FLOOD PUMP	Wastewater Treatment Facilities	X	X
39 TH PUMP STATION SEWER	Wastewater Treatment Facilities	X	X
50 Th St WELL #9 Pump Station	Wastewater Treatment Facilities	X	X
55 ST WELL # 8 PUMP STATION	Wastewater Treatment Facilities	X	X
88th St Pump Station SEWER	Wastewater Treatment Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- A number of roadways in the City are very low-lying and at high risk for flooding, with some flooding at high tide. This prevents access and hinders evacuation. (Central Avenue between 29th and 31st Street; 38th and Central; 47th to 51st on Landis; 43rd Street; Pleasure Avenue; 32nd-34th Street and Landis Ave; 60th Street at Landis; Pleasure Avenue; 71st Street; 45th Street)
- Visitors and residents are not aware of where flooding occurs and at what water levels.



- The City's power grid is vulnerable to outages and storm events.
- In conjunction with storm water pumps, many of the outfall sewer pipes located in flood-prone areas are extremely old. Many are compromised from years of debris or damage to the pipes and cannot function properly allowing water to drain from the streets.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the City of Sea Isle City that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the City of Sea Isle City has significant exposure. A map of the City of Sea Isle City hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the City of Sea Isle City. The City of Sea Isle City has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the City assented to its hazard ranking.

Table 9.10-13. City of Sea Isle City Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
High	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Medium

9.10.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.



Table 9.10-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
SIC-1a (former SIC-1a)	Property Mitigation Support – Retrofit	City (through NFIP Floodplain Administrator)	In progress	X	2021- SeaIsle City-004
SIC-1b (former SIC-1b)	Property Mitigation Support – Acquisition/Relocation	City (through NFIP Floodplain Administrator)	Ongoing capability		
SIC-2	Acquire privately owned land parcels located in flood prone areas and within the City’s dune system (from Master Plan).	City Administration; working with NJDEP	Ongoing capability		
SIC- 3 (former SIC-3)	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0, and as required under the CRS program.	City (through mitigation planning point of contacts)	Ongoing Capability		
SIC- 4- (former SIC-2, -4)	Continue to maintain compliance with, and good-standing in the National Flood Insurance program, including continuing active participation in CRS.	City (through NFIP Floodplain Administrator)	Completed		
SIC- 5 (former SIC-5)	Continue to develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing capability		
SIC- 6 (former SIC-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex. Support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan	Local departments (as applicable for specific initiative)	Ongoing capability		
SIC- 7 (former SIC-8 and -9 (CMC-28, TU-13))	Beachfront Maintenance and Protection of CR-619	County and ACOE, Municipal Support	Ongoing capability		
SIC- 8 (former SIC-13)	Install bulkheads along back bay in Sea Isle City in locations (large areas) that are not protected.	Municipal, with County and property owner support	In progress	X	2021- SeaIsle City- 006
SIC- 9 (former SIC-14)	Public Education and Outreach	Municipal (Emergency Management)	Ongoing capability		
SIC-10	Continue to limit development in the vulnerable and environmentally sensitive North End by continuing the single and two-family zoning in the area (from Master Plan)	City Administration, Planning and Zoning	Ongoing capability		
SIC-11	Impervious surfaces on individual lots should be controlled by establishing a certain percentage of the lot being a pervious surface. (from Master Plan)	Planning and Zoning	Ongoing capability		

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE



The City of Sea Isle City participated in a risk assessment workshop in (c) January 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The City of Sea Isle City participated in a mitigation action workshop in (c) January 200 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.10-15 summarizes the comprehensive-range of specific mitigation initiatives the City of Sea Isle City would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.10-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.10-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-SeaIsle City-001	Central Ave Stormwater Mitigation	<p>Problem: Sea Isle City experiences stormwater flooding in the vicinity of the Recreation Center between 43rd Street and 50th Street. The City has completed design for a stormwater mitigation pumping project to decrease the amount of time during which the street is inundated in storm events.</p> <p>Solution: The City proposes to construct pumping stations at 43rd Street and 46th Street to reduce the length of time that flooding inundates the streets.</p>	New	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter	1, 3, 4, 5	Sea Isle City – Engineer and Public Works	City funds; BRIC; HMGP	Decreased length of time that street is inundated	\$2 million	Short term	High	SIP	SP
2020-SeaIsle City-002	Elevation of Central Avenue from 29 th to 31	<p>Problem: Central Avenue is a low-lying road running much of the length of Sea Isle City. The Street has particularly low elevations between 35th Street and 46th Street, where flooding can occur when tide levels are just one foot above typical high tides.</p> <p>Solution: The City proposes to elevate portions of Central Avenue in conjunction with utility and drainage work.</p>	Existing	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter	1, 3, 4	Sea Isle City – Engineer and Public Works	City funds; BRIC; HMGP	Enhanced debris management capability; emergency access	\$250,000	Medium Term	High	SIP	SP
2020-SeaIsle City-003	Recreation Center Generator	<p>Problem: Sea Isle City is constructing a new recreation/civic/municipal facility at the site of its former school. The new building will serve resident needs and will be a critical facility when constructed.</p> <p>Solution: The City proposes to install a generator at the new recreation center to support continuity of operations.</p>	New	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter; Severe Winter Weather	1, 3, 4	Sea Isle City – Engineer and Public Works	City funds; HMGP; BRIC	Continued functionality of critical facility	\$75,000	Short term	High	SIP	PP
2021-SeaIsle City-004 (Former SIC 1a)	Property Mitigation Support – Retrofit	Problem: Sea Isle City and property owners in the City have experienced millions of dollars in flood damage owing to flooding events. The City has a number of buildings that were constructed prior to the enactment of the	Existing	Flood; Severe Weather; Climate Change/Sea Level	1, 3, 4	City (through NFIP Floodplain Administrator)	FEMA Mitigation Grant Programs (primarily HMGP and	Enhanced property protection	High	Long Term D OF	High	EAP, SIP	PI, PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		<p>City's flood damage prevention ordinance, and many of those buildings have not been properly mitigated or flood-proofed. This leaves them at continued risk of flooding.</p> <p>Solution: Property Mitigation Support – Retrofit: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.</p>		Rise; Hurricane; Nor'easter			FMA); local property owner for match as supported by ICC and other non-Federal match sources as available.						
2021-SeaIsle City-005	Sea Isle City – North Mitigation Feasibility	<p>Problem: The northern portion of the City is vulnerable to coastal erosion and oceanfront flooding. Landis Avenue, the only north-south route in northern Sea Isle City, provides the only land access route to Strathmere in Upper Township. This makes protection of the north end of the City critical.</p> <p>Solution: The City proposes to undertake a feasibility study to determine whether the City's promenade can be extended northward to provide shore protection and recreation access to the north end of the City.</p>	New	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter	1, 3, 4, 5	Sea Isle City-Engineer; NJDEP	City; US Army Corps; NJDEP Shore Protection Fund	Protection of northern portion of the City	Medium	Mid-term	Medium	SIP	SP
2021-SeaIsle City-006 (Former SIC 8)	Bulkhead Installation	Problem: Much of Sea Isle City's waterfront is privately owned and privately-owned bulkheads provide much of the shore protection infrastructure located along the back bays. The bulkheads are in a variety of heights and conditions owing to private ownership and maintenance.	Existing	Flood; Severe Weather; Climate Change/Sea Level Rise;	1, 3, 4	City Engineer, with County and property owner support	City funds; BRIC; Private contribution	Wave attenuation and protection of upland	High	Long Term D OF	Medium	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: The City proposes to install bulkheads along back bay in Sea Isle City in locations (large areas) that are not protected. The City will support private property owners efforts to install new bulkheads that meet the City's requirements. Outfall repairs will also be undertaken as part of the project.		Hurricane; Nor'easter				properties					
2021-Sea Isle City-007	Disaster Debris Management Plan	Problem: The Township lacks a debris management plan. Solution: The City will develop and adopt a Disaster Debris Management Plan.	N/A	All Hazards	4, 6	Administration	Municipal budget	Plan in place for debris management	Staff time	1 year	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- 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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*



Table 9.10-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2020-SeaIsle City-001	Central Ave Stormwater Mitigation	1	0	0	1	1	1	-1	0	1	1	1	1	1	1	9	High ⚠
2020-SeaIsle City-002	Elevation of Central Avenue from 29 th to 31	1	0	0	1	1	1	-1	0	1	1	1	1	1	1	9	High
2020-SeaIsle City-003	Recreation Center Generator	1	1	1	1	1	1	-1	0	1	1	1	1	1	1	11	High
2021-SeaIsle City-004 (Former SIC 1a)	Property Mitigation Support – Retrofit	1	1	1	1	1	1	-1	1	1	1	1	1	1	1	12	High
2021-SeaIsle City-005	Sea Isle City – North Mitigation Feasibility	1	0	0	0	1	0	-1	0	1	1	1	1	1	1	7	Medium
2021-SeaIsle City-006 (Former SIC 8)	Bulkhead Installation	1	1	1	1	1	1	-1	0	1	1	1	1	1	1	11	High
2021-SeaIsle City-007	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.10-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and SLR		X	X		X	X		
Coastal Erosion		X	X		X	X		
Disease Outbreak					X			
Drought					X			
Flood		X	X		X	X		
Hurricane		X	X		X	X		
Nor'Easter		X	X		X	X		
Severe Weather		X	X		X	X		
Severe Winter Weather		X	X		X	X		
Tsunami					X			
Wildfire					X			

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard

Figure 9.10-1. City of Sea Isle City Hazard Area Extent and Location Map 1

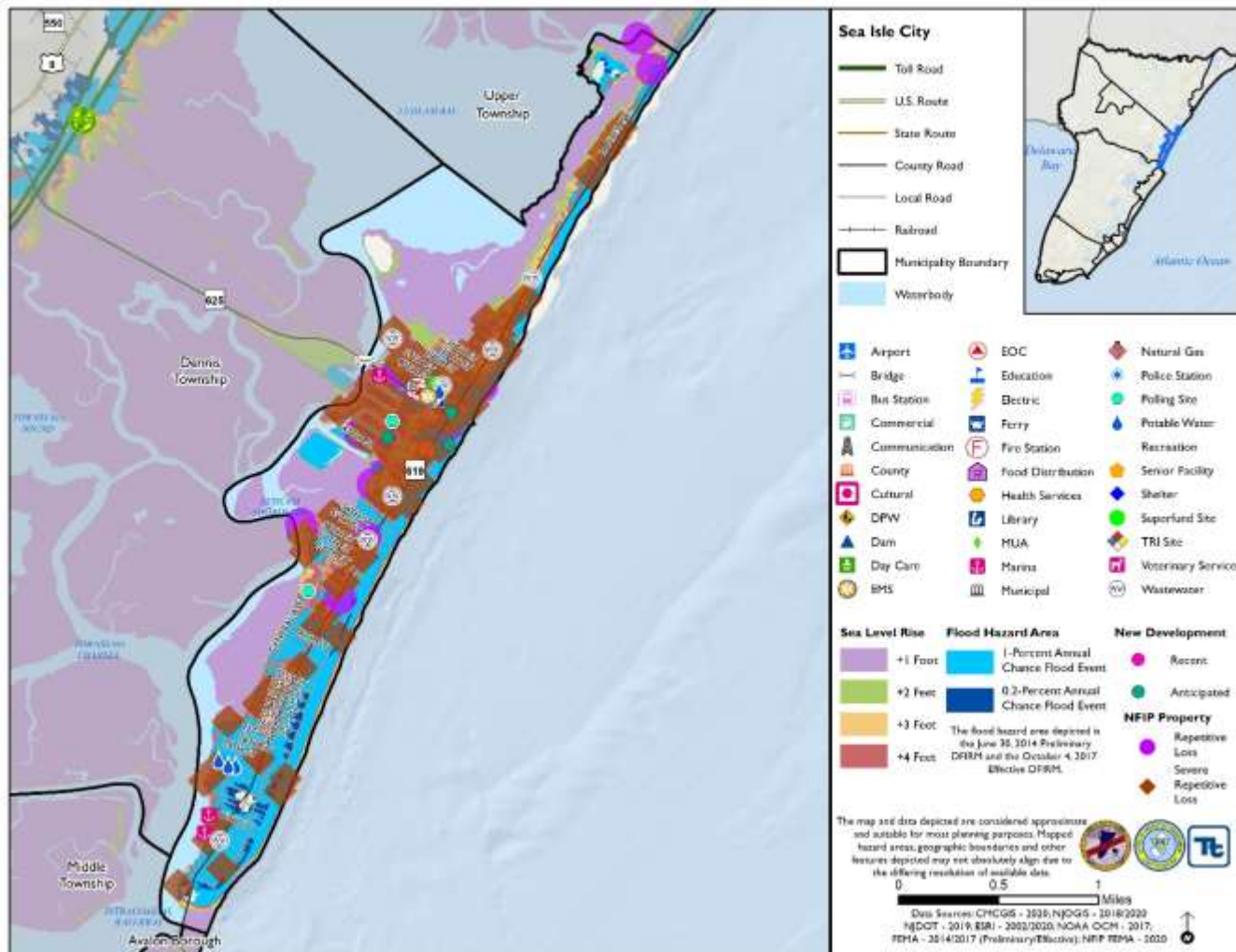


Figure 9.10-2. City of Sea Isle City Hazard Area Extent and Location Map 2

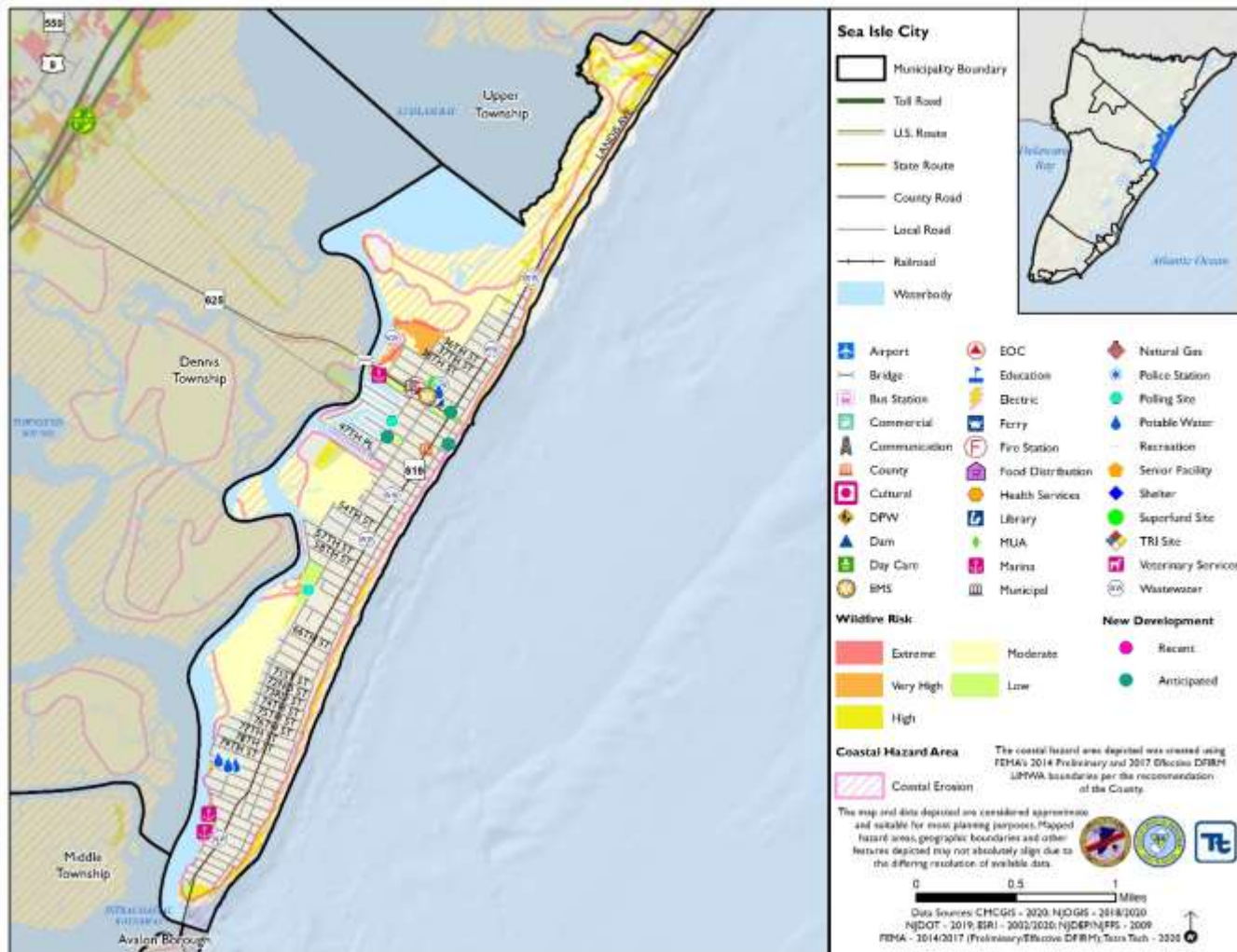
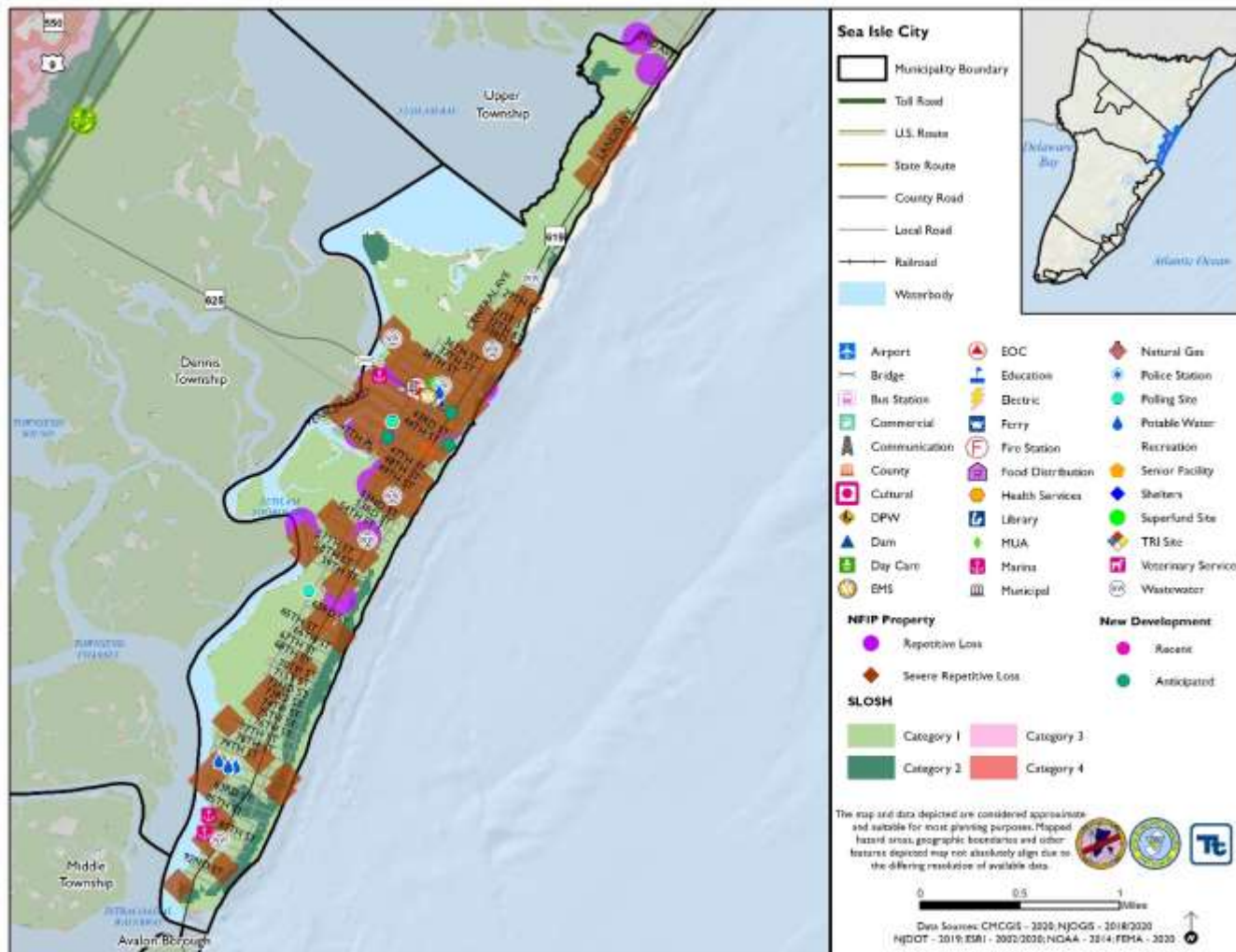


Figure 9.10-3. City of Sea Isle City Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	2020-SeaIsle City-001		
Project Number:	Central Ave Stormwater Mitigation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter		
Description of the Problem:	Sea Isle City experiences stormwater flooding in the vicinity of the Recreation Center between 43rd Street and 50th Street. The City has completed design for a stormwater mitigation pumping project to decrease the amount of time during which the street is inundated in storm events.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to construct pumping stations at 43 rd Street and 46 th Street to reduce the length of time that flooding inundates the streets.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Decreased length of time that street is inundated
Useful Life:	30 years	Goals Met:	1, 3, 4, 5
Estimated Cost:	\$2 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short-term
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	City funds; BRIC; HMGP
Responsible Organization:	Sea Isle City – Engineer and Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Floodplain Management Plan; Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	None or maintenance costs only	Not feasible for protection/mitigation
	On site retention	High	Too costly/not enough property
	Mitigation project	\$800,000	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-SeaIsle City-001	
Project Number:	Central Ave Stormwater Mitigation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces life safety threat posed by flooding
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	City supports mitigation projects
Legal	1	Project is legally feasible
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter
Timeline	1	Short-term
Agency Champion	1	City supports project
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-SeaIsle City-002		
Project Number:	Elevation of Central Avenue from 29th to 31		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Storms Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter		
Description of the Problem:	Central Avenue is a low-lying road running much of the length of Sea Isle City. The Street has particularly low elevations between 35th Street and 46th Street, where flooding can occur when tide levels are just one foot above typical high tides.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to elevate portions of Central Avenue in conjunction with utility and drainage work.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Enhanced debris management capability; emergency access
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	\$250,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short-term
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	City funds; BRIC; HMGP
Responsible Organization:	Sea Isle City – Engineer and Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Floodplain Management Plan; Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	None or maintenance costs only	Not feasible for protection/mitigation
	Drainage improvements only	Medium	Measures not sufficient
	Elevation	TBD	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-SeaIsle City-002	
Project Number:	Elevation of Central Avenue from 29th to 31	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces life safety threat posed by flooding
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	Project is technically feasible
Political	1	City supports mitigation projects
Legal	1	Project is legally feasible
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Severe Storms Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter
Timeline	1	
Agency Champion	1	City supports project
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2020-SeaIsle City-003		
Project Number:	Recreation Center Generator		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter; Severe Winter Weather		
Description of the Problem:	Sea Isle City is constructing a new recreation/civic/municipal facility at the site of its former school. The new building will serve resident needs and will be a critical facility when constructed.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to install a generator at the new recreation center to support continuity of operations.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Continued functionality of critical facility
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	\$75,000	Mitigation Action Type:	Structure and Infrastructure Improvement Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short-term
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	City funds; BRIC; HMGP
Responsible Organization:	Sea Isle City – Engineer and Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	None	Not feasible for protection/mitigation
	Microgrid	High	Too costly
	Generator	\$75,000	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2020-SeaIsle City-003	
Project Number:	Recreation Center Generator	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces life safety threat posed by power outages
Property Protection	1	Project will reduce hazard damage to structures
Cost-Effectiveness	1	Generators provide cost-effective mitigation
Technical	1	Project is technically feasible
Political	1	City supports mitigation projects
Legal	1	Project is legally feasible
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter; Severe Winter Weather
Timeline	1	
Agency Champion	1	City supports project
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2021-SeaIsle City-004 (Former SIC 1a)		
Project Number:	Property Mitigation Support – Retrofit		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter		
Description of the Problem:	Sea Isle City and property owners in the City have experienced millions of dollars in flood damage owing to flooding events. The City has a number of buildings that were constructed prior to the enactment of the City's flood damage prevention ordinance, and many of those buildings have not been properly mitigated or flood-proofed. This leaves them at continued risk of flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Property Mitigation Support – Retrofit: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Design flood elevation	Estimated Benefits (losses avoided):	Enhanced property protection
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structural Improvement Project/Education and Awareness Programs
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short-term
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	City funds; HMGP; BRIC
Responsible Organization:	City (through NFIP Floodplain Administrator)	Local Planning Mechanisms to be Used in Implementation if any:	Floodplain Management Plan; Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	None or maintenance costs only	Not feasible for protection/mitigation
	Acquisition	High	Not feasible
	Property mitigation support	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2021-SeaIsle City-004 (Former SIC 1a)	
Project Number:	Property Mitigation Support – Retrofit	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces life safety threat posed by flooding
Property Protection	1	Project will reduce hazard damage to structures
Cost-Effectiveness	1	Property retrofits are typically cost-effective
Technical	1	Project is technically feasible
Political	1	City supports mitigation projects
Legal	1	Project is legally feasible
Fiscal	-1	Project requires funding support
Environmental	1	Project reduces storm debris and uses less construction material than a new home
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter
Timeline	1	
Agency Champion	1	City supports project
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	2021-SeaIsle City-005		
Project Number:	Sea Isle City – North Mitigation Feasibility		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter		
Description of the Problem:	The northern portion of the City is vulnerable to coastal erosion and oceanfront flooding. Landis Avenue, the only north-south route in northern Sea Isle City, provides the only land access route to Strathmere in Upper Township. This makes protection of the north end of the City critical.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to undertake a feasibility study to determine whether the City's promenade can be extended northward to provide shore protection and recreation access to the north end of the City.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Protection of northern portion of the City
Useful Life:	N/A	Goals Met:	1, 3, 4, 5
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Medium-term
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	City; US Army Corps; NJDEP Shore Protection Fund
Responsible Organization:	Sea Isle City- Engineer; NJDEP	Local Planning Mechanisms to be Used in Implementation if any:	Floodplain Management Plan; Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	None or maintenance costs only	Not feasible for protection/mitigation
	dune extension	May not be feasible	
	Feasibility study	Medium	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2021-SeaIsle City-005	
Project Number:	Sea Isle City – North Mitigation Feasibility	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces life safety threat posed by flooding
Property Protection	0	
Cost-Effectiveness	0	
Technical	0	
Political	1	City supports mitigation projects
Legal	0	
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Severe Weather; Climate Change/Sea Level Rise; Hurricane; Nor'easter
Timeline	1	
Agency Champion	1	City supports project
Other Community Objectives	1	
Total	7	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	2021-SeaIsle City-006 (Former SIC 8)		
Project Number:	Bulkhead Installation		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Severe Weather; Climate Change/Sea Level Rise		
Description of the Problem:	Much of Sea Isle City's waterfront is privately owned and privately-owned bulkheads provide much of the shore protection infrastructure located along the back bays. The bulkheads are in a variety of heights and conditions owing to private ownership and maintenance.		
Action or Project Intended for Implementation			
Description of the Solution:	The City proposes to install bulkheads along back bay in Sea Isle City in locations (large areas) that are not protected. The City will support private property owners efforts to install new bulkheads that meet the City's requirements. Outfall repairs will also be undertaken as part of the project.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	7 feet NAVD88	Estimated Benefits (losses avoided):	Wave attenuation and protection of upland
Useful Life:	40 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Medium-term
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	City funds; BRIC; Private contribution
Responsible Organization:	City Engineer, with County and property owner support	Local Planning Mechanisms to be Used in Implementation if any:	Floodplain Management Plan; Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	None or maintenance costs only	Not feasible for protection/mitigation
	Living shorelines	High	May not retain sediment/fill
	Bulkheads	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	2021-SeaIsle City-006 (Former SIC 8)	
Project Number:	Bulkhead Installation	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project reduces life safety threat posed by flooding
Property Protection	1	Project will reduce hazard damage to structures
Cost-Effectiveness	1	Value of bulkhead protects upland adjacent structures
Technical	1	Project is technically feasible
Political	1	City supports mitigation projects
Legal	1	Project is legally feasible
Fiscal	-1	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Severe Weather; Climate Change/Sea Level Rise
Timeline	1	
Agency Champion	1	City supports project
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



9.11 BOROUGH OF STONE HARBOR

This section presents the jurisdictional annex for the Borough of Stone Harbor. The annex includes a general overview of the Borough of Stone Harbor; an assessment of the Borough of Stone Harbor's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.11.1 Staff and Local Stakeholder Involvement in Annex Development

The Borough of Stone Harbor followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.11-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Robert Smith, Borough Administrator Address: 9508 Second Avenue Stone Harbor, New Jersey 08247 Phone number: (609) 368-5102 Email: smithr@shnj.org		Name / Title: Jonathan Lakose, OEM Coordinator Address: 9508 Second Avenue Stone Harbor, New Jersey 08247 Phone number: (610) 842-6526 Email: lakosej@shnj.org
NFIP Floodplain Administrator		
Name / Title: Ray Poudrier, Construction Official/CFM Address: 9508 Second Avenue Stone Harbor, New Jersey 08247 Phone number: (609) 368-6814 Email: poudrierr@shnj.org		
Name	Title	Method of Participation
Kim Stevenson	CRS Coordinator	Annex Development and Review, Project Development, Meeting Attendance
Marc Deblasio	Borough Engineer	Project Development, Meeting Attendance, Reviewed and Signed Off on Annex
Ray Poudrier	Construction Official/CFM	Annex Review, Meeting Attendance, Reviewed and Signed Off on Annex
Robert Smith	Borough Administrator	Annex Review, Meeting Attendance, Reviewed and Signed Off on Annex
Jonathan Lakose	OEM Coordinator	Annex Review, Meeting Attendance, Reviewed and Signed Off on Annex
Grant Russ	Public Works Director	Completed Stakeholder Survey
James Craft	Director of Finance	Reviewed and Signed Off on Annex
Paul Kates	Land Use Planner	Reviewed and Signed Off on Annex
Thomas Schutta	Chief, Police Department	Reviewed and Signed Off on Annex
Roger Stanford	Chief, Fire Department	Reviewed and Signed Off on Annex



9.11.2 Jurisdiction Profile



Stone Harbor is a barrier island resort and residential community located on the southern portion of Seven Mile Island in Cape May County, New Jersey. Stone Harbor consists of 1,256 acres of land and is lined by more than 3.5 miles of pristine beachfront and miles of back bay shoreline, including marsh and private waterfront. The Borough was incorporated in 1914 and has grown through the years to be both a residential year-round community as well as a seasonal resort community.

According to the U.S. Census, the 2010 population for the Borough of Stone Harbor was 866. The estimated 2018 population was 955, a 10.2 percent increase from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate

that 0.2 percent of the population is 5 years of age or younger and 42.5 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.11.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.11-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.11-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.11-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	26	24	37	34	43	42	39	35	39	36
Multi-Family	0	0	2	0	0	0	2	0	2	0
Other (commercial, mixed-use, etc.)	0	0	0	0	0	0	0	0	0	0
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
The Reeds II	Mixed Use Hotel		22		9622-28 Third Ave		SFHA		Received certificate of occupancy	
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	



100 th Street LLC	Day Spa	N/A	96.03/111; 9622-28 Third Ave	SFHA	Completed
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Villa Maria	Retreat Center /13SF Subdivision	13 Single Fam/1 Retreat Center	11101 First Ave 111.01/1-20 112.01/1 & 112.02/22-60	SFHA	In Engineering
93 rd St Stormwater Pump Station	Stormwater Pump Station	1	93 rd & Third Ave	SFHA	In Design

* Only location-specific hazard zones or vulnerabilities identified.

9.11.4 Capability Assessment

The Borough of Stone Harbor performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.11.4). The Borough of Stone Harbor identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment:					



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Construction Codes, Uniform, Chapter 230, adopted by Borough Council in 1982 and amended through 2019. There is hereby established in the Borough of Stone Harbor a state uniform construction code enforcing agency, to be known as the "Department of Construction Inspection," consisting of a construction official, building subcode official, plumbing subcode official, electrical subcode official, fire protection subcode official. The Construction Official and the Subcode Officials shall be determined from time to time by resolution of Borough Council.The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Zoning, Chapter 560, adopted by Borough Council on 12-06-11 and amended through 2019. Pursuant to the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., and for the purposes set forth therein, the Borough of Stone Harbor, New Jersey, hereby establishes the Zoning Ordinance of Stone Harbor, New Jersey.This Chapter addresses flooding in basic terms by making exceptions to normal standards for height and setbacks to allow for building elevations.Regarding Stormwater, All new construction and substantial improvements as defined in Chapter 300 will be required to furnish and install an underground stormwater recharge system to limit the amount of runoff generated by the construction. The system shall be designed to collect stormwater runoff from the roof leaders or an equivalent amount of runoff through inlets or yard drains. There is a separate Chapter that addresses Stormwater Management in more detail.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Land Development Procedures, Chapter 345, adopted by Borough Council in 1982, amended through 2019. The purpose of this chapter shall be to establish the functions of the Planning Board and Zoning Board of Adjustment and to provide rules, regulations and standards to guide land subdivision and site development in the Borough of Stone Harbor. It is further the purpose to promote the purposes of the New Jersey Municipal Land Use Law, as amended (N.J.S.A. 40:55D-2), including but not limited to public health, safety, convenience and general welfare of the municipality. It shall be administered to ensure orderly growth and development or redevelopment, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services.The Planning Board shall have the power to administer the provisions of the Land Subdivision Ordinance and Site Plan Review Ordinance of the Borough in accordance with the provisions of these ordinances, and the Municipal Land Use Law, Chapter 291, P.L. 1975, N.J.S.A. 40:55D-1 et seq. The Zoning Board shall have the same powers when such applications are within its jurisdiction. There shall be no division of any lot, tract or parcel of land in this Borough into two or more lots, tracts or parcels of land for sale or development without first obtaining subdivision approval from the Planning or Zoning Board.This Chapter makes general provisions for flood protection and stormwater controls.					



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Storm Sewer System, Chapter 468, adopted by Borough Council on 06-01-10. This article requires dumpsters and other refuse containers that are outdoors or exposed to stormwater to be covered at all times and prohibits the spilling, dumping, leaking, or otherwise discharging of liquids, semi-liquids or solids from the containers to the municipal separate storm sewer system(s); and the retrofitting of existing storm drain inlets which are in direct contact with repaving, repairing, reconstruction, or resurfacing or alterations of facilities on private property to prevent the discharge of solids and floatables (such as plastic bottles, cans, food wrappers and other litter) to the municipal separate storm sewer system(s) operated by the Borough of Stone Harbor. Chapter 470 of the Borough's code regulates stormwater management. 					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. <ul style="list-style-type: none"> It should be noted that Section 300-3 of the Borough's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard. 					
Growth Management	No	-	Yes – if municipality has a Planning Board	-	-
Comment: <ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. 					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Land Development Procedures, Chapter 345, adopted by Borough Council in 1982, amended through 2019. The purpose of this chapter shall be to establish the functions of the Planning Board and Zoning Board of Adjustment and to provide rules, regulations and standards to guide land subdivision and site development in the Borough of Stone Harbor. It is further the purpose to promote the purposes of the New Jersey Municipal Land Use Law, as amended (N.J.S.A. 40:55D-2), including but not limited to public health, safety, convenience and general welfare of the municipality. It shall be administered to ensure orderly growth and development or redevelopment, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services. 					



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">The Planning Board shall have the power to administer the provisions of the Land Subdivision Ordinance and Site Plan Review Ordinance of the Borough in accordance with the provisions of these ordinances, and the Municipal Land Use Law, Chapter 291, P.L. 1975, N.J.S.A. 40:55D-1 et seq. The Zoning Board shall have the same powers when such applications are within its jurisdiction. There shall be no division of any lot, tract or parcel of land in this Borough into two or more lots, tracts or parcels of land for sale or development without first obtaining subdivision approval from the Planning or Zoning Board.This Chapter makes general provisions for flood protection and stormwater controls.					
Environmental Protection	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Parks, Recreation Areas and Bird Sanctuary, Chapter 400, adopted by Borough Council in 1982, amended 05-05-09 to add Article IV. Bird Sanctuary. Although not a comprehensive Environment Protection regulation, the Bird Sanctuary provides for the protection of Borough property between 111th and 117th Streets and between 2nd and 3rd Avenues, referred to as Stone Harbor Bird Sanctuary or Bird Sanctuary, is approximately 21+ acres of wetlands and maritime forest dedicated to being a bird sanctuary.Chapter 560-24 Conservation DistrictChapter 466-19 – Single Use Plastics Ban					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.Flood Damage Prevention, Chapter 300, adopted by Borough Council on 09-19-17 and amended 04-17-18. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: Protect human life and health; Minimize expenditure of public money for costly flood control projects; Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; Minimize prolonged business interruptions; Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; Ensure that potential buyers are notified that property is in an area of special flood hazard; and Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.In order to accomplish its purposes, this chapter includes methods and provisions for: Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters; Controlling filling, grading, dredging, and other development which may increase flood damage; and Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.The Floodplain Manager is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.It appears this Chapter requires regulated residential and nonresidential structures in a SFHA be elevated to or above the BFE and that manufactured homes in a SFHA be elevated to a minimum of three feet above the BFE.					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	No	-	No	-	-



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	Federal, State & Local	No	No	-
Comment:					
<ul style="list-style-type: none">Beaches, Chapter 156, adopted by Borough Council in 1982 and last amended 12-12-15. The beach berm and dunes offer the first line of defense against the sea during a storm. Dune areas are vulnerable to erosion and damage by wind, water, indiscriminate trespass, construction, acts which damage their protective vegetation, and the absence of good husbandry. Therefore, the Borough has a vital interest in establishing and maintaining a protection program for the beach and dune areas. It is the policy of this Borough to encourage the development of sand dunes, and to take whatever steps are required to maintain and protect these dunes. The specifics for such steps are set forth in Executive Policy 98-B-001, as amended from time to time.The Borough of Stone Harbor has adopted a Dune Vegetation Management Plan, as approved by the New Jersey Department of Environmental Protection. The Dune Vegetation Management Plan includes a Dune Maintenance Program whereby interested private property owners can partner with the Borough to, among other things, help eliminate certain nonindigenous and/or invasive species of vegetation from dune areas. The Borough undertakes dune maintenance and protection measures.					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.Master Plan, Land Use Plan Element, adopted by the Planning Board on June 22, 2009. The Plan recognizes that the continued impact of hurricanes, storms and other natural consequences has eroded beaches, damaged dunes and infrastructure and destroyed natural habitats. The beaches are important for protecting the dunes and habitats, because they deflect the impact of the force of the water and minimize the size and strength of waves before they reach the dunes and lands further ashore. Beach replenishment returns the sands to the beaches so that they can continue to serve these functions. The Land Use Element also includes a Stone Harbor Action Plan that identifies tasks involving Ordinances, Master Plans and Specialty Plans & Public and Private Initiatives. Some of these tasks have been completed while others may be considered for actions in the HMP.Master Plan Re-Examination Report, dated June 2019. The Plan makes general mention of flood hazard issues but does point to the fact that Storm water development in the Borough is looking to the future to control nuisance flooding as well as catastrophic failures during major storm and tidal flooding events. The current plan breaks down the island into thirteen drainage areas where storm water runoff would be moved to the lowest point and dispersed through underground recharge systems or conveyed by pumps either downstream or into the bay. While the ultimate goal is to reduce impermeable surface runoff through recharge, rain gardens, pervious surfaces, and underground storage; in some areas the runoff and elevation exceeds the limitations of those methods. Part of the storm water planning process also brought about changes to the bulkhead requirements that have already been implemented.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: The Borough of Stone Harbor has a five (5) year Capital Improvement Plan: Infrastructure Upgrades					



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Disaster Debris Management Plan	No	-	No	-	2021-StoneHarbor-014
Comment:					
Floodplain or Watershed Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none"> The Stone Harbor Watershed Plan was completed in November 2019 by the Stockton University Coastal Research Center. The goals of the Stormwater Management Plan are to: <ul style="list-style-type: none"> Evaluate future conditions and long-duration storms Evaluate the impact of sea level rise and climate change Identify wetlands and natural areas Address the protection of natural channels Provide a dedicated funding source for implementing the plan 					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. Stormwater Plan, no date. The Borough's Stormwater Master Plan addresses the two major causes of Borough-wide flooding and presents a comprehensive plan of stormwater management and flood hazard mitigation techniques to mitigate the repetitive losses to properties throughout the Borough. The main causes of flooding include: Above Normal Tide Levels; and Inadequacy of the existing stormwater conveyance system. The Master Plan establishes a ten (10) year plan aimed at mitigation of Borough-wide flooding. The Master Plan recommended monitoring impervious coverage limits to ensure that they can maintain the balance of light and air along with historically desirable densities. This problem persists but has not been exacerbated. 93rd Street Stormwater Pump Station – to be completed 2022 – Reduce Nuisance Flooding in the business district. Marina Improvements – improved bulkhead, raising of parking lot **See Master Plan Update 2019 Continued Infrastructure Improvements – 5 year Capital Improvement Plan 					
Stormwater Pollution Prevention Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. Stormwater Pollution Prevention Plan (SPPP), dated May 25, 2011 & revised December 26, 2019. The Plan addressed the Borough's ongoing compliance efforts with the MS4 regulations in the areas of Storm Drain Inlet Labeling; Outfall Mapping; Illicit Connections; Yard Waste Collection; Street Sweeping; Stormwater Facility Maintenance; Outfall Pipe Remediation; De-icing material storage; and Employee Training Requirements. 					
Urban Water Management Plan	No	-	No	-	-



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Habitat Conservation Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Dune Vegetation Management Plan, dated June 2015. Goals of the Plan include;<ul style="list-style-type: none">Establish a science-based approach to evaluating and managing/restoring dune vegetation, in a manner ensuring that the Borough receives the critical safety and ecological services that its dunes can provide.Develop a Dune Vegetation Management Plan that addresses control of Japanese black pine and other damaging invasive plants, as appropriate, by its removal and replacement with native vegetationProvide management standards, techniques and recommended native plants that can be used for the vegetation restoration and enhancement component of the dune ecosystemIn addition to the Dune Protection Ordinance, the Borough supports dune vegetation improvement programs through its Public Works Department and through volunteer beachgrass planting initiatives, in addition to education programs.Chapter 560-24 Conservation Management DistrictBorough of Stone Harbor Beach Management Plan – For the protection of State & Federal listed species					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	Construction Office	Yes – if located in a coastal zone	Yes	-
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Community Forestry Management Plan, submitted to the State in 2016 for 2016 – 2020. This Community Forestry Management Plan (CFMP or Plan) for the Borough of Stone Harbor was prepared to establish programs that recognize the unique nature of its tree resources and to plan future programs that will continue to protect and enhance these resources. The Borough established goals and objectives compatible with its forestry planning process vision to provide forest and tree streetscapes for the benefit of its residents and visitors in addition to the wildlife that rely on tree resources. The mission of the Borough's CFMP is to protect, enhance and sustain productive community shade tree and forest resources that will improve the quality of life for the residents, visitors and wildlife that inhabit and/or visit this unique resort community.					
Transportation Plan	Yes	Local	No	No	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	Yes	-	No	-	-



Table 9.11-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">Green Purchasing Policy, adopted by Borough Council on November 7, 2017. It is the policy & practice of the Borough of Stone Harbor to:<ul style="list-style-type: none">Institute practices that reduce waste by increasing product efficiency and effectiveness, andPurchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable, andPurchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, are lead-free and mercury-free, and use wood from sustainably harvested forests (FSC) when & where possible.The Borough instituted a Single Use Plastic ban within our Business District Chapter 466-19					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local OEM & State Police	Yes	Yes	-
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.The Municipal Emergency Manager, with support for County OEM and New Jersey OEM, is continuing to develop, enhance, and implement existing emergency plans.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	OEM Director	No	Yes	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.11-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes – Zoning Board Construction Office
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No- the Borough is built-out and all new development is redevelopment.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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



Table 9.11-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Zoning Officer
Mitigation Planning Committee	Yes	Flood Mitigation Committee
Environmental Board / Commission	No	-
Open Space Board / Committee	Yes	County
Economic Development Commission / Committee	Yes	Council
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Fire Department & OEM. The Borough is maintaining flood siren warning systems throughout the Borough to alert residents in the event of an emergency.
Maintenance program to reduce risk	Yes	Public Works. There is a continued maintenance of the 12 outfall pipes along the beachfront of the Borough by regularly cleaning and adding replacement sands to the area for Emergency Access.
Mutual aid agreements	Yes	Police/Fire/Public Works. The Borough is creating, enhancing, and maintaining mutual aid agreements with neighboring communities.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Board, Kates Schneider Engineering, LLC – Planner & DeBlasio & Associates, - Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Construction Official and Borough Engineer
Planners or engineers with an understanding of natural hazards	Yes	Kates Schneider Engineering, LLC – Planner & DeBlasio & Associates, - Engineer
Staff with training in benefit/cost analysis	Yes	CFO, Borough Engineer
Staff with training in green infrastructure	Yes	Borough Engineer, Public Works
Staff with education/knowledge/training in low impact development	No	-
Surveyor	Yes	DeBlasio & Associates
Stormwater engineer	Yes	DeBlasio & Associates
Personnel skilled or trained in GIS applications	Yes	Deblasio & Associates
Local or state water quality professional	Yes	Craig Loper, Licenses Operator
Scientist familiar with natural hazards in local area	Yes	Dr. Stewart Farrell, Coast Research Center
Emergency manager	Yes	Jonathan Lakose, OEM Director, Roger Stanford, Deputy
Watershed planner	Yes	Dr. Stewart Farrell, Stockton Coastal Research
Environmental specialist	Yes	Dr Lenore Tedesco, The Wetlands Institute
Grant writers	Yes	DeBlasio & Associates
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

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



Table 9.11-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.11-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes- Jenny Olson, Tourism Director/PIO
Do you have personnel skilled or trained in website development?	Yes- Joyce Media/Jenny Olson, Tourism Director
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes- Flood Information Tab that provides all aspects within CRS
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes- Storm Notification, Hurricane Awareness and Preparedness, Links to FEMA Funding
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes- Flood Mitigation Committee - Council, Environmental Specialists, Engineers, Public Works, Construction, OEM and Private Citizens
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Yes- Stone Harbor Emergency Website – CODE RED Notification

COMMUNITY CLASSIFICATIONS

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

Table 9.11-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	5	May 1, 2014
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	July 5, 2012
Public Protection (Fire ISO Protection Class)	Yes	3	2019
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Silver	12/13/2017

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.11-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Climate Change and SLR	Moderate
Coastal Erosion	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The Borough has access to resources to determine the possible impacts of climate change upon the municipality. For example, the Borough has tide gauges that monitor sea level rise and 16 sensors that measure stormwater. The Borough administration is supportive of integrating climate change in policies or actions and has already implemented a flood mitigation/stormwater master plan.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.11-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Office
Who is your floodplain administrator? (name, department/position)	Ray Poudrier, Construction Official
Are any certified floodplain managers on staff in your jurisdiction?	Ray Poudrier, Construction Official & Marc DeBlasio, DeBlasio & Associates, Borough Engineer
What is the date that your flood damage prevention ordinance was last amended?	9/19/2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceeds – Substantial Improvements @ 40%. Greater of or Higher of +2 or 11 feet NAVD88
When was the most recent Community Assistance Visit or Community Assistance Contact?	January 2020 – Douglass Reedy ISO
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No. The Borough is continuing to work with property owners to bring all applicable properties within the Borough up to code within the NFIP.
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Yes. The Borough participated in a FEMA Roadmap Workshop and worked on Risk Map Overlay



Criterion	Response
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	Yes – Always need updates for changing criteria. CRS Updates.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	The Borough participates and is interested in improving its ranking.
How many flood insurance policies are in force in your jurisdiction?*	1,959 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	1,334 total claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$388,798 total payments for losses
Do you maintain a list of properties that have been damaged by flooding?	Yes, Repetitive Loss and Substantial Damage List.
Do you maintain a list of property owners interested in flood mitigation?	Yes, Listing reported within our CRS Certification

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- The Borough, working with NJDEP and USACE, is working to maintain relationship with Army Corps and NJDEP for dune maintenance along the oceanfront via planting dune grass and installing sand fencing.
- There is a continuation of annual review of ordinances and appropriate laws with regard to planning, zoning and code enforcement within the Borough.
- Stone Harbor participates in Sustainable Jersey and has undertaken a number of actions to advance sustainability and resiliency. The Borough has completed the Climate Adaptation: Flood Risk action by comprehensively examining its existing and future flood risk. The Borough also received credit for emergency communications planning and its robust public outreach system. Stone Harbor received credit for a water conservation ordinance that mitigates the drought hazard.

9.11.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of Stone Harbor's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.11-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.11-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 23, 2016	Winter Storm Jonas (Nor'easter)	No. State Designated, yes	Severe winter storm which borough historic flooding to the Borough	Multiple businesses and homes in low-lying areas sustained moderate flood damage



Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
October 27, 2018	Nor'easter	No	Nor'easter brought severe flooding to Borough.	Several businesses sustained moderate flood damage
August 4, 2020	Hurricane/Tropical Storm Isaias	Yes	Tropical Storm conditions, including high winds and heavy rains	Multiple buildings sustained minor wind damage. Widespread trees and wires down.

Source: NOAA NCEI 2020; FEMA 2020; Borough of Stone Harbor 2020

9.11.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of Stone Harbor risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of Stone Harbor.

- Number of repetitive loss (RL) properties: 137
- Number of severe repetitive loss (SRL) properties: 38
- Number of RL/SRL properties that have been mitigated: 44

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.11-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
104th. Street Bridge	Bridge	X	X
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
Borough Hall Communications Tower	Communications Facility	X	X
Stone Harbor Branch Library	County Facilities	X	X
STONE HARBOR ELEMENTARY	Education	X	X
Stone Harbor Branch Library	Library	X	X
Stone Harbor Public Marina	Marinas	X	X
Stone Harbor	Municipal Facilities	X	X
80th Street Well	Potable Water Facilities	X	X
92nd Street Well	Potable Water Facilities	X	X
95th Street Well	Potable Water Facilities	X	X
81st St Pump Station	Wastewater Treatment Facilities	X	X
93rd Street Lift Station	Wastewater Treatment Facilities	X	X
114th Street Lift Station	Wastewater Treatment Facilities	X	X
94th Street Lift Station	Wastewater Treatment Facilities	X	X
STONE HARBOR VOLUNTEER FIRE DEPARTMENT	Fire Stations		X



Name	Type	Exposure	
		1% Event	0.2% Event
101st Street Well	Potable Water Facilities		X
Water Plant	Potable Water Facilities		X
Stone Harbor Police Department	Police Stations		X
STONE HARBOR FIRE HOUSE	Polling Places		X
STONE HARBOR RESCUE SQUAD	EMS		X
BORO OF STONE HARBOR Municipal Hall	Municipal Facilities		X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The Borough has low bulkhead heights along the bayfront. Bulkheads will be required to be eight feet high by 2050 and 6.2 feet high by 2026.
- Stone Harbor experiences nuisance flooding Third Avenue 93rd Street to 99th Street.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Stone Harbor that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Stone Harbor has significant exposure. A map of the Borough of Stone Harbor hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Stone Harbor. The Borough of Stone Harbor has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Borough assented to the proposed hazard ranking.

Table 9.11-13. Borough of Stone Harbor Hazard Ranking Input

Climate Change and SLR	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
High	Medium	Medium	Medium	High	High



Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Medium

9.11.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.11-14. Status of Previous HMP Mitigation Actions

			Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
2015 Action Number	Action Description	Responsible Party		Check if Yes	Enter 2021 HMP Action #
SH-1a (former SH-1a)	Property Mitigation Support – Retrofit	Borough (likely through NFIP Floodplain Administrator)	In Progress	X	2021- StoneHarbor-005
SH-1b (former SH-1b)	Property Mitigation Support – Acquisition/Relocation	Borough (likely through NFIP Floodplain Administrator)	No Progress, not interested in acquisition		
SH-1c	Retrofit or relocate critical facilities in the 100-year floodplain	Borough (likely through NFIP Floodplain Administrator); working with facility manager/operator	In Progress	X	2021- StoneHarbor-006
SH-2 (former SH-2, -4)	Strive to maintain compliance with, and good-standing in the National Flood Insurance program, including continued active participation in incentive-based program.	Borough (primarily through NFIP Floodplain Administrator) & CRS Coordinator	Ongoing Capability		
SH-3 (former SH-3)	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	Borough (through mitigation planning point of contacts)	Ongoing Capability		
SH-4	Train staff or acquire contract support for benefit-cost analysis	Borough (primarily through NFIP Floodplain Administrator and Engineering)	In Progress	X	2021- StoneHarbor-007
SH-5 (former SH-5)	Continue to develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJ OEM	Ongoing Capability		
SH-6 (former SH-6)	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Borough	Ongoing Capability		



Table 9.11-14. Status of Previous HMP Mitigation Actions

			Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
2015 Action Number Action Description		Responsible Party		Check if Yes	Enter 2021 HMP Action #
SH-7 (former SH-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
SH-8 (former SH-8 and SH-22)	Continue to support beach replenishment activities from 98 th to 111 th Streets. This is an ongoing yearly initiative	NJDEP with Borough support	In Progress	X	2021- StoneHarbor-008
SH-9 (former SH-9)	Continue stormwater drainage improvements throughout the Borough to increase capacity.	Borough	In Progress	X	2021- StoneHarbor-009
SH-10 (former SH-10a (CMC-26, BA-8)	Upgrade stormwater system on CR-619 through Stone Harbor and Avalon. Seven stormwater pump stations were installed along CR-619 from Avalon Boulevard to 19 th Street (Avalon business district) to address flooding in this area.	County Engineering with municipalities	In Progress	X	2021- StoneHarbor-010
SH-11 (former SH-11)	Support installation of back-up generator at SH School. Assist in obtaining grants when available.	School Board; with Borough support as appropriate	No Progress	X	2021- StoneHarbor-011
SH-12 (former SH-12)	Remote tide-gages with cameras, using tide gauges at CMC Bridge Comm. and 80 th Street Marina.	Borough	In Progress	X	2021- StoneHarbor-012
SH-13 (former SH-14)	Support private property owner with elevation of The Market (commercial property).	Borough	No Progress		
SH-14 (CMC-14)	Elevate Stone Harbor Boulevard (CR-657) from the Parkway into Stone Harbor proper	County Engineering, with local support	No Progress	X	2021- StoneHarbor-013
SH-15	Maintain relationship with Army Corps and NJDEP for dune maintenance along the oceanfront via planting dune grass and installing sand fencing.	Borough; working with NJDEP and USACE	Ongoing Capability		
SH-16	Continue annual review of ordinances and appropriate laws with regard to planning, zoning and code enforcement within the Borough.	Medium - High	Ongoing Capability		
SH-17	Maintain the 12 outfall pipes along the beachfront of the Borough by regularly cleaning and adding replacement sands to the area for Emergency Access.	High	Ongoing Capability		
SH-18	Continue to work with property owners to bring all applicable properties within the Borough up to code within the NFIP.	Medium - High	Ongoing Capability		
SH-19	Maintain flood siren warning systems throughout the Borough to alert residents in the event of an emergency.	Medium - High	Ongoing Capability		

In addition to the above progress, the Borough of Stone Harbor identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:



- The Borough undertook stormwater improvements to 111th Street to prevent the collection of rainwater at the 111th & Second Street intersection.
- The Borough raised 88th Street adjacent to the bulkhead.
- Stone Harbor Point has been subject to sand replenishment in support of ecological enhancements.
- At 92nd Street as it curves onto Sunset Drive, two storm basins were added in addition to a pipe that ran to 93rd Street to collect and redirect the flow to the 93rd Street bay end outlet and onto the bay.
- During the 95th Street road project between First Avenue to Sunset Drive, storm water basins were added to help collect runoff and move it to the other side of the street. In addition, any old existing basins were removed and replaced. A pipe was added to cross Second Avenue from east to west to change the flow that once flowed to 94th Street, ensuring all ran down 95th Street to end at back bay outlet.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of Stone Harbor participated in a risk assessment workshop in June 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough of Stone Harbor participated in a mitigation action workshop in July 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.11-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Stone Harbor would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.11-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.11-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-StoneHarbor-001	Stone Harbor Hazard Mitigation Initiatives for Land Development	<p>Problem: In 2020, Borough representatives joined the NJ Office of Planning Advocacy, NJ Department of Environmental Protection, and FEMA Region II in the development of land use strategies to mitigate natural hazards in the Borough. The initiative examined the Borough's land development regulations and collaboratively developed recommendations to mitigate flood risk. While Stone Harbor's flood development regulations exceed NFIP requirements, further improvements were acknowledged as critical for fostering resiliency.</p> <p>Solution: The Borough proposes to implement three land use practices: overlay zoning, critical infrastructure protection, and modifying required development application submittals to consider hazards.</p>	New	Flood; Hurricane/Tropical Storm; Nor'easter; Coastal Erosion; Climate Change and Sea Level Rise	1, 3, 4, 6	Stone Harbor Administration; NJDEP; NJOPA; FEMA Region II	Borough funds; existing staff capabilities	Enhanced resilience to natural hazards	None	Short-term	High	LPR	PR
2021-StoneHarbor-002	Bayside Stormwater Pump Station	<p>Problem: The bayfront areas of Stone Harbor the Borough's lowest lying developed areas. Flooding is evident in these areas with water levels as little as one foot above typical high tide. During rain events in conjunction with high tides, runoff cannot discharge through back bay outfalls.</p> <p>Solution: The Borough proposes to construct a bayside stormwater pump station to pump runoff out of flooded streets. Outfalls will also be re-routed to facilitate drainage.</p>	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3	Borough Engineer/Borough Certified Floodplain Manager/Director of Public Works	HMGP; BRIC; Local match	Alleviate flooding in roadways, homes and allow for access to businesses	\$8 million	Less than five years	High	SIP	SP
	Boat Ramp Marina Raising	Problem: The Borough's Boat Ramp at 81st Street is located at elevation	Existing	Flood; Hurricane/Tropical	1, 3	Borough Engineer/Borough	HMGP; BRIC; Local match	Alleviate flooding -	\$500,000	Less than	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-StoneHarbor-003		4.0 NAVD88 datum. Floodwaters enter through boat ramp resulting in flooding of marina parking lot and surrounding area. Solution: The Borough proposes to remove and elevate boat ramp to 6.0 feet and add a flood gate to allow functional use of the ramp and enabling closures during surge events.		Storm; Nor'easter; Climate Change and Sea Level Rise		Floodplain Manager/Director of Public Works		roadways, surrounding properties		two years			
2021-StoneHarbor-004	Bayside Outfall Tide Closure Valves	Problem: Tidal water floods roadways by entering bayside outfalls. Tidal water then backs up through stormwater pipes and inlets and onto streets, causing nuisance flooding. Duck bill valves are currently in place on outfalls to prevent backflow, but do not close during storm events. Solution: Install automated (mechanical) tide valves that close during high tides.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3	Borough Engineer/Borough Certified Floodplain Manager/Director of Public Works	HMGP, BRIC, Borough budget	Alleviate flooding in roadways, homes and allow for access to businesses	\$2 million	Less than two years	High	SIP	SP
2021-StoneHarbor-005 (Former SH-1a)	Property Mitigation Support – Retrofit	Problem: Stone Harbor has a number of repetitive loss, severe repetitive loss, and substantially damaged properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. Progress has been made on elevating buildings and reconstructing new buildings that are more resistant to flooding. Solution: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with substantial damages, repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4	Floodplain Administrator, Homeowners	FMA; HMGP; Owner funds	High	High	Long Term DOF	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.											
2021-StoneHarbor-006 (Former SH-1c)	Critical Facilities Retrofit	<p>Problem: Numerous critical facilities and lifelines in Stone Harbor are located in the Special Flood Hazard Area. The facilities provide crucial services to Stone Harbor and require elevation and floodproofing to continue providing service during future flooding events.</p> <p>Solution: Design and construct improvements to critical facilities or construct new critical facilities that are floodproofed to the 500-year base flood elevation and higher.</p>	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4	Borough (likely through NFIP Floodplain Administrator); working with facility manager/operator	FMA; HMGP; Owner funds; Local match	High	High	Long Term DOF	High	SIP	PP
2021-StoneHarbor-007 (Former SH-4)	Benefit Cost Analysis Training	<p>Problem: Benefit cost analyses help identify and prioritize projects that protect people and property. With climate change and sea level rise posing increasing risks to the Borough, benefit cost analysis training has been identified as a need to assist Borough officials with determining what kinds of infrastructure projects should be pursued.</p> <p>Solution: Train staff or acquire contract support for benefit-cost analysis.</p>	N/A	All Hazards	1, 2, 3, 4, 5, 6	Borough (primarily through NFIP Floodplain Administrator and Engineering); FEMA	Local Budget	Medium	Low	Short term	High	EAP	PI
2021-StoneHarbor-008 (Former SH-8)	Beach Replenishment Innovations	Problem: The Borough has US Army Corps of Engineers-replenished beaches and receives periodic maintenance refurbishments funded by the Borough and NJDEP. Given existing inefficiencies and the maintenance need, alternatives and innovations to existing replenishment projects are desired to	Existing	Hurricane, Nor'Easter, Coastal Erosion, Flooding, Severe Weather	1, 3, 5	NJDEP with Borough support	NJDEP – 75%; Borough – 25%; US Army Corps	High	High	Long term	High	NSP	NR



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		help the Borough retain sand for its beaches and dunes. Solution: Continue to support beach replenishment activities from 98th to 111th Streets and explore innovative options for replenishment.											
2021-StoneHarbor-009 (Former SH-9)	Stormwater Management Enhancements	Problem: Stone Harbor is low-lying and continually experiences nuisance flooding aggravated by stormwater conditions. Drainage improvements have been undertaken throughout the Borough though new and proposed improvements continue to be identified per the Watershed Management Plan and capital improvement plan. Solution: Continue stormwater drainage improvements throughout the Borough to increase capacity.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4, 5	Borough Engineer	Borough funds; BRIC	High	High	Long term	High	SIP	PP
2021-StoneHarbor-010 (Former SH-10)	Seven Mile Island CR-619 Stormwater Improvements (See 2021-CapeMayCounty-018)	Problem: Ocean Drive/Third Avenue in Avalon and Stone Harbor is a major thoroughfare connecting the communities and is the longest and busiest roadway in Avalon and Stone Harbor that is most vulnerable to flooding. Flooding impacts begin with a flood event bringing water levels just one foot above high tide. The removal of outfalls is currently in the design phase. The Borough is currently at 60% Design of new Stormwater Pump Station at 93rd & Third Ave. Solution: Upgrade stormwater system on CR-619 through Stone Harbor and Avalon. Seven stormwater pump stations were installed along CR-619 from Avalon Boulevard to 19 th Street (Avalon business district) to address flooding in this area.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4, 6	County Engineering with municipalities	FEMA HMA grant programs, local match	High	High	Long Term DOF	Medium	SIP	PP
2021-StoneHarbor-	SHES Generator	Problem: The Stone Harbor Elementary School lacks a back-up	Existing	Flood; Hurricane/Tropical	1, 3, 4	School Board; with Borough	FEMA BRIC; School	High-continued	Medium		M-H (DOF)	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
011 (Former SH-11)		generator. The School is a designated critical facility. Solution: Support installation of back-up generator at SH School.		Storm; Nor'easter; Severe Winter Weather; Severe Weather		support as appropriate	Board/Borough funds	functioning of school facility during outages		Long Term DOF			
2021-StoneHarbor-012 (Former SH-12)	Flood Cameras	Problem: The Borough carefully tracks flooding owing to its vulnerability. Several problem areas in the Borough are bellwethers for flooding in the Borough and region as a whole. The ability to remotely sense and view flooding would support life safety and emergency management efforts. Solution: The Borough seeks to install flood cameras at the 96 th Street bridge and at the 81 st Street boat ramp.	New	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise	1, 3, 4	Borough Administration	Local, Coastal Coalition	Medium	Medium	Short term	High	EAP	PI
2021-StoneHarbor-013 (Former SH-13)	Stone Harbor Boulevard Elevation	Problem: Stone Harbor Boulevard (CR-657) is the principal access point into the Borough and stretches from Exit 10 into Stone Harbor proper. The roadway is vulnerable to tidal flooding at levels that exceed two feet above typical high tide. The roadway sees between 5,000 and 6,000 vehicles on average each day and is an evacuation route. Solution: Elevate Stone Harbor Boulevard (CR-657) from the Parkway into Stone Harbor up to the base flood elevation.	Existing	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather	1, 3, 4	County Engineering, with local support	County funds; Local match; BRIC; NJDOT	Continued use of evacuation route and access to Stone Harbor	High	Long Term DOF	Medium	SIP	PP
2021-StoneHarbor-014	Disaster Debris Management Plan	Problem: The Borough lacks a debris management plan. Solution: The Borough will develop and adopt a Disaster Debris Management Plan.	N/A	All Hazards	4, 6	Administration	Municipal budget	Plan in place for debris management	Staff time	1 year	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV Community Assistance Visit
CRS Community Rating System

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program
HMGP Hazard Mitigation Grant Program

Timeline:

The time required for completion of the project upon implementation





DPW Department of Public Works
 FEMA Federal Emergency Management Agency
 FPA Floodplain Administrator
 HMA Hazard Mitigation Assistance
 N/A Not applicable
 NFIP National Flood Insurance Program
 OEM Office of Emergency Management

BRIC Building Resilient Infrastructure and Communities
 Program

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:


- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.11-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-StoneHarbor-001	Stone Harbor Hazard Mitigation Initiatives for Land Development	1	1	1	1	1	1	1	1	0	0	1	1	1	1	12	High 
2021-StoneHarbor-002	Bayside Stormwater Pump Station	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2021-StoneHarbor-003	Boat Ramp Marina Raising	1	1	1	1	1	1	-1	1	0	0	1	1	1	1	11	High
2021-StoneHarbor-004	Bayside Outfall Tide Closure Valves	1	1	1	1	1	1	0	1	1	0	1	1	1	1	12	High
2021-StoneHarbor-005 (Former SH-1a)	Property Mitigation Support – Retrofit	1	1	1	1	1	0	0	0	1	1	1	0	1	0	9	High
2021-StoneHarbor-006 (Former SH-1c)	Critical Facilities Retrofit	1	1	1	1	1	1	0	0	1	1	1	0	1	0	10	High
2021-StoneHarbor-007 (Former SH-4)	Benefit Cost Analysis Training	1	1	1	1	1	1	1	0	1	1	1	1	0	0	11	High
2021-StoneHarbor-008 (Former SH-8)	Beach Replenishment Innovations	1	1	1	1	0	1	0	0	1	1	1	0	1	1	9	High
2021-StoneHarbor-009 (Former SH-9)	Stormwater Management Enhancements	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
2021-StoneHarbor-010 (Former SH-10)	Seven Mile Island CR-619 Stormwater Improvements (See 2021-CapeMayCounty-018)	1	1	1	1	1	0	0	1	0	0	1	0	1	0	9	Medium
2021-StoneHarbor-011 (Former SH-11)	SHES Generator	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High



Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-StoneHarbor-012 (Former SH-12)	Flood Cameras	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-StoneHarbor-013 (Former SH-13)	Stone Harbor Boulevard Elevation	1	0	0	1	1	0	1	1	1	0	1	0	1	0	8	Medium
2021-StoneHarbor-014	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.11-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise	X	X	X		X	X	X	X
Coastal Erosion	X		X	X	X			X
Disease Outbreak			X		X			X
Drought			X		X			X
Flood	X	X	X	X	X	X		X
Hurricane	X	X	X	X	X	X		X
Nor'easter	X	X	X	X	X	X		X
Severe Weather		X	X	X	X	X		X
Severe Winter Weather			X		X			X
Tsunami			X		X			X
Wildfire			X		X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.11-1. Borough of Stone Harbor Hazard Area Extent and Location Map 1

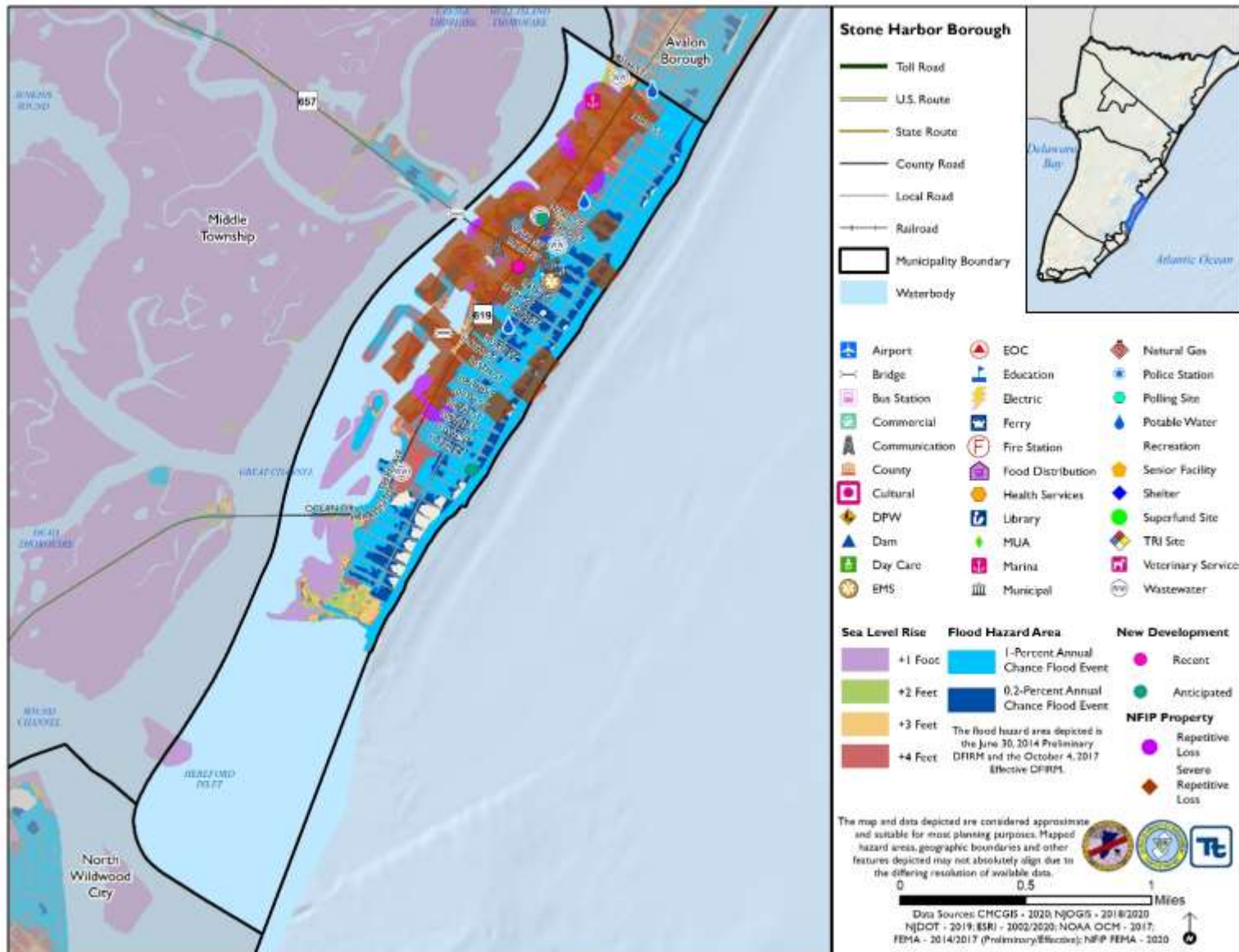




Figure 9.11-2. Borough of Stone Harbor Hazard Area Extent and Location Map 2

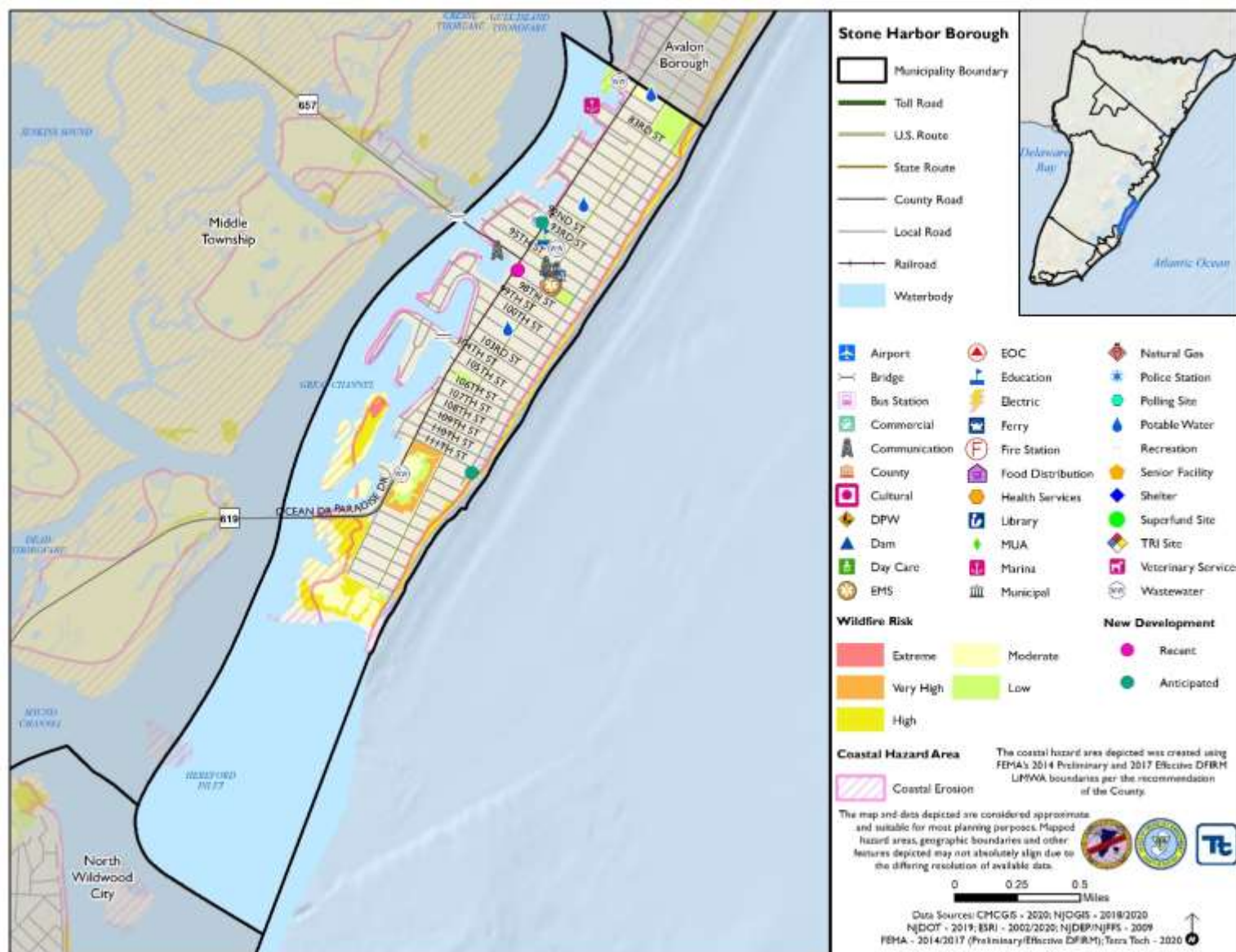
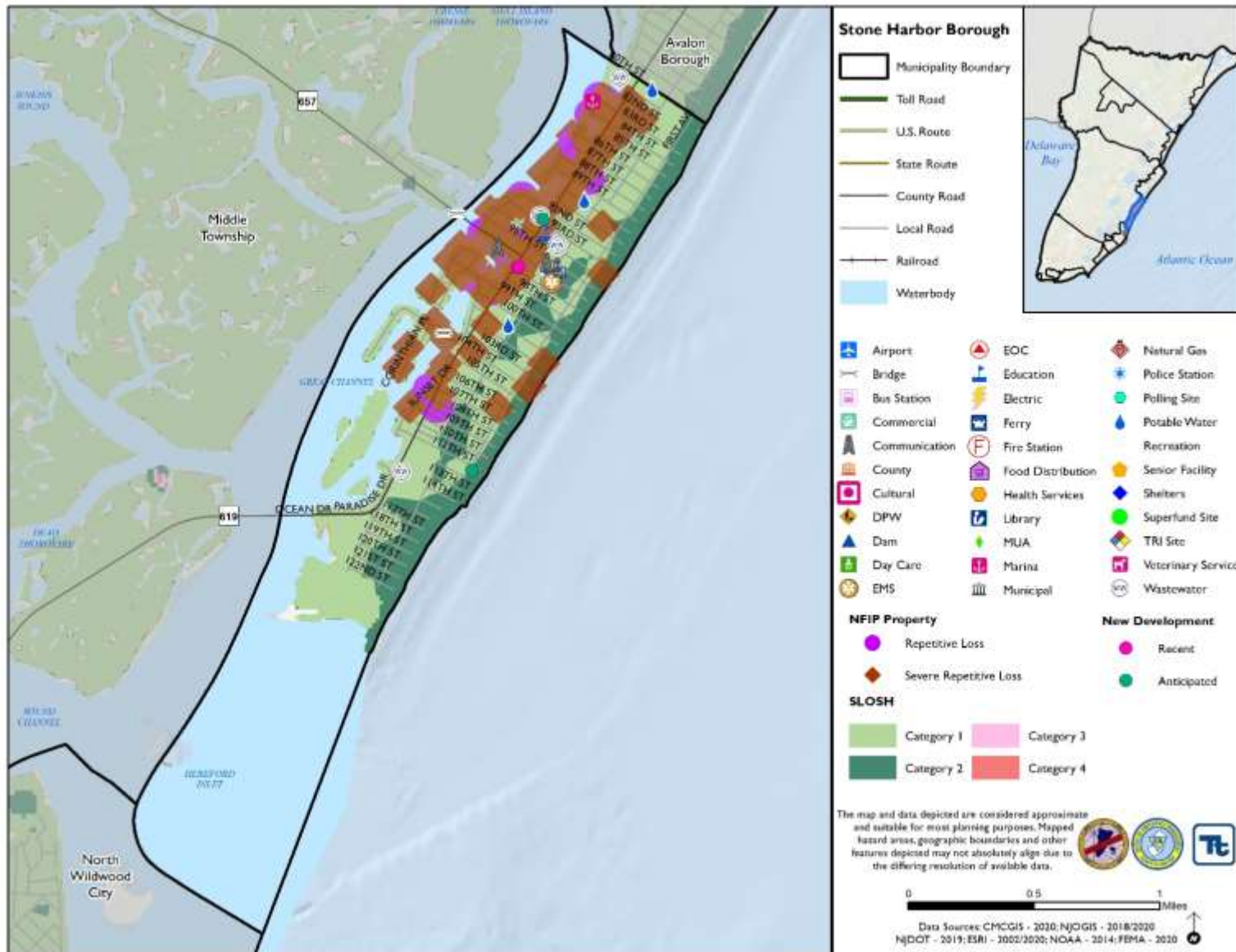




Figure 9.11-3. Borough of Stone Harbor Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Bayside Stormwater Pump Station		
Project Number:	2021-StoneHarbor-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	The bayfront areas of Stone Harbor the Borough's lowest lying developed areas. Flooding is evident in these areas with water levels as little as one foot above typical high tide. During rain events in conjunction with high tides, runoff cannot discharge through back bay outfalls.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough proposes to construct a bayside stormwater pump station to pump runoff out of flooded streets. Outfalls will also be re-routed to facilitate drainage.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base Flood Elevation	Estimated Benefits (losses avoided):	Alleviate flooding in roadways, homes and allow for access to businesses
Useful Life:	30 years	Goals Met:	1, 3
Estimated Cost:	\$8 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	2 Years	Potential Funding Sources:	HMGP; BRIC; Local match
Responsible Organization:	Borough Engineer/Borough Certified Floodplain Manager/Director of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Watershed Management Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Continued flooding
	Remove outfalls and replace with larger outfalls	High	Pumping needed
	Installing actuated tidal valves	High	Pumping needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bayside Stormwater Pump Station	
Project Number:	2021-StoneHarbor-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	0	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather
Timeline	1	
Agency Champion	1	Borough Engineer/Borough Certified Floodplain Manager/Director of Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Boat Ramp Marina Raising		
Project Number:	2021-StoneHarbor-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	The Borough's Boat Ramp at 81 st Street is located at elevation 4.0 NAVD88 datum. Floodwaters enter through boat ramp resulting in flooding of marina parking lot and surrounding area.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough proposes to remove and elevate boat ramp to 6.0 feet and add a flood gate to allow functional use of the ramp and enabling closures during surge events.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100 year	Estimated Benefits (losses avoided):	Alleviate flooding - roadways, surrounding properties
Useful Life:	50 years	Goals Met:	1, 3
Estimated Cost:	\$500,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 Year	Potential Funding Sources:	HMGP; BRIC; Local match
Responsible Organization:	Borough Engineer/Borough Floodplain Manager/Director of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Watershed Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Flooding Continues
	Eliminate Boat Ramp	Low	Loss of access
	Add Flood Gate	Medium	Requires deployment, requires monitoring of flooding conditions
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Boat Ramp Marina Raising	
Project Number:	2021-StoneHarbor-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	Saves on flood insurance claims
Technical	1	Design is underway
Political	1	
Legal	1	Borough owns land
Fiscal	-1	Borough engineer created design- there was an opportunity for open space funding but County was not in favor of boat ramp specifically
Environmental	1	
Social	0	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather
Timeline	1	Project imminent
Agency Champion	1	
Other Community Objectives	1	Master Plan- Recreation goals
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Bayside Outfall Tide Closure Valves		
Project Number:	2021-StoneHarbor-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Tidal water floods roadways by entering bayside outfalls. Tidal water then backs up through stormwater pipes and inlets and onto streets, causing nuisance flooding. Duck bill valves are currently in place on outfalls to prevent backflow, but do not close during storm events.		
Action or Project Intended for Implementation			
Description of the Solution:	Install automated (mechanical) tide valves that close during high tides.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100 year	Estimated Benefits (losses avoided):	Alleviate flooding in roadways, homes and allow for access to businesses
Useful Life:	5 years	Goals Met:	1, 3
Estimated Cost:	2 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Less than two years
Estimated Time Required for Project Implementation:	1.5 Years	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Borough Engineer/Borough Certified Floodplain Manager/Director of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Watershed Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	N/A	Problem Continues
	Consolidate Outfalls	High	May not be feasible
	Add Pump Station	High	Costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bayside Outfall Tide Closure Valves	
Project Number:	2021-StoneHarbor-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	Borough owns all outfalls except for some County-owned
Fiscal	0	The project requires funding support.
Environmental	1	
Social	1	Fewer nuisance flooding events
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	1	Within next year
Agency Champion	1	
Other Community Objectives	1	Stormwater Plan
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Property Mitigation Support – Retrofit		
Project Number:	2021-StoneHarbor-005 (Former SH-1a)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane, Nor'Easter, Flood, Severe Weather		
Description of the Problem:	Stone Harbor has a number of repetitive loss, severe repetitive loss, and substantially damaged properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. Progress has been made on elevating buildings and reconstructing new buildings that are more resistant to flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.		
Is this project related to a Critical Facility or Lifeline?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Level of Protection:	Base Flood Elevation	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Long term
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	FEMA Mitigation Grant Programs (primarily HMGP and FMA); local property owner for match as supported by ICC and other non-Federal match sources as available.
Responsible Organization:	Borough (likely through NFIP Floodplain Administrator)	Local Planning Mechanisms to be Used in Implementation if any:	Building Code, Zoning Code
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate roads	\$500,000+	Elevated roadways would not protect the homes from flood damages
	Install floodwalls around neighborhoods that flood	\$500,000+	Costly; not feasible in all areas that experience flood damage; some homes could still experience damage
Progress Report (for plan maintenance)			



Action Worksheet		
Project Name:	Property Mitigation Support – Retrofit	
Project Number:	2021-StoneHarbor-005 (Former SH-1a)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Properties protected from flooding
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	
Fiscal	0	The project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Hurricane, Nor'Easter, Flood, Severe Weather
Timeline	0	Long term
Agency Champion	1	Borough (likely through NFIP Floodplain Administrator)
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Critical Facility Retrofit/floodproofing		
Project Number:	2021-StoneHarbor-006 (Former SH-1c)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	Numerous critical facilities and lifelines in Stone Harbor are located in the Special Flood Hazard Area. The facilities provide crucial services to Stone Harbor and require elevation and floodproofing to continue providing service during future flooding events.		
Action or Project Intended for Implementation			
Description of the Solution:	Design and construct improvements to critical facilities or construct new critical facilities that are floodproofed to the 500 year base flood elevation and higher.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year flood elevation plus two feet	Estimated Benefits (losses avoided):	High
Useful Life:	Variable	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	FEMA Mitigation Grant Programs (primarily HMGP and FMA); local property owner for match as supported by ICC and other non-Federal match sources as available.
Responsible Organization:	Borough (likely through NFIP Floodplain Administrator); working with facility manager/operator	Local Planning Mechanisms to be Used in Implementation if any:	Capital improvement plan; watershed master plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Relocate CFs	High	Not feasible due to lack of locations
	Floodproof CFs	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Critical Facility Retrofit/floodproofing	
Project Number:	2021-StoneHarbor-006 (Former SH-1c)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect critical services
Property Protection	1	Protect critical facilities from damage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather
Timeline	0	5 years
Agency Champion	1	Borough (likely through NFIP Floodplain Administrator); working with facility manager/operator
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Stormwater Management Enhancements		
Project Number:	2021-StoneHarbor-009 (Former SH-9)		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane, Nor'Easter, Flood, Severe Weather		
Description of the Problem:	Stone Harbor is low-lying and continually experiences nuisance flooding aggravated by stormwater conditions. Drainage improvements have been undertaken throughout the Borough though new and proposed improvements continue to be identified per the Watershed Management Plan and capital improvement plan.		
Action or Project Intended for Implementation			
Description of the Solution:	Continue stormwater drainage improvements throughout the Borough to increase capacity.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High
Useful Life:	50 years	Goals Met:	1, 3, 4, 5
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Long Term
Estimated Time Required for Project Implementation:	This is a yearly initiative through our annual infrastructure upgrades, included in our yearly and long range capital plan.	Potential Funding Sources:	This is a yearly initiative through our annual infrastructure upgrades, included in our yearly and long range capital plan.
Responsible Organization:	Borough Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan; Watershed Management Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevations	High	Does not mitigate flooding completely
	Drainage Improvements	TBD	Alleviates drainage
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Stormwater Management Enhancements	
Project Number:	2021-StoneHarbor-009 (Former SH-9)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Hurricane, Nor'Easter, Flood, Severe Weather
Timeline	0	Long term
Agency Champion	1	Borough Engineer
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Seven Mile Island CR-619 Stormwater Improvements		
Project Number:	2021-StoneHarbor-010		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise		
Description of the Problem:	Ocean Drive/Third Avenue in Avalon and Stone Harbor is a major thoroughfare connecting the communities and is the longest and busiest roadway in Avalon and Stone Harbor that is most vulnerable to flooding. Flooding impacts begin with a flood event bringing water levels just one foot above high tide. The removal of outfalls is currently in the design phase.		
Action or Project Intended for Implementation			
Description of the Solution:	The County will upgrade the stormwater system on CR-619 through Stone Harbor and Avalon.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by design	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 4, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	FEMA HMA grant programs, local match
Responsible Organization:	County Engineering with municipalities	Local Planning Mechanisms to be Used in Implementation if any:	CIP; Local floodplain management plans
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road elevation	High	Not currently feasible
	Drainage Upgrades	High	Less disruptive than elevation
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Seven Mile Island CR-619 Stormwater Improvements	
Project Number:	2021-StoneHarbor-010	
Criteria	2021-StoneHarbor-010	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project will protect roadway from flooding
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	The project is under the county's jurisdiction
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise
Timeline	0	Within five years
Agency Champion	1	County Engineering with municipalities
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	SHES Generator		
Project Number:	2021-StoneHarbor-011 (Former SH-11)		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards, except Wildfire and Coastal Erosion		
Description of the Problem:	The Stone Harbor Elementary School lacks a back-up generator. The School is a designated critical facility.		
Action or Project Intended for Implementation			
Description of the Solution:	Support installation of back-up generator at SH School. Assist in obtaining grants when available.		
Is this project related to a Critical Facility or Lifeline?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	500 Year Flood Level	Estimated Benefits (losses avoided):	High- continued functioning of school facility during outages
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	FEMA BRIC; School Board/Borough funds
Responsible Organization:	School Board; with Borough support as appropriate	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Microgrid	High	Cost prohibitive
	Solar panels	High	Weather dependent
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	SHES Generator	
Project Number:	2021-StoneHarbor-011 (Former SH-11)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of the school
Property Protection	1	Project will protect school from power outages
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	The project is under the school's jurisdiction
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All Hazards, except Wildfire and Coastal Erosion
Timeline	0	Within 5 years
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Stone Harbor Boulevard Elevation		
Project Number:	2021-StoneHarbor-013 (Former SH-13)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather		
Description of the Problem:	Stone Harbor Boulevard (CR-657) is the principal access point into the Borough and stretches from Exit 10 into Stone Harbor proper. The roadway is vulnerable to tidal flooding at levels that exceed two feet above typical high tide. The roadway sees between 5,000 and 6,000 vehicles on average each day and is an evacuation route.		
Action or Project Intended for Implementation			
Description of the Solution:	The County will elevate Stone Harbor Boulevard (CR-657) from the Parkway into Stone Harbor up to the base flood elevation.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Base Flood Elevation	Estimated Benefits (losses avoided):	Continued use of evacuation route and access to Stone Harbor
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	County funds; Local match; BRIC; NJDOT
Responsible Organization:	County Engineering, with local support	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
	Action	Estimated Cost	Evaluation
Alternatives:	No Action	\$0	Current problem continues
	Road abandonment	Low	Loss of access
	Road elevation	High	Continued access during high water events
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Stone Harbor Boulevard Elevation	
Project Number:	2021-StoneHarbor-013 (Former SH-14)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project maintains emergency access to Stone Harbor Boulevard
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	
Political	1	
Legal	0	The project is under the county's jurisdiction
Fiscal	1	The project has funding support
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood; Hurricane/Tropical Storm; Nor'easter; Climate Change and Sea Level Rise; Severe Weather
Timeline	0	Within 5 years
Agency Champion	1	County Engineering, with local support
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	



9.12 TOWNSHIP OF UPPER

This section presents the jurisdictional annex for the Township of Upper. The annex includes a general overview of the Township of Upper; an assessment of the Township of Upper's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.12.1 Staff and Local Stakeholder Involvement in Annex Development

The Township of Upper followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.12-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Paul Dietrich, Municipal Engineer Address: 2100 Tuckahoe Road, Petersburg NJ 08270 Phone Number: (609) 628-2011x244 Email: engineer@uppertownship.com		Name / Title: Scott Morgan, Director OEM Address: 2100 Tuckahoe Road, Petersburg NJ 08270 Phone Number: (609) 628-2011x257 Email: smorgan@uppertownship.com
NFIP Floodplain Administrator		
Name / Title: Paul Dietrich, Municipal Engineer Address: 2100 Tuckahoe Road, Petersburg NJ 08270 Phone Number: (609) 628-2011x244 Email: engineer@uppertownship.com		
Name	Title	Method of Participation
Paul Dietrich	Township Engineer	Primary point of contact, NFIP floodplain administrator, annex preparation, meeting attendance, reviewed and signed off on annex
Scott Morgan	Township Administrator	Alternate point of contact, annex preparation, meeting attendance, took stakeholder survey, reviewed and signed off on annex
Richard Palombo	Mayor	Reviewed and signed off on annex
Barbara Ludy	Fiscal/CFO	Reviewed and signed off on annex
Craig Reeves	Superintendent	Reviewed and signed off on annex
Theodore Cooper Jr.	Construction/Building Code Official	Reviewed and signed off on annex
John C. (Jay) Newman	Fire Department	Reviewed and signed off on annex
Stephen Schaffer	Fire Chief, Seaville Fire Rescue	Took stakeholder survey



9.12.2 Jurisdiction Profile

The Township of Upper is located on the northernmost portion of Cape May County, New Jersey. It is bounded on the 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.



According to the U.S. Census, the 2010 population for the Township of Upper was 12,373. The estimated 2018 population was 11,909, a 3.75 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 4.6 percent of the population is 5 years of age or younger and 17.9 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.12.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.12-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.12-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.12-2. Recent and Expected Future Development

Type of Development	2015	2016	2017	2018	2019
Number of Building Permits for New Construction Issued Since the Previous HMP					
Single and Two-Family Units	9	12	11	14	21
Multi-Family	0	0	2	0	2
Other (commercial, mixed-use, etc.)	1	0	1	1	1
Property or Development Name	Type of Development	# of Units / Structures	Location (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development
Recent Major Development and Infrastructure from 2015 to Present					
Osprey Cove	Residential	110	2058 Route-US 9 South	N/A	Mobile Home Park is 90% complete
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Heritage Acres	Residential	133	550 Tuckahoe Road	N/A	Mobile Home Park

* Only location-specific hazard zones or vulnerabilities identified.



New homes constructed in the floodplain are required to have two feet of freeboard to the lowest horizontal member in both the AE and V Zones. Homes in the Resort Residential District are required to have a minimum garage/ ground floor elevation of 7.0 NAVD 1988.

9.12.4 Capability Assessment

The Township of Upper performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.12.4). The Township of Upper identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.12-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Building and Housing, Chapter 10, adopted by the Township Committee in 1976 and amended through 2019. 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.The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code.					
Zoning Code	Yes	State & Local	Yes – if municipality	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
			has a Planning Board		
Comment: <ul style="list-style-type: none"> State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. Zoning, Chapter 20, adopted by Township Committee in 2002 and amended through 2019. 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. This Flood Damage Control, Chapter 18 incorporates controls and protection methods from other sections of the Code related to flood hazards and Stormwater Control, Chapter 19-7.7 incorporates controls and protection methods for stormwater management 					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Council in 2002 and amended through 2019. 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. Flood protection methods and stormwater controls are covered extensively in Chapter 18 and 19-7.7. 					
Stormwater Management	Yes	Local (State & County based on project)	Yes	Yes	-
Comment: <ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Council in 2002 and amended through 2019. While not a separate Ordinance, Stormwater controls are covered in a comprehensive manner in the Site Plan section 79-7.7. 					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none"> N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. Real Estate disclosure of flood and other hazards could become an Ordinance Requirement for transfers of title and/or a written policy for disclosing a property's Flood information. Also, providing flood insurance information for impacted properties could be an additional requirement the Township may want to consider. It should be noted that Section 18-1.2 of the Township's Flood 					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>Damage Control Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard.</p> <ul style="list-style-type: none">Township adopted ordinance in December 2020 requiring a Flood Compliance Certificate at time of transfer of sale of a property in the special flood hazard area. An inspection is required to inspect areas below base flood to determine if there is any change to the non-habitable space.					
Growth Management	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance, Chapter 20; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.Plan Endorsement Petition, adopted by the Township Planning Board on November 16, 2006. 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. The Township is currently working with the NJOSG to recertify the Upper Township's CentersWastewater Management Plan, Municipal Buildout Report, dated January 15, 2019. This analysis has been prepared in order to assess the amount of remaining developable lands within the Township of Upper and to assess the amount of potential development, if these lands were fully developed to their maximum potential. Utilizing GIS (geographic information system) technology, the amount of developable land has been assessed based on lot area and bulk requirements as compared to the minimum requirements of each individual zone district.					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Council in 2002 and amended through 2019. 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.Flood protection methods and stormwater controls are covered extensively in the Subdivision Section of this Chapter.					
Environmental Protection	Yes	Local	No	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">Land Subdivision, Site Plan and Land Use Administration, Chapter 19, adopted by the Township Council in 2002 and amended through 2019. 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					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
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.					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.Flood Damage Control, Chapter 18, approved by the Township Committee in 1987 and amended through 2017. 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.In order to accomplish its purposes, this Chapter includes methods and provisions for: Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; Controlling filling, grading, dredging and other development which may increase flood damage; and Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.New construction and substantial improvement of any residential structure, commercial, industrial or other nonresidential structure located in an A or AE Zone shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor, including basement and utilities (electrical, heating, ventilation, plumbing, duct work and air-conditioning equipment), be elevated two feet above the flood protection elevation.					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	No	-	No	-	-
Comment:					
Sea Level Rise	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Construction of Bulkheads, Chapter 17, approved by the Township Committee in 2015 and amended through 2018. 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.					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">This Chapter sets minimum standards for bulkhead construction and minimum heights for bulkheads that vary according to their location within different Flood Hazard Areas in the Township.					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.Master Plan 1993, adopted by the Township Planning Board January 27, 1994 and 2020 Master Plan Re-examination Report and Master Plan Update. 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 developmentThe Township is currently taking the necessary steps to extend their Plan Endorsement with the Office of State Planning. The Township's State endorsed centers are set to expire on June 30, 2020 and have been extended during the COVID-19 State of Emergency. The Township has decided to pursue extending their Plan Endorsement for the designated areas under the jurisdiction of the State Plan. This decision will protect the planning and designations of centers and development areas that were completed through the original Plan Endorsement process.					
Capital Improvement Plan	No	-	No	-	-
Comment:					
Disaster Debris Management Plan	Yes	-	No	-	-
Comment: <ul style="list-style-type: none">Upper Township has established two Temporary Debris Management Areas (TDMA) and were approved by the NJDEP on January 16, 2018.10 Sunset Drive is setup to accept Vegetative Debris, Construction & Demolition Debris and Bulky Solid Wasted1060 Stagecoach Rd is setup to accept E-Waste and White Goods					
Floodplain or Watershed Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Annual Progress Report, Floodplain Management Planning, September 16, 2019. 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.The Plan includes amendments that should be made to actions included in the June, 2016 Plan that would carry-over into the HMP update.					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.</p> <ul style="list-style-type: none">Township of Upper Stormwater Management Plan, dated January 12, 2005, revised November 16,2006. 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.The goals of this MSWMP are to: reduce flood damage, including damage to life and property; minimize, to the extent practical, any increase in stormwater runoff from any new development; reduce soil erosion from any development or construction project; assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures; maintain groundwater recharge; prevent, to the greatest extent feasible, an increase in nonpoint pollution; maintain the integrity of stream channels for their biological functions, as well as for drainage; minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; and protect public safety through the proper design and operation of stormwater basins. To achieve these goals, this plan outlines specific stormwater design and performance standards for new development.					
Stormwater Pollution Prevention Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.Stormwater Pollution Prevention Plan, updated 04-29-20. The Plan consists of the updated annual reporting forms required by the Rule.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	-	No	-	-
Comment: <ul style="list-style-type: none">Conservation Plan Update, adopted by the Township Planning Board, February 17, 2011. 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.Recommended Strategies for Floodplains in the Plan include; Continue to pursue and promote the preservation of open space, through municipal, county, state or not-for-profit entities, to protect natural floodplains. Naturally vegetated riparian corridors help reduce the extent of flooding; that the Township has a Flood Damage Control Ordinance in place, which includes provisions for flood hazard reduction in the Township. The Township should continue to enforce these provisions in order to implement the Goals and Objectives listed above; and that the Township should consider amending its Flood Damage Control Ordinance to provide additional level of protection to homes in the Special Flood Hazard Area, which would provide protection to homes and provide lower flood insurance premiums.					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">This Conservation Plan Element, together with the Upper Township Natural Resources Inventory (NRI), addresses the MLUL guidelines. The NRI was adopted by the Township of Upper Planning Board on November 16, 2006. It provides a detailed inventory of the Township's natural assets and environmental resources. The NRI serves to inform the planning process by providing a factual basis for land use decision-making.					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	Local & State	Yes – if located in a coastal zone	Yes	-
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.NJ Resilient Coastline Initiative, no date. The Plan addresses shoreline initiatives for the Township, such as Living Shorelines, including Marsh Sills and Breakwaters. The creation of living shorelines 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. The Plan also recommends potential funding sources for the Shoreline project.The Township protects the shoreline through two mechanisms:<ul style="list-style-type: none">Sand Dune Regulations, Chapter 3-4, which prohibits construction beyond the Dune Line;The Township has ownership or perpetual open space easements on all beach properties in Strathmere.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	-	No	-	-
Comment: <ul style="list-style-type: none">Adopted a Community Forestry Plan in 2016.					
Transportation Plan	Yes	State & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Complete Streets. The Township adopted a Resolution in 2019 endorsing a complete streets policy for Township of Upper.Upper Township, Bicycle Plan, no date. Upper Township in Cape May County has developed a bicycle plan as part of the New Jersey Department of Transportation's (NJDOT) Local Bicycle/Pedestrian Planning Assistance Program, which seeks to foster the development of non-motorized transportation modes in accordance with statewide goals and local needs.In 2016, Upper Township requested a review of bicycle conditions along North Shore Road (formerly US Route 9) between Roosevelt Boulevard and Harbor Road, as well as conditions along Harbor Road connecting to the soon to be completed multi-use facility along the new Great Egg Harbor Bridge. Following an initial review of this corridor, the study scope was expanded to include an analysis of on- and off-road bicycle conditions throughout the Township. This report 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.The Planning Board adopted the Upper Township Bicycle Plan in April 2019.Traffic Analysis Report, dated November, 2012. A comprehensive traffic analysis was performed to assess the traffic impacts associated with the Marmora Village Center redevelopment					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Getting to Resilience, dated April, 2015. While going through GTR municipal officials identified infrastructure projects that have been planned and implemented as resiliency strengths. Some of these projects include raising the low point of roads along the bayside of Strathmere by 1.5 feet, working with the county to raise Tuckahoe Road to the 100 year storm level, and attaining a grant continue living shoreline along on the bayside of Strathmere, South of the boatramp. By June of 2015 the Township has successfully raised one road in Strathmere. Officials also identified that the Township is participating in FEMA's Community					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>Rating System (CRS) and has reached a class 5, meaning that National Flood Insurance Program flood insurance premiums receive a 25% discount. During Sandy Upper Township was able to shelter Township residents as well as additional residents from Ocean City. One thing the Township is working on to improve their shelters is attaining a mobile kitchen that can supply food to the shelters and thereby make the shelters more self-sufficient and resilient.</p> <ul style="list-style-type: none">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.					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.Emergency Operations Plan, approved by the State Emergency Management Section on February 24, 2017 and valid through February 28, 2021.The Municipal Emergency Manager, with support from the County OEM and New Jersey OEM, are continuing to develop, enhance, and implement existing emergency plans.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.12-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes; Construction and Zoning Office
Does your jurisdiction have the ability to track permits by hazard area?	No



Criterion	Response
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. Maintained on GIS. Buildout was prepared as part of the 2019 Wastewater Management Plan Update

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Township of Upper.

Table 9.12-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board; Zoning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Green Team
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Onsolve/ CodeRED Flood Warning System for Strathmere
Maintenance program to reduce risk	Yes	Public Works/Engineering
Mutual aid agreements	Yes	Ocean City. The Township is creating, enhancing, and maintaining mutual aid agreements with neighboring communities.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning Office/Public Works
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 training in benefit/cost analysis	No	-
Staff with training in green infrastructure	Yes	Engineering
Staff with education/knowledge/training in low impact development	Yes	Engineering
Surveyor	Yes	Consultant on contract for Tax Map & GIS updates
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Engineering
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	Yes	Consultant – Stockton Coastal Resource Center
Emergency manager	Yes	OEM
Watershed planner	Yes	Consultant – Stockton Coastal Resource Center
Environmental specialist	Yes	Consultant – ARH (LSRP services)
Grant writers	No	-
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY





The table below summarizes financial resources available to the Township of Upper.

Table 9.12-6. Fiscal Capabilities

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

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Township of Upper.

Table 9.12-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes – have dedicated pages for Hazard Mitigation Plan, Stormwater Management and Floodplain Management
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes, Facebook
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes – Upper Township Green Team
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	YES, CERT program training

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Township of Upper.

Table 9.12-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	5	5/1/2017
Building Code Effectiveness Grading Schedule (BCEGS)	Building Code Effectiveness Grading Schedule (BCEGS)	4 Residential 3 Commercial	12/6/2018
Public Protection (Fire ISO Protection Class)	Yes	District 1 – 6 District 2 – 8B-10 District 3 – 3/3Y District 4 5/5Y	Unknown
Storm Ready Certification	Yes	StormReady	9/10/2019



Program	Participating?	Classification	Date Classified
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	12/12/2019

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to sea level rise; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.12-9. Adaptive Capacity of Sea Level Rise

Hazard	Adaptive Capacity (Capabilities) – Strong/Moderate/Weak
Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Medium
Wildfire	Medium

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The Township has access to resources to determine the possible impacts of sea level rise. The Engineering office can produce the GIS based maps to show future impacts and extent of sea-level rise.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.12-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering & Construction
Who is your floodplain administrator? (name, department/position)	Paul Dietrich, Municipal Engineer, Floodplain Manager, CRS Coordinator
Are any certified floodplain managers on staff in your jurisdiction?	Yes, municipal engineer
What is the date that your flood damage prevention ordinance was last amended?	10/2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	March 16, 2016
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No



Criterion	Response
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Yes, FEMA Region II NY & NJ Coastal Restudy
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes, currently Class 5 and working towards Class 4 during upcoming recertification in 2021
How many flood insurance policies are in force in your jurisdiction?*	435 Policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	384 closed paid losses
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$352,650 closed paid losses
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- Upper Township is a Bronze certified community by Sustainable Jersey. One of the Township's credited activities is the identification and outreach to vulnerable populations.
- The Township is identifying flood preparedness activities for the Township's CRS program.
- The Township is implementing the recommendations of the Getting to Resilience report.

9.12.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Township of Upper's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.12-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.12-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	Jonas (DR-4264)	Yes	A severe winter storm struck the mid-Atlantic region, bringing significant snowfall as well as coastal flooding to Cape May County.	Strathmere <\$100,000 from Jonas for property/flooding. General cleanup/flooding
August 2, 2020	Tropical Storm Isaías (Tornado)	Yes	Tropical Storm Isaías moved up the coast and during its landfall it spawned a tornado (EF1) that made landfall at approximately the 23.8 mile marker on GSP and moved S.E. to N.W. through the Marmora business district	Structural damage to over 20 residential and commercial structures; Severe tree damage; \$1,400,000 Private Sector Damage; \$204,500 Public Sector Damage.



Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
			crossing the 500 block of Shore Road and 300 Block of Stagecoach Road	

Source: NOAA NCEI 2020, FEMA 2020

9.12.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Township of Upper risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Township of Upper.

- Number of repetitive loss (RL) properties: 36
- Number of severe repetitive loss (SRL) properties: 7
- Number of RL/SRL properties that have been mitigated: 13

Source: FEMA 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.12-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	1% Event	Exposure 0.2% Event
Strathmere Vol. Fire Co.	Fire Station	X	X
NJAW – Water Tower and Public Well	Wells	X	X
Longport Media Tower	Communications Tower	X	X
ACE Sub-Station BL England	Electric Sub-Station		X
Ace Sub-Station W. of Wilkie Blvd	Electric Sub-Station		X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their 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 43 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 areal flooding when breached.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 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.



- 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.
- 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 Boatramp has been eroding and destroying the marsh. The marsh area creates a buffer to lessen the impact of wave energy and flooding to Strathmere.
- Bayview Drive is the street closest to the Bay in Strathmere. The road requires reconstruction, which is currently underway.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Upper that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Upper has significant exposure. A map of the Township of Upper hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Township of Upper. The Township of Upper has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township assented to the proposed hazard ranking.

Table 9.12-13. Township of Upper Hazard Ranking Input

Sea Level Rise	Coastal Erosion	Disease Outbreak	Drought	Flood	Hurricane
Medium	Medium	Medium	Medium	High	High

Nor'easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	High

9.12.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS





The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.12-14. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update? Check if Yes	Enter 2020 HMP Action #
TU-1a (former TU-1a)	Support retrofits (e.g. elevation) of floodprone structures, with repetitive loss and severe repetitive loss properties as priority.	Township (likely through NFIP Floodplain Administrator); State OEM, County OEM	No Progress, did not receive funding from FEMA in 2018 and 2019.	X	2020-UpperTwp-001
TU-1b (former TU-1b)	Support acquisition/relocation of floodprone structures, with repetitive loss and severe repetitive loss properties as priority	Township (likely through NFIP Floodplain Administrator); State OEM, County OEM	No Progress	X	2020-UpperTwp-002
TU-2 (former TU-2 (CMC-2)	Continue local and regional efforts to achieve CRS Class 6.	Township	Ongoing Capability, Received CRS Class 5; continue to improve CRS Class level		
TU-3 (former TU-5)	Continue to develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing Capability		
TU-4 (former TU-6)	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Township	Ongoing Capability		
TU-5 (former TU-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
TU-6 (former TD-8)	Continue to conduct beach replenishment to maintain minimum beach profile for storm protection (maintain their Engineered Beach).	Town, with support from NJDEP	Project is now coordinated with the USACE project.		
TU-7 (former TD-9)	Reconstruct Bayview Drive in Strathmere for drainage improvements.	Township	In Progress	X	2020-UpperTwp-
TU-8 (former TD-11)	Conduct a study of bulkhead to determine substandard (lower than 7.5') or non-existent bulkheads	Township	Completed		
TU-9 (former TD-12)	Develop and implement projects to install and/or upgrade bulkheads, based on the results of the TU-11 study	Township	In Progress. Township has upgraded two Township owned bulkheads.	X	2020-UpperTwp-003
TU-10 (former TU-13 (CMC-28, SIC-8)	Install permanent protection to CR-619, from the Whale Beach area in Sea Isle City to the Strathmere section of Upper Township, to replace the existing GeoTube installed in the late 1990s. The GeoTube is beyond its design life.	County and ACOE, with municipal support	No Progress	X	2020-UpperTwp-004
TU-11 (former	Upgrade existing revetment wall (needs to be extended to the south	County Engineering	In Progress. County has extended the revetment wall.	X	2020-UpperTwp-005



Section 9.12 - Township of Upper

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
				Check if Yes	Enter 2020 HMP Action #
TU-14 (CMC-29, OC-13)	and existing sections upgraded) and provide additional road protection to CR-619 in Strathmere to Ocean City, and elevate sections of road as needed.		Continue work on elevating road for evacuation and constructing living shoreline project.		
TU-12 (former TU-15 (CMC-30))	Intersection of Roosevelt Boulevard (CR-623) and the Garden State Parkway (Upper Township) – Roosevelt Boulevard. Elevate roadway and ramps, which will first require elevation of the Parkway bridge overpass.	NJTPA, County Engineering	No Progress	X	2020-UpperTwp-006
TU-13 (former TU-16 (CMC-31))	Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.	County Engineering	No Progress	X	2020-UpperTwp-007
TU-14 (former TU-17 (CMC-33))	Elevate Tuckahoe Road (CR-636) from Butter Road to CR-610. A conceptual design for this project is available.	County Engineering with municipal support	No Progress	X	2020-UpperTwp-008
TU-15 (former TU-18 (CMC-34))	Work with the State DOT to address vulnerabilities on SR-50 along Cedar Swamp Creek.	State DOT with County and municipal support	In Progress. NJDOT is progressing with design plans for new bridge. Approaches will not be raised to flood elevation.	X	2020-UpperTwp-009
TU-16 (former TU-19 (CMC-35) and TU-24)	Develop an engineering solution for severe flooding problems along CR-650 and Hope Corson Road (CR-671). County has design work on this project, except for drainage issues at western end of Route 50.	County Engineering with municipal support	Completed. County completed project in 2019/2020		
TU-17 (former TU-20)	Address localized flooding on Evergreen Drive and Stagecoach Road. Part of the problem here is sand/silt infiltration into the drainage system exacerbated by the local sand plant.	Township	No Progress		
TU-18 (former TU-21 (CMC-41))	Identify proper locations for and install water draw (siphon) stations to increase fire-fighting capabilities.	County Fire and OEM with support from local fire and OEM	No Progress		
TU-19 (former TU-22 (CMC-61, OC-31))	Install shore protection along Ocean Drive (CR619) at Corsons Inlet in Upper Township and Ocean City	County Engineering with municipal support	No Progress	X	2020-UpperTwp-010
TU-20 (former TU-25 (CMC-69))	Become a National Fire Protection Association (NFPA) "Firewise" community.	Local Fire Chiefs working with County Fire Coordinator	No Progress	X	2020-UpperTwp-011
TU-21	Enhanced Wildfire Public Awareness and Education	Local Fire Chiefs	No Progress	X	2020-UpperTwp-012
TU-22	Critical facilities should be equipped with emergency power sources to maintain their critical mission during loss or interruption of power due to flood or wind.	Township	Completed. All critical Township facilities have emergency power sources.		



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2020 HMP Update?	
				Check if Yes	Enter 2020 HMP Action #
TU-23	The Garden State Parkway should be elevated 1' above the base flood elevation.	Garden State Parkway	In Progress. Township has had discussion with the Garden State Parkway	X	2020-UpperTwp-013
TU-24	The tidal creeks that flow under the Garden State Parkway should be controlled with flood gates to prevent tidal flooding on the West side of the Garden State Parkway.	Garden State Parkway	In Progress. Township has had discussion with the Garden State Parkway		
TU-25	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.	Township	No Progress	X	2020-UpperTwp-014
TU-26	Extend outfall pipe at Seacliff Ave & Strathmere Bay	Township	No Progress	X	2020-UpperTwp-015
TU-27	Identify flood preparedness activities for the Township's CRS program.	Township	Ongoing capability		
TU-28	Develop a Program for Public Information (PPI)	Township & Coastal Coalition	Completed. Township coordinates PPI with the NJ Coastal Coalition Regional MJPI		
TU-29	Flood warning system	Township	In Progress. Township has installed system at Webster Ave. Township should evaluate for possible other locations.	X	2020-UpperTwp-016
TU-30	Backbay Dune system to prevent tidal flooding in Strathmere & Whale Beach	Township, Conservation Organizations, NJDEP & USACE	No Progress		
TU-31	Implement the recommendations of the Getting to Resilience report.	Township	Ongoing Capability		
TU-32	Install gates at Garden State Parkway Entrance/Exit for reverse lane operation	Township/ County OEM	No Progress		

In addition to the above progress, the Township of Upper identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- A Beach Replenishment was completed by the USACE in November 2019.
- The Township installed a living shoreline at the Bayview Ave Boat Ramp.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Upper participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Upper participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.



Table 9.12-15 summarizes the comprehensive-range of specific mitigation initiatives the Township of Upper would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.12-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.12-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-UpperTwp-001 (Former TU-1a)	Structure Retrofits and Elevation	<p>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 43 unmitigated repetitive loss/severe repetitive loss properties spread throughout the Township.</p> <p>Solution: The Township proposes the retrofit and elevation of existing structures in the Special Flood Hazard Area.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1	Township of Upper FPA; Private Owners	NJDCA; FEMA-FMA; Private funds	High - Reduced risk of property damage from flooding	High	12 – 18 Months	High	SIP	PP
2020-UpperTwp-002 (Former TU-1b)	Vulnerable Structure Acquisition	<p>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.</p> <p>Solution: The Township proposes to acquire certain structures in vulnerable, floodprone areas of the Township.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1, 5	Township of Upper FPA; NJDEP Blue Acres; Property owners	Township Funds; Blue Acres; FEMA FMA	High - Eliminate risk of property damage from flooding	High	Long Term	High	SIP	PP
2020-UpperTwp-003 (Former TU-9)	Bulkhead Upgrades	<p>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 areal flooding when breached.</p> <p>Solution: Institute upgrades based on the Township's bulkhead inventory and study.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1, 4	Township of Upper Administration; Private Owners	NJDCA; BRIC; Private Funds; Township Funds	High-continued protection of landward properties and wave attenuation	High	Short Term	Medium	SIP	PP
2020-UpperTwp-004 (Former TU-10)	CR-619 Protection	<p>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.</p> <p>Solution: The County will install protection to the roadway to prevent flood and erosion damages.</p>	Existing	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4	Cape May County; Township of Upper Administration	BRIC; County Funds; Township Funds	High-continued access and mobility in Strathmere	High	Long Term	Medium	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-UpperTwp-005 (Former TU-11)	CR-619 Revetment Wall	<p>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.</p> <p>Solution: Undertake improvements to the existing revetment wall to enhance the level of protection and maintain utility of the roadway.</p>	Existing	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4	Cape May County; NJDEP; Township of Upper;	NJDEP; County Funds; BRIC	High-continued access and mobility in Strathmere	High	Long Term	Medium	SIP	SP
2020-UpperTwp-006 (Former TU-12)	Roosevelt Boulevard Ramp Elevations	<p>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.</p> <p>Solution: The roadway, ramps, and overpass bridge require elevation in order to continue providing access during flooding conditions.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4	Township of Upper Administration; Cape May County; NJ Turnpike Authority	NJTA capital funds; Cape May County funds; BRIC	High-continued access and utilization during flooding events for a major population center	High	18-24 Months	High	SIP	SP
2020-UpperTwp-007 (Former TU-13)	Roosevelt Boulevard Elevation	<p>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).</p> <p>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.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4	Cape May County; Township of Upper Administration; NJDEP	County Funds; NJDOT Local Aid; BRIC	High-enhanced level of protection during flooding conditions and sea level rise.	High	Long Term	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020-UpperTwp-008 (Former TU-14)	Tuckahoe Road Elevation	<p>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.</p> <p>Solution: Elevate Tuckahoe Road to a higher elevation. A conceptual design for the project has already been completed.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4	Cape May County; Township of Upper Engineer; NJDEP	County Funds; NJDOT Local Aid; BRIC	High-continued functionality of an evacuation route	High	Long-term	High	SIP	SP
2020-UpperTwp-009 (Former TU-15)	Route 50 Elevation	<p>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.</p> <p>Solution: The Township proposes to collaborate with NJDOT to increase the elevation of Route 50 and address acute vulnerabilities.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4	NJDOT, Township of Upper Administration	NJDOT Transportation Trust Fund; BRIC	High-continued functionality of an evacuation route	High	2-4 Years	High	SIP	SP
2020-UpperTwp-010 (Former TU-19)	Ocean Drive Shore Protection	<p>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.</p> <p>Solution: Develop a shore protection solution that offers an enhanced level of protection for the roadway and enhances adjacent wetlands habitat.</p>	Existing	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm	1, 3, 4, 5	County Engineering; NJDEP; Township of Upper Administration	County Funds; NJDOT Local Aid; BRIC	High-continued functionality of an evacuation route	High	12-18 months	Medium	SIP	SP
2020-UpperTwp-011 (Former TU-20)	Firewise Program Participation	<p>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</p>	Existing	Wildfire	1, 2, 3, 4, 5, 6	NJ State Forest Fire Service; Cape May County Fire Chiefs	Existing Township funds	High-Improved local capabilities to	Low	Short	Low	EAP	PI



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		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.				Association; Upper Twp fire districts; Township of Upper Administration		manage wildfire risk					
2020-UpperTwp-012 (Former TU-21)	Enhanced Wildfire Protection	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.	Existing	Wildfire	1, 2, 3, 4, 5, 6	NJ State Forest Fire Service; Cape May County Fire Chiefs Association; Upper Twp fire districts; Township of Upper Administration	Existing Township funds	High-Improved local capabilities to manage wildfire risk	Low	Short	Low	EAP	PI
2020-UpperTwp-013 (Former TU-23)	Garden State Parkway Elevation	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	Existing	Flood, Hurricane, Nor'easter	1, 4, 6	Garden State Parkway, Township of Upper Administration	NJHA, BRIC	High	High	Long-term	Medium	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		enhanced by ensuring a higher level of protection.											
2020-UpperTwp-014 (Former TU-25)	Storm Shelter Retrofit	<p>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.</p> <p>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</p>	Existing	All hazards	1, 3, 4	Township OEM	BRIC; Township funds; BOE funds	High	High	Long-term	Medium	LPR/SIP	ES
2020-UpperTwp-015 (Former TU-26)	Seacliff Ave Outfall	<p>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.</p> <p>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.</p>	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm; Severe Weather	1	Township Engineer	Local; HMGP	Increase d drainage, reduction in clogging	Medium	Short	High	SIP	SP
2020-UpperTwp-016 (Former TU-29)	Flood Warning System	<p>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.</p> <p>Solution: Install 3-4 additional flood warning gauges to create a better network for notifying the public when flooding is impending.</p>	New	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm; Severe Weather	1, 2, 4	Township OEM	Township funds; HMGP	High	Medium	Short	High	EAP	PI/PP
2020-UpperTwp-017	Dry-Floodproof Strathmere Fire Hall	Problem: The garage area where the Strathmere Fire Co stores their equipment and parks the fire apparatus is below the base	Existing	Sea Level Rise; Flood; Nor'easter;	1, 3, 4	Township OEM, Fire Company	HMGP; FMA; Fire	Medium	\$75,000	Short	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		flood elevation. During Superstorm Sandy, water just covered the garage floor. Solution: Dry-floodproof the garage doors and exterior walls.		Hurricane and Tropical Storm; Severe Weather			District Funds						
2020-UpperTwp-018	Living Shoreline/Marsh Protection Zone	Problem: The shoreline south of Bayview Dr Boatramp 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: Study needs to be performed to determine how to reconstruct the shoreline and restore its natural function. Construct a living shoreline along the area.	New	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm	1, 5	Township Administration	BRIC; NJDEP; FWS; NFWF	Reduced erosion and enhanced ecosystem services.	TBD	Long	Medium	NSP	NR
2020-UpperTwp-019	Bayview Drive Reconstruction	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.	Existing	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm; Severe Weather	1, 4, 6	Township DPW	Township Funds	Continue d/enhanced functionality of road	\$175,000	Short	High	SIP	PP

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.






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

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.12-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2020-UpperTwp-001 (Former TU-1a)	Structure Retrofits and Elevation	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High 
2020-UpperTwp-002 (Former TU-1b)	Vulnerable Structure Acquisition	1	1	1	1	1	0	0	1	0	1	1	0	1	1	10	High
2020-UpperTwp-003 (Former TU-9)	Bulkhead Upgrades	0	1	1	1	1	1	0	1	1	1	1	1	1	0	11	High
2020-UpperTwp-004 (Former TU-10)	CR-619 Protection	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-005 (Former TU-11)	CR-619 Revetment Wall	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-006 (Former TU-12)	Roosevelt Boulevard Ramp Elevations	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-007 (Former TU-13)	Roosevelt Boulevard Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-008 (Former TU-14)	Tuckahoe Road Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-009 (Former TU-15)	Route 50 Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-010 (Former TU-19)	Ocean Drive Shore Protection	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-UpperTwp-011 (Former TU-20)	Firewise	1	1	1	1	1	1	1	1	1	1	0	0	1	1	12	High
2020-UpperTwp-012 (Former TU-22)	Enhanced Wildfire Protection	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2020-UpperTwp-013 (Former TU-23)	Garden State Parkway Elevation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High



Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2020-UpperTwp-014 (Former TU-25)	Storm Shelter Retrofit	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2020-UpperTwp-015 (Former TU-26)	Seacliff Ave Outfall	0	1	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2020-UpperTwp-016 (Former TU-29)	Flood Warning System	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2020-UpperTwp-017	Dry-Floodproof Strathmere Fire Hall	-1	1	1	1	1	1	1	1	0	1	1	1	1	0	10	High
2020-UpperTwp-018	Living Shoreline/Marsh Protection Zone	0	1	0	0	1	0	0	1	1	0	1	0	1	1	7	Medium
2020-UpperTwp-019	Bayview Drive Reconstruction	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.12-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Sea Level Rise		X	X	X	X	X		
Coastal Erosion			X	X	X	X		
Disease Outbreak (new)					X			
Drought (new)					X			
Flood		X	X	X	X	X		
Hurricane		X	X	X	X	X		
Nor'Easter		X	X	X	X	X		
Severe Weather		X			X	X		
Severe Winter Weather					X			
Tsunami					X			
Wildfire			X		X			

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.12-1. Township of Upper Hazard Area Extent and Location Map 1

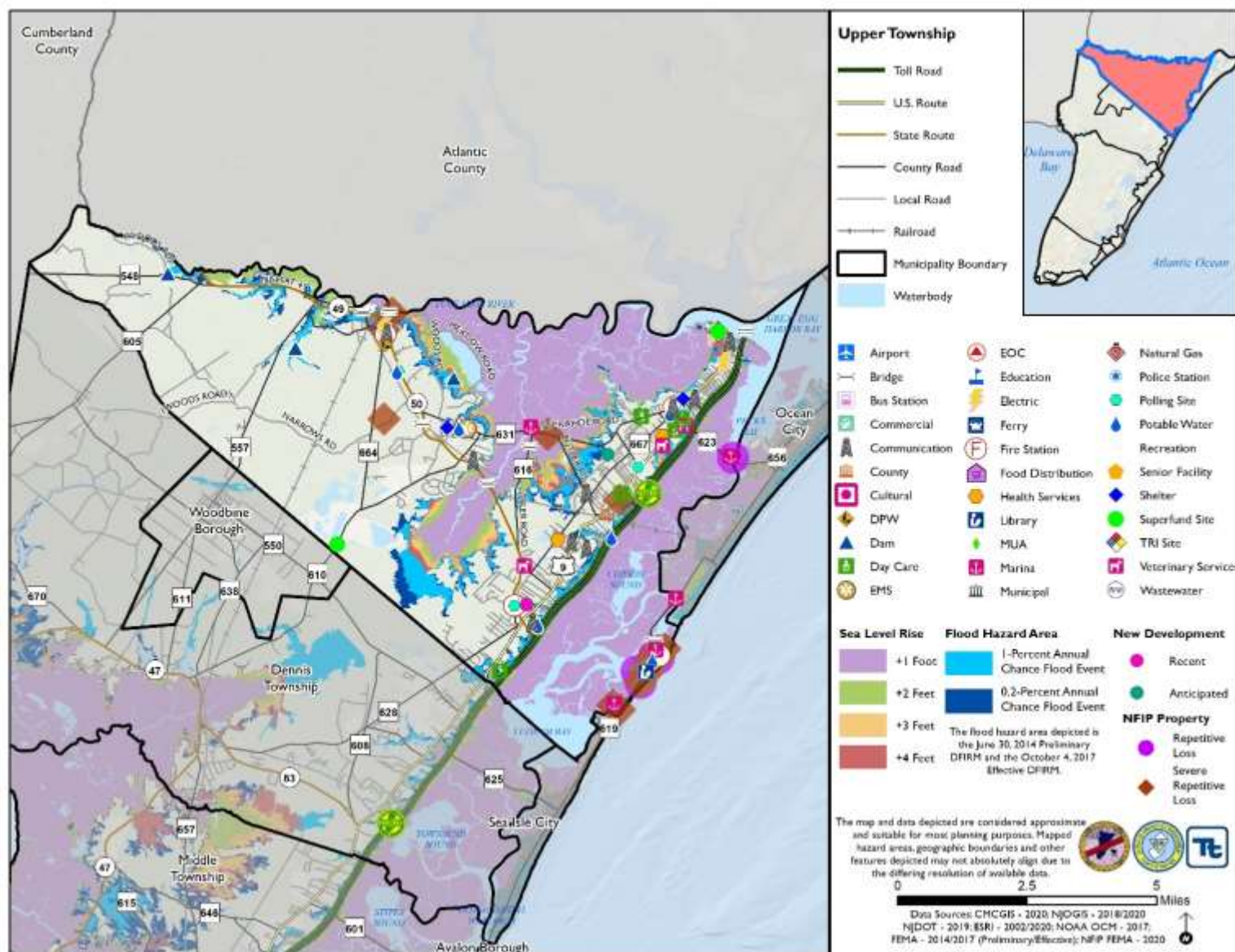




Figure 9.12-2. Township of Upper Hazard Area Extent and Location Map 2

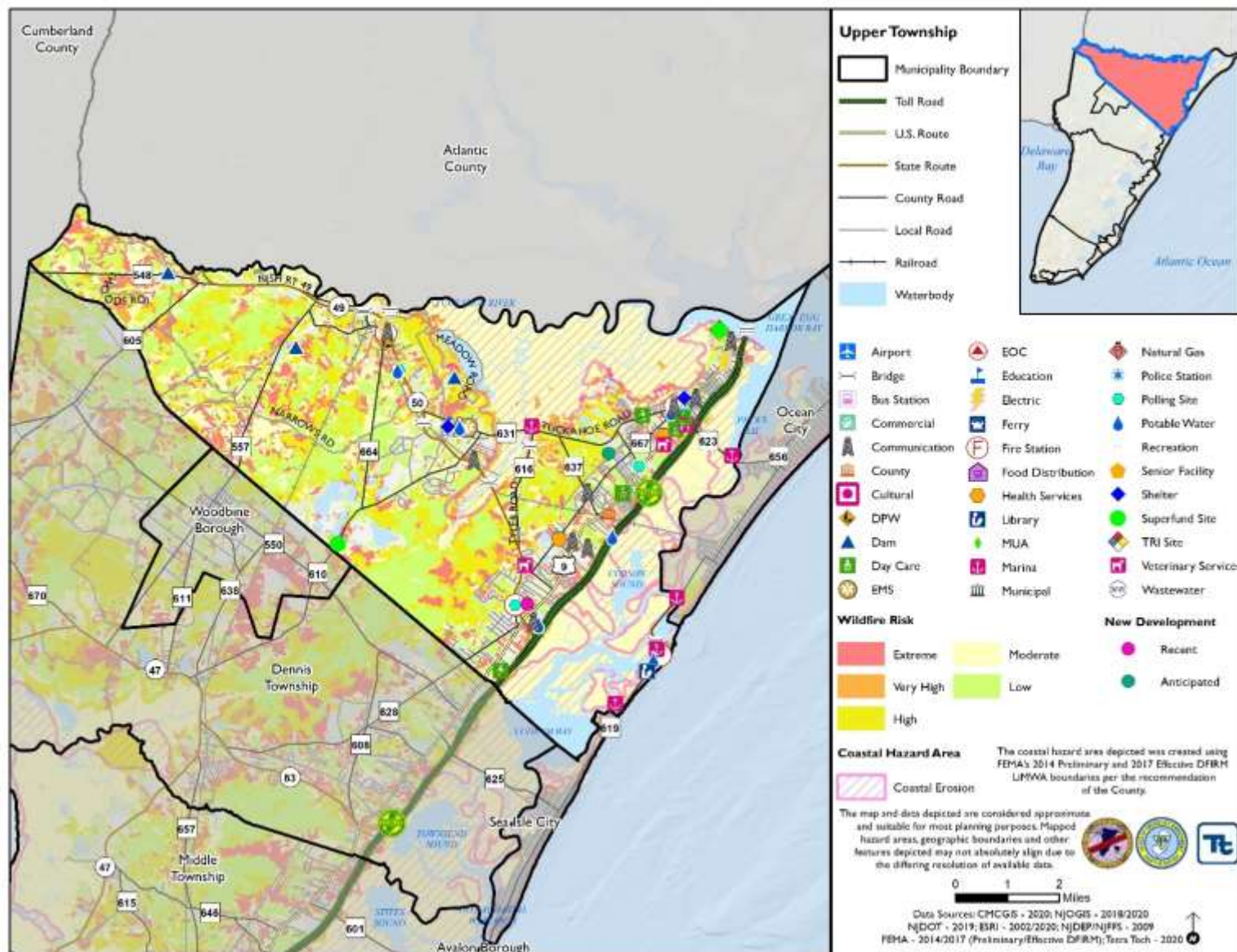
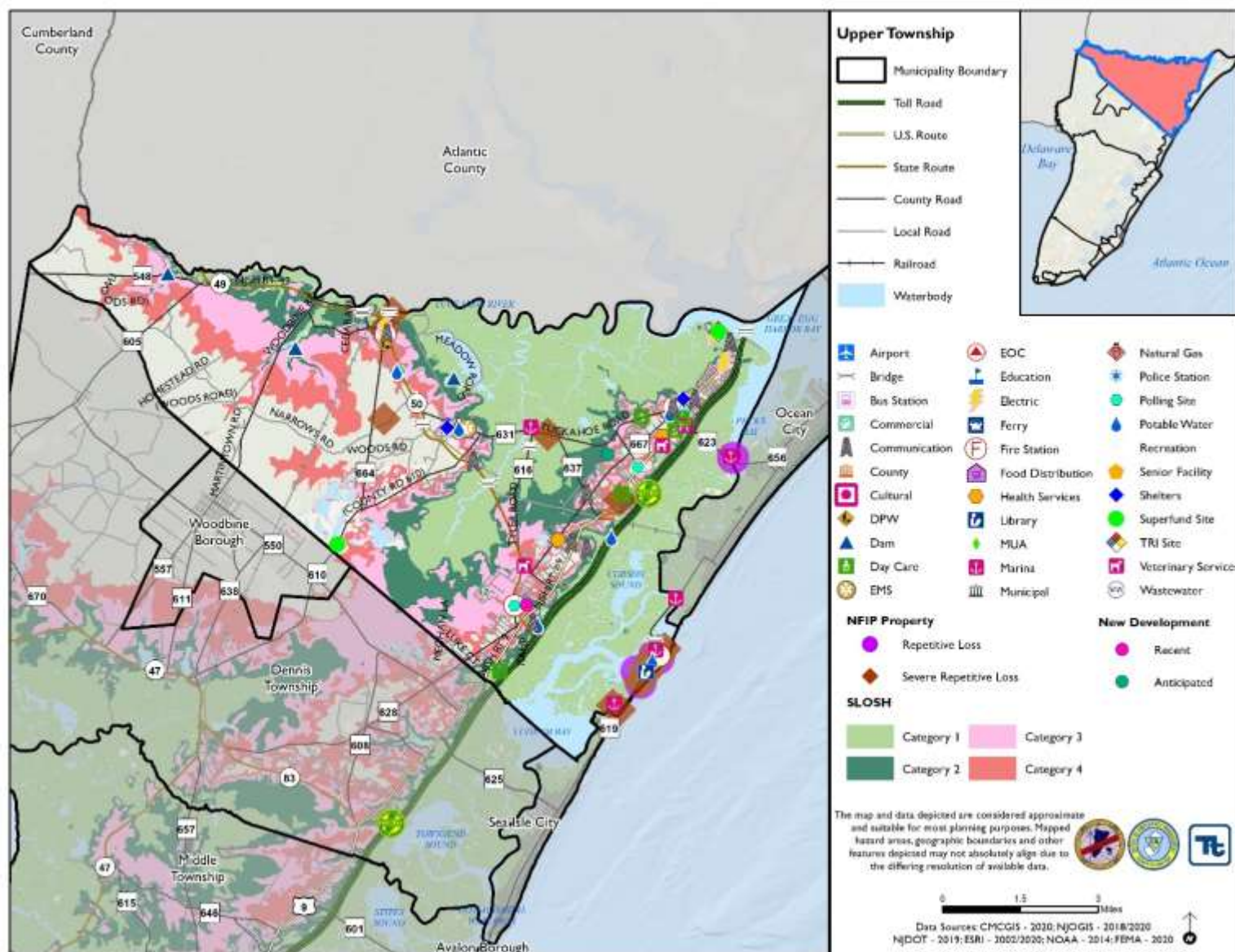




Figure 9.12-3. Township of Upper Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Structure Retrofits and Elevation		
Project Number:	2020-UpperTwp-001 (Former TU-1a)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm		
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 43 unmitigated repetitive loss/severe repetitive loss properties spread throughout the Township.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township proposes the retrofit and elevation of existing structures in the Special Flood Hazard Area.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100-year	Estimated Benefits (losses avoided):	Reduce flood costs; Protect life/ property of residents and businesses
Useful Life:	30 year	Goals Met:	1
Estimated Cost:	\$150,000 per property	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within two years
Estimated Time Required for Project Implementation:	12-18 months	Potential Funding Sources:	NJDCA; FEMA-FMA; Private funds
Responsible Organization:	Township of Upper; Private Owners	Local Planning Mechanisms to be Used in Implementation if any:	Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Home acquisition	Variable	Too expensive/not practical
	Home elevation	\$150K/property	Maintains quality of life
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Structure Retrofits and Elevation	
Project Number:	2020-UpperTwp-001 (Former TU-1a)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Protects homes from flood damage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Property owners have legal jurisdiction
Fiscal	0	The project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	1	12-18 months
Agency Champion	1	Township of Upper FPA; Private Owners
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Project Name:	Vulnerable Structure Acquisition		
Project Number:	2020-UpperTwp-002 (Former TU-1b)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm		
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.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township proposes to acquire certain structures in vulnerable, floodprone areas of the Township.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High - Eliminate risk of property damage from flooding
Useful Life:	Perpetual	Goals Met:	1, 5
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long term	Potential Funding Sources:	Township Funds; Blue Acres; FEMA FMA
Responsible Organization:	Township of Upper FPA; NJDEP Blue Acres, Property owners	Local Planning Mechanisms to be Used in Implementation if any:	Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Structure rebuilds	Low	Continued exposure
	Acquisition	High	Removes exposure
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Vulnerable Structure Acquisition	
Project Number:	2020-UpperTwp-002 (Former TU-1b)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects families from flooding
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Project requires cooperation of property owners
Fiscal	0	Project requires funding support
Environmental	1	
Social	0	Removes families from communities
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	0	Within five years
Agency Champion	1	Township of Upper FPA; NJDEP Blue Acres, Property owners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Project Name:	Bulkhead Upgrades		
Project Number:	2020-UpperTwp-003 (Former TU-9)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm		
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 areal flooding when breached.		
Action or Project Intended for Implementation			
Description of the Solution:	Institute upgrades based on the Township's bulkhead inventory and study.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High- continued protection of landward properties and wave attenuation
Useful Life:	30 years	Goals Met:	1, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Short-term
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	NJDCA; BRIC; Private Funds; Township Funds
Responsible Organization:	Township of Upper; Private Owners	Local Planning Mechanisms to be Used in Implementation if any:	Bulkhead inventory
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Remove bulkheads	High	Causes erosion
	Bulkhead elevation	High	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bulkhead Upgrades	
Project Number:	2020-UpperTwp-003 (Former TU-9)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect bulkheads and properties behind bulkhead
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	1	Short-term
Agency Champion	1	Township of Upper; Private Owners
Other Community Objectives	0	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	CR-619 Protection		
Project Number:	2020-UpperTwp-004 (Former TU-10)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm		
Description of the 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.		
Action or Project Intended for Implementation			
Description of the Solution:	The County will install protection to the roadway to prevent flood and erosion damages.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High- continued access and mobility in Strathmere
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Long term
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	BRIC; County Funds; Township Funds
Responsible Organization:	Township of Upper Administration; Cape May County	Local Planning Mechanisms to be Used in Implementation if any:	Master Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Bridge	High	Cost prohibitive
	Shore protection	High	Best alternative
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-619 Protection	
Project Number:	2020-UpperTwp-004 (Former TU-10)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project protects emergency access
Property Protection	1	Project protects CR-619
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	The project requires the County's cooperation
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	0	Long term
Agency Champion	1	Township of Upper Administration; Cape May County
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	CR-619 Revetment Wall		
Project Number:	2020-UpperTwp-005 (Former TU-11)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm		
Description of the 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.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will work with the County to undertake improvements to the existing revetment wall to enhance the level of protection and maintain utility of the roadway.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High- continued access and mobility in Strathmere
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	18-24 months	Potential Funding Sources:	NJDEP; County Funds; BRIC
Responsible Organization:	Township of Upper Administration; Cape May County; NJDEP	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road abandonment	Low	Not feasible
	Revetment wall improvement	High	Best option
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	CR-619 Revetment Wall	
Project Number:	2020-UpperTwp-005 (Former TU-11)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project protects CR-619 from damages
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Project requires legal cooperation of the County
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	0	Within 5 years
Agency Champion	1	Township of Upper Administration; Cape May County; NJDEP
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Roosevelt Boulevard Ramp Elevations		
Project Number:	2020-UpperTwp-006 (Former TU-12) See also 2020-CapeMayCounty-019 (Former CMC 31)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm		
Description of the 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.		
Action or Project Intended for Implementation			
Description of the Solution:	The roadway, ramps, and overpass bridge require elevation in order to continue providing access during flooding conditions.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Base flood elevation	Estimated Benefits (losses avoided):	High- continued access and utilization during flooding events for a major population center
Useful Life:	60 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Long Term DOF	Potential Funding Sources:	NJTA capital funds; Cape May County funds; BRIC
Responsible Organization:	Township of Upper; Cape May County; NJ Turnpike Authority	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan; SJTPO
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Interchange Relocation	High	Cost prohibitive
	Interchange elevation	High	Feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Roosevelt Boulevard Ramp Elevations	
Project Number:	2020-UpperTwp-006 (Former TU-12) See also 2020-CapeMayCounty-019 (Former CMC 31)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project protects emergency access
Property Protection	1	Project protects Roosevelt Boulevard ramp from flooding
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Project requires legal cooperation of the County
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	0	Within 5 years
Agency Champion	1	Township of Upper; Cape May County; NJ Turnpike Authority
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Tuckahoe Road Elevation		
Project Number:	2020-UpperTwp-008 (Former TU-14)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm		
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.		
Action or Project Intended for Implementation			
Description of the Solution:	Elevate Tuckahoe Road to a higher elevation. A conceptual design for the project has already been completed.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	500-year flood zone	Estimated Benefits (losses avoided):	High- continued functionality of an evacuation route
Useful Life:	50 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Long term
Estimated Time Required for Project Implementation:	1-2 years	Potential Funding Sources:	County Funds; NJDOT Local Aid; BRIC
Responsible Organization:	Cape May County; Township of Upper Engineer; NJDEP	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Road floodproofing	High	Not practical
	Elevation	High	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Tuckahoe Road Elevation	
Project Number:	2020-UpperTwp-008 (Former TU-14)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Project protects roadway from flood and storm damage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Project requires the legal cooperation of the County
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	0	Long term
Agency Champion	1	Cape May County; Township of Upper Engineer; NJDEP
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Storm Shelter Retrofit		
Project Number:	2020-UpperTwp-014 (Former TU-25)		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
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.		
Action or Project Intended for Implementation			
Description of the 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		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-Year flood	Estimated Benefits (losses avoided):	High
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	High	Mitigation Action Type:	Local Plans and Regulations, Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within five years
Estimated Time Required for Project Implementation:	Long-term	Potential Funding Sources:	BRIC; Township funds; BOE funds
Responsible Organization:	Township OEM	Local Planning Mechanisms to be Used in Implementation if any:	Emergency management plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Build new shelters	High	Not cost effective
	Retrofit	High	Cost effective
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Storm Shelter Retrofit	
Project Number:	2020-UpperTwp-014 (Former TU-25)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will increase viability of storm shelter
Property Protection	1	Project will increase protection of storm shelter
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	0	Within five year
Agency Champion	1	Township OEM
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Seacliff Ave Outfall		
Project Number:	2020-UpperTwp-015 (Former TU-26)		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm; Severe Weather		
Description of the 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.		
Action or Project Intended for Implementation			
Description of the 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.		
Is this project related to a Critical Facility?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Level of Protection:	TBD by engineering study	Estimated Benefits (losses avoided):	Increased drainage, reduction in clogging
Useful Life:	20 years	Goals Met:	1
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, Township budget
Responsible Organization:	Township Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Buyout homes exposed to flooding	High	Costly
	Close roadways that experience flooding	Low	Loss of access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Seacliff Ave Outfall	
Project Number:	2020-UpperTwp-015 (Former TU-26)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Properties protected from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Sea Level Rise; Flood; Nor'easter; Hurricane and Tropical Storm; Severe Weather
Timeline	1	Short
Agency Champion	1	Township Engineer
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Flood Warning System		
Project Number:	2020-UpperTwp-016		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Hurricane, Nor'Easter		
Description of the 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.		
Action or Project Intended for Implementation			
Description of the Solution:	Install 3-4 additional flood warning gauges to create a better network for notifying the public when flooding is impending.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	High- distribution of hazard information
Useful Life:	20 years	Goals Met:	1, 2, 4
Estimated Cost:	\$100,000	Mitigation Action Type:	Education and Awareness Program
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Short
Estimated Time Required for Project Implementation:	Within 1 year	Potential Funding Sources:	Township funds; HMGP
Responsible Organization:	Township OEM	Local Planning Mechanisms to be Used in Implementation if any:	Emergency Management Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Manual flood reports	Low	Not reliable
	Flood warning system	Low	Automatic
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Flood Warning System	
Project Number:	2020-UpperTwp-016	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Increased emergency capabilities
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Hurricane, Nor'Easter
Timeline	1	Short term
Agency Champion	1	Township OEM
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Dry-Floodproof Strathmere Fire Hall		
Project Number:	2020-UpperTwp-017		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Hurricane, Nor'Easter		
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.		
Action or Project Intended for Implementation			
Description of the Solution:	The Fire Company will dry-floodproof the garage doors and exterior walls.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	100-year event	Estimated Benefits (losses avoided):	Reduce flood damages
Useful Life:	30 years	Goals Met:	1, 3, 4
Estimated Cost:	\$100,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	Strathmere Fire Budget, HMGP, BRIC
Responsible Organization:	Strathmere Fire Company, support from Township Floodplain Manager	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation Plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Dry-Floodproofing	\$100,000	Can't move fire apparatus once system is installed during event
	Raise building	\$5,000,000	Costly, access issues due to grade difference between garage and Commonwealth Ave
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Dry-Floodproof Strathmere Fire Hall	
Project Number:	2020-UpperTwp-017	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	-1	Can't move fire apparatus during event
Property Protection	1	Fire apparatus will not be damaged
Cost-Effectiveness	1	Better alternative than raising building
Technical	1	Easy engineering solution
Political	1	
Legal	1	
Fiscal	1	Better alternate than raising building
Environmental	1	Better alternate than raising building
Social	0	
Administrative	1	
Multi-Hazard	1	Flood, Hurricane, Nor'Easter
Timeline	1	Can be implemented quickly once funded.
Agency Champion	1	Strathmere Fire Company, support from Township Floodplain Manager
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Living Shoreline and Marsh Protection Zone		
Project Number:	2020-UpperTwp-018		
Risk / Vulnerability			
Hazard(s) of Concern:	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm		
Description of the Problem:	The shoreline south of Bayview Dr Boatramp has been eroding and destroying the marsh. The marsh area creates a buffer to lessen the impact of wave energy and flooding to Strathmere.		
Action or Project Intended for Implementation			
Description of the Solution:	Study needs to be performed to determine how to reconstruct the shoreline and restore its natural function. Construct a living shoreline along the area.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduced erosion and enhanced ecosystem services.
Useful Life:	5 years	Goals Met:	1, 5
Estimated Cost:	TBD	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	BRIC; NJDEP; FWS; NFWF
Responsible Organization:	Township Administration	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvement plan, master plan
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Shoreline hardening	High	Ecosystem degradation
	Living shoreline	High	Ecosystem enhancement
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Living Shoreline and Marsh Protection Zone	
Project Number:	2020-UpperTwp-018	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will lessen the impact of wave energy and flooding to Strathmere.
Cost-Effectiveness	0	
Technical	0	
Political	1	
Legal	0	Project requires permitting
Fiscal	0	Project requires funding support
Environmental	1	Project restores protective ecosystem
Social	1	
Administrative	0	
Multi-Hazard	1	Sea Level Rise; Coastal Erosion; Flood; Nor'easter; Hurricane and Tropical Storm
Timeline	0	Within 5 years
Agency Champion	1	Township Administration
Other Community Objectives	1	
Total	7	
Priority (High/Med/Low)	Medium	



9.13 BOROUGH OF WEST CAPE MAY

This section presents the jurisdictional annex for the Borough of West Cape May. The annex includes a general overview of the Borough of West Cape May; an assessment of the Borough of West Cape May's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.13.1 Staff and Local Stakeholder Involvement in Annex Development

The Borough of West Cape May followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.13-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Paul Mulligan, Emergency Management Coordinator Address: 732 Broadway West Cape May, NJ 08204 Phone Number: (732) 770-7186 Email: pjmuligan@comcast.net; oem@westcapemay.us		Name / Title: Suzanne Schumann, Municipal Clerk Address: 732 Broadway West Cape May, NJ 08204 Phone Number: (609) 884-1005x100 Email: sschumann@westcapemay.us
NFIP Floodplain Administrator		
Name / Title: Lou Belasco, Tax Assessor/CRS Coordinator Address: 732 Broadway West Cape May, NJ 08204 Phone Number: (609) 884-1005x103 Email: lbelasco@westcapemay.us		
Name	Title	Method of Participation
Paul Mulligan	Emergency Management Coordinator	Primary point of contact, provided impact information, contributed to mitigation strategy, reviewed draft and provided feedback, signed off on annex
Suzanne Schumann	Municipal Clerk	Alternate point of contact
Lou Belasco	Tax Assessor/CRS Coordinator	NFIP floodplain administrator, reviewed and signed off on annex
Carol Sabo	Mayor/Administrator	Reviewed and signed off on annex
Raymond M. Roberts	Engineer	Reviewed and signed off on annex
Frank Donato III	Fiscal/CFO	Reviewed and signed off on annex
Gregory M. Basile	Department of Public Works	Reviewed and signed off on annex
Anthony Marino	Chief, Police Department	Reviewed and signed off on annex
Sam Basile	Fire Department	Reviewed and signed off on annex

9.13.2 Jurisdiction Profile

West Cape May is a borough at the southern tip of Cape May Peninsula in Cape May County, New Jersey, where the Delaware Bay meets the Atlantic Ocean. It is bounded on the north by the Township of Lower, on the east by the City of Cape May, on the south by the Atlantic Ocean and Delaware Bay, and on the west by the Township



of Lower, Borough of Cape May Point and the Delaware Bay. It is part of the Ocean City Metropolitan Statistical Area.

According to the U.S. Census, the 2010 population for the Borough of West Cape May was 1,026. The estimated 2018 population was 1,103, a 7.5 percent increase from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 5.5 percent of the population is 5 years of age or younger and 29.3 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.13.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.13-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.13-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.13-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	17	4	10	2	15	6	6	6	12	8
Multi-Family	0	0	0	0	0	0	1	1	1	0
Other (commercial, mixed-use, etc.)	0	0	1	0	3	2	0	0	1	0
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
Burgin Lane	Residential		12		Burgin Lane		Category 2, 3, 4 Storm		Complete	
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
None anticipated.										

* Only location-specific hazard zones or vulnerabilities identified.

9.13.4 Capability Assessment

The Borough of West Cape May performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.



- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.13.4). The Borough of West Cape May identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.13-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> State mandated on local level under NJAC 5:23-3.14. <i>International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)</i> <i>Building and Housing, Chapter X, adopted by the Board of Commissioners. It is hereby found and determined that there exists a substantial number of buildings, or parts thereof, within the Borough of West Cape May which are unfit for human habitation, occupancy or use due to their age, dilapidation, defects increasing the risks of fire, accidents or other calamities, lack of ventilation, light or sanitation facilities, or due to other conditions rendering such buildings, or a part thereof, unsafe or unsanitary, or dangerous or detrimental to the health, safety or welfare of the residents of the Borough of West Cape May and that a public necessity exists for the repair, closing or demolition of such buildings.</i> <i>The Borough repealed its original Uniform Construction Code enforcing agency and signed an Interlocal Services Agreement with the City of Cape May for provisions of Construction Code review and inspection services.</i> 					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> State permissive on local level. <i>Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.</i> <i>Zoning, Chapter XXVII, adopted by the Board of Commissioners. No building or land may hereafter be used or occupied and no building or other improvement may be erected, enlarged, improved, altered or moved without compliance with the provisions of this Chapter.</i> <i>In order to encourage sustainable green building practices in accordance with U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED), a bonus of additional feet may be added to the maximum floor area ratio for property owners or developers that comply with certain of the LEED standards, set forth in Appendix A, which shall be incorporated into herein by reference.</i> <i>The Ordinance establishes a Preservation District. In the P-Preservation district, a lot, lots, building, buildings, premises or any portion thereof situated within the P-Preservation District Zone may be used by right for the following purposes and only after approval by the New Jersey Department of Environmental Protection and site plan review by the West Cape May Planning Board: Public purpose uses which shall mean use by any governmental entity or any officially created authority or agency thereof having jurisdiction in the Borough of West Cape May: Agricultural uses limited solely to the cultivation and harvesting of naturally occurring agricultural or horticultural products: Water oriented uses such as marinas and boat slips; and Public walkways, boardwalks for the viewing and enjoyment of the natural scenery and wildlife.</i> <i>This Chapter contains limited language with respect to flood protection and stormwater controls.</i> 					



Table 9.13-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. Subdivision, Chapter XXV, adopted by the Board of Commissioners. The purpose of this Chapter shall be to provide rules, regulations and standards to guide land subdivision in the Borough in order to provide for the orderly growth and development of the municipality and to assure and promote the comfort, health, safety, convenience and general welfare of the Borough. This Chapter contains basic design requirements for addressing drainage and concerns, such as, natural features, trees, views, natural terrain and natural drainage lines, shall be preserved when-ever possible in designing any subdivision containing such features, and open waters shall be recognized as community assets, and no storm water runoff or natural drainage water shall be so directed as to overload existing drainage systems or create flooding or the need for additional drainage structures on other private properties or public lands, without proper provisions being made for taking care of these conditions. 					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 Stormwater Control, Chapter XXII. Adopted by the Board of Commissioners. In this Chapter, Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. This Chapter establishes minimum stormwater management requirements and controls for "major development,". Structural stormwater management measures shall be designed to take into account the existing site conditions, including, for example, environmentally critical areas, wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage area and drainage patterns; and the presence of solution-prone carbonate rocks (limestone). 					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none"> N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. It should be noted that Section 21-1.3 of the Borough's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard. 					
Growth Management	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment:					



Table 9.13-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. 					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Site Plan Regulations, Chapter XXIV, adopted by the Board of Commissioners. The purpose of this Chapter is to establish rules, regulations, standards and procedures for the approval of all development in order to: Preserve existing natural resources and give proper consideration to the physical constraints of the land; Ensure logical, safe and aesthetic land development that enhances the function and character of the community; Provide for compliance with appropriate design standards to ensure adequate light and air, context sensitive building arrangements and minimum adverse effect on surrounding property; and Develop proper safeguards to minimize the impact on the environment including but not limited to soil erosion and sedimentation and air and water pollution. This Chapter contains basic standards for addressing flooding, drainage and stormwater. 					
Environmental Protection	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none"> Basic aspects of environmental protection are most clearly stated in the Code in Zoning, Chapter XXVII. 					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Flood Damage Prevention, Chapter XXIII, adopted by the Board of Commissioners. The Board of Commissioners of the Borough of West Cape May of Cape May County, New Jersey does ordain as follows: <ul style="list-style-type: none"> The flood hazard areas of the Borough of West Cape May are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, causes damage in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss. In order to accomplish the purposes of flood protection described in this Chapter the following methods and provisions are proposed: <ul style="list-style-type: none"> Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; Controlling filling, grading, dredging, and other development which may increase flood damage; and, 					



Table 9.13-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none"> ○ Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. • New construction and substantial improvement of any residential or nonresidential structure located in an A or AE Zone shall have the lowest floor, including basement together with the attendant utilities (including all electrical, heating, ventilating, air-conditioning and other service equipment) and sanitary facilities, elevated at or above the base flood elevation plus one (1) foot. 					
Wellhead Protection	No	-	No	-	-
<i>Comment:</i>					
Emergency Management	No	-	No	-	-
<i>Comment:</i>					
Climate Change	No	-	No	-	-
<i>Comment:</i>					
Disaster Recovery Ordinance	No	-	No	-	-
<i>Comment:</i>					
Disaster Reconstruction Ordinance	No	-	No	-	-
<i>Comment:</i>					
Other	Yes	State & Local	No	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> • Water, Chapter XIX, adopted by the Board of Commissioners. This Chapter addresses water emergencies in Section 19-5 and states that; There is a shortage of potable water in the southern Cape May County area; and it is estimated that this shortage will worsen in the immediate future due to increased population and increasing salt water intrusion into certain area aquifers. It has been determined that certain uses of water should be regulated in order to help conserve the supply thereof. This section shall apply to all persons obtaining or furnishing water from the water utility operated by the Borough of West Cape May. • On odd-numbered days it shall be unlawful for any person or persons to perform any of the following activities; <ul style="list-style-type: none"> ○ Washing of motor vehicles of any type, boats or structures of any type. ○ The watering of lawns, gardens or ground cover of any type between the hours of 10:00 a.m. and 6:00 p.m. ○ The use of water outside of a structure for any unnecessary purpose except for those uses directly required for human sanitation and cleanliness. 					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> • 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. • <u>Comprehensive Master Plan</u>, submitted: December 30, 2005. This Comprehensive Master Plan Update addresses the following Mandatory and Optional Master Plan Elements. <ul style="list-style-type: none"> ○ Mandatory Elements; Statement of Objectives, Principles, Assumptions, Policies & Standards; Land Use Plan Element; and Housing Plan Element ○ Optional Elements; Open Space, Recreation & Conservation Plan Element; and A Historic Preservation Plan Element 					



Table 9.13-3. Planning, Legal and Regulatory Capability

Have aspects of this been integrated into your mitigation plan?					If no - can it be a mitigation action? If yes, add Mitigation Action #.
Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments		
<ul style="list-style-type: none">It is recommended that the Borough undertake the remaining optional Master Plan Elements as funding permits.Borough Policymakers reaffirm their commitment to the 15 Purposes of the Municipal Land Use Law and adopt same as general guidelines for this Comprehensive Master Plan Update, the Land Development Ordinance and for the policies and practices of all appropriate municipal agencies in the administration of their duties and responsibilities.The Plan explains that Measured sea level has risen approximately 15” in the Cape Island region over the past century, and is expected to continue to rise for the foreseeable future. Consequences of this ongoing inundation of Cape Island by the sea include: shoreline erosion and tidal flooding caused primarily by storms; Wider, deeper and saltier streams; Tidal penetration into the interior of Cape Island; and Migration of salt marshes (replacing swamp forests as trees are killed when saltwater inundates their roots).Additionally, saltwater intrusion into the aquifers beneath Cape Island has resulted in the contamination of the groundwater with high levels of sodium. Cape Island’s municipal system now gets the majority of its drinking water from a single pocket of fresh groundwater in the Cohansey aquifer.¹⁶New Jersey’s only desalination plant was built in 1998 to supplement the water supply from this source.Master Plan Re- Examination Report, October 2015. The Re-Examination looks at major problems and objectives related to land development in the borough of west cape may at the time of the adoption of the last master plan. The Plan contains a number of recommendations that should be considered in the areas of; Infrastructure; Environmental Preservation, Recreation and Open Space; Sustainability Traffic Safety, Circulation and Parking; Economic Development and Growth; Dark Sky; and FEMA.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Capital Budget and Capital Improvement Plan, introduced on March 25, 2020. The Plan does not include any current year funding.					
Disaster Debris Management Plan	No	-	No	-	2021-West Cape May - 008
Comment:					
Floodplain or Watershed Plan	Yes, underway	Local	No	Yes	No
Comment: The Borough is completing their Watershed Management Plan which will earn points in the CRS program. The plan is being completed by the Stockton Coastal Research Center.					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.Municipal Stormwater Management Plan, December 2004. This Municipal Stormwater Management Plan (MSWMP) documents the strategy for the Borough of West Cape May to address stormwater-related impacts. The creation of this plan is required by N.J.A.C.7:14A-25 (Municipal Stormwater Regulations). As required, this plan contains all of the required elements described in N.J.A.C.7:8 (Stormwater Management Regulations).The goals of this MSWMP are as follows: Reduce flood damage, including damage to life and property; Minimize, to the extent practical, any increase in stormwater runoff from any new development; Reduce soil erosion from any development or construction project; Assure the adequacy of existing and proposed culverts, bridges and other in-stream structures; Maintain groundwater recharge; Prevent, to the greatest extent feasible, an increase in nonpoint pollution; Maintain the integrity of stream channels for their biological functions, as well as for drainage; Minimize pollutants in stormwater runoff from new and existing development to: restore, enhance and maintain the chemical, physical and biological integrity of the waters of the state, protect public health, safeguard fish and aquatic life and scenic and ecological values, enhance the domestic, municipal, recreational, industrial and other uses of water; and Protect public safety through the proper design and operation of stormwater basins.					
Stormwater Pollution Prevention Plan	Yes	State & Local	Yes	Yes	-



Table 9.13-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
<ul style="list-style-type: none"> The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. Stormwater Pollution Prevention Plan dated 12-31-18. The Plan includes all of the required forms necessary for annual reporting for the SPPP. 					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	Yes	Local	No	Yes	-
Comment:					
<ul style="list-style-type: none"> Environmental Resource Inventory dated May, 2018. Assembling an inventory of the Borough's environmental and biological infrastructure is the first step in a proactive and ecological approach to protecting and preserving human and ecological health. The goal of the Environmental Resource Inventory (ERI) is to provide objective, reliable environmental data in one document. This Inventory's information may facilitate resource-sensitive development decisions. In addition, familiarity with environmental concerns enables residents to appreciate and to learn how to maintain our valuable natural resources. The ERI is a comprehensive and useful tool for mitigation planning. 					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	Yes	State & Local	Yes – if located in a coastal zone	Yes	-
Comment:					
<ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq. Coastal Vulnerability Assessment & Getting to Resilience, March 2017. Vulnerability is defined as the degree of exposure and inability of a human or natural system to cope with the effects of a natural hazard, including changing variability and extremes in weather and climate. By assessing vulnerabilities, communities can plan for future exposures and develop strategies for mitigating long-term risk; making communities more resilient. When a CVA is completed, community assets from four general areas are indexed in a matrix and then used to support the development of the mapping, these areas include: Community Resources; Critical Infrastructure and Facilities; Natural Resources; and Vulnerable Sites and Populations. After deliberation, West Cape May's final list of assets consisted of 6 asset locations, the business district, and 4 local evacuation routes. Throughout discussions with municipal officials, the Business District stood out as the most critical asset to the Borough due to its year-round economic and employment value to residents and importance to summer time visitors. 					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	Yes	State & Local	No	Yes	-
Comment:					
<ul style="list-style-type: none"> Community Forestry Management Plan, December 6, 2018 form January 1, 2018 to December 31, 2022. The plan include the following elements: Training plan ;Public education / awareness / outreach; Tree ordinance establishment; Tree inventory plan; 					



Table 9.13-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	If yes- how? Describe in comments	Have aspects of this been integrated into your mitigation plan? If no - can it be a mitigation action? If yes, add Mitigation Action #.
<i>Tree risk assessment plan; Storm damage assessment related to trees; Tree maintenance and removals; Insect and disease management; Wildfire protection; and Storm water management.</i>					
Transportation Plan	No	-	No	-	-
<i>Comment:</i>					
Agriculture Plan	No	-	No	-	-
<i>Comment:</i>					
<ul style="list-style-type: none"> There is no Agriculture Plan, but there is a Right to Farm Ordinance, Chapter XVI. 					
Climate Action Plan	Yes	Local	No	Yes	-
<i>Comment:</i>					
<ul style="list-style-type: none"> Getting to Resilience. The Borough completed the GTR online assessment at Borough Hall on January 23rd. The complete list of linkages and recommendations is available upon request. Chosen relevant recommendations are listed below: <ul style="list-style-type: none"> Adopt a Municipal Floodplain Management Plan and Incorporate the Plan into the Municipal Master Plan, Municipal Stormwater Plan, and Hazard Mitigation Plan Adopt an Economic Development Plan or Strategy. 					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
<i>Comment:</i>					
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. The Borough's CEMP and SOPs were reviewed and updated in 2015. These documents refer to the hazard mitigation plan. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	Yes	Local	No	No	-
<i>Comment:</i>					
<ul style="list-style-type: none"> A CVA is described under Shoreline Management above. 					
Post-Disaster Recovery Plan	No	-	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	Yes	Local	No	Yes	-
<i>Comment:</i>					
<ul style="list-style-type: none"> The Borough has a Continuity of Operations plan that will serve to protect the local government and operations from natural hazard disruptions. 					
Public Health Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					



Table 9.13-4. Development and Permitting Capability

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

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Borough of West Cape May.

Table 9.13-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning/Zoning Board Commissioners
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Environmental Commission
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	WCM Mayor / Clerk and CM police have system access
Maintenance program to reduce risk	Yes	Shade Tree Commission
Mutual aid agreements	Yes	Surrounding municipalities
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Municipal engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Municipal engineer
Planners or engineers with an understanding of natural hazards	Yes	Municipal engineer; Planning Board
Staff with training in benefit/cost analysis	Yes	Municipal engineer
Staff with training in green infrastructure	Yes	Municipal engineer
Staff with education/knowledge/training in low impact development	Yes	Municipal engineer
Surveyor	No	Not on staff/Consultant available
Stormwater engineer	Yes	Municipal engineer
Personnel skilled or trained in GIS applications	No	Utilize County
Local or state water quality professional	Yes	WCM Water / Sewer Utility
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Paul Mulligan, Coordinator
Watershed planner	No	-
Environmental specialist	Yes	Environmental Commission
Grant writers	No	-
Resilience Officer	Yes	Environmental Commission
Other	No	-



FISCAL CAPABILITY

The table below summarizes financial resources available to the Borough of West Cape May.

Table 9.13-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	Yes
Other	Yes

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the Borough of West Cape May.

Table 9.13-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes – Mayor
Do you have personnel skilled or trained in website development?	Yes – Clerk
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes – EC / P & Z
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	The Water Department distributes mailers that include information on reducing natural hazard risk

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the Borough of West Cape May.

Table 9.13-8. Community Classifications

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



Program	Participating?	Classification	Date Classified
Sustainable Jersey	Yes	Bronze	December 12, 2019

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.13-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Strong
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Strong
Hurricane	Strong
Nor’Easter	Strong
Severe Weather	Strong
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.

The Borough has access to resources to determine the possible impacts of climate change upon the municipality. At this time, the administration is not in the process of integrating climate change in policies or actions.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.13-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Tax Assessor/CRS Coordinator
Who is your floodplain administrator? (name, department/position)	Lou Belasco, Tax Assessor/CRS Coordinator
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2016
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Meets standards
When was the most recent Community Assistance Visit or Community Assistance Contact?	August 7, 2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Yes, FIRM update in progress



Criterion	Response
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	The floodplain administrator is currently adequately trained for floodplain management responsibilities, although additional training would be welcome.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?*	344 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	99 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$2,298 in payments
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Land Use Planning:** The Planning and Zoning boards use design and stormwater management requirements to guide their decisions. The Borough has a municipal planner who reviews subdivision and site plan applications. Developers are required to take additional actions to guide their decisions with respect to natural hazard risk management.
- **Floodplain Management:** NFIP Floodplain Management issues are performed by the Floodplain Administrator, Donald Arndt who is the Construction Code Official.
- **Vegetation Maintenance:** The Borough's Shade Tree Commission is working with utilities to develop and implement an improved tree maintenance program (updated mitigation strategy – WCM-11).
- **Other Boards and Committees:** The Board of Commissioners and Environmental Committee both have functions with respect to managing natural hazard risk.
- **Technical Resources:** Staff are trained to perform substantial damage estimates and have experience in preparing grant applications for mitigation projects.
- The Borough Emergency Management Coordinators and Deputies have job descriptions that specifically include identifying and/or implementing mitigation projects.
- Borough staff receive training and continuing education to support natural hazard risk reduction, such as through the New Jersey League of Municipalities. Additional training regarding opportunities for grants and grant writing would be beneficial.
- **Sustainable Jersey:** The Borough is a bronze certified community in the Sustainable Jersey program. The Borough has earned points toward certification through creation of a Green Team, community partnership and outreach, having a wind ordinance, having public electric vehicle charging infrastructure, hosting a farmers market, taking a sustainable land use pledge, undertaking a natural resource inventory, having an environmental commission, having a water conservation education program, adopting a tree protection ordinance, development of the Borough's Community Forestry Management Plan, tree planting programs, recycling programs, the digitizing of public information, prescription drug safety and disposal, holding a paper shredding day, and establishing a recycling depot.



9.13.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of West Cape May's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.13-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.13-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 23, 2016	Winter Storm Jonas	DR-4264	Coastal storm with major coastal flooding and high winds.	The Borough experienced minor storm damages.
July 10, 2020	Tropical Storm Fay	No	Tropical Storm with moderate flooding and high winds.	The Borough experienced minor storm damages.
January 20, 2020-continuing	Covid-19 Pandemic	DR-4488, EM-3451	The coronavirus pandemic resulted in hospitalizations, death.	The Borough was impacted by required business and school closures and mask/social distancing requirements.
August 4, 2020	Tropical Storm Isaias	Pending	Tropical Storm with high winds.	The Borough experienced minor storm damages.

Source: NOAA NCEI 2020, FEMA 2020

9.13.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of West Cape May risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of West Cape May.

- Number of repetitive loss (RL) properties: 14
- Number of severe repetitive loss (SRL) properties: 1
- Number of RL/SRL properties that have been mitigated: 1

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.13-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
Elmira Street Bridge	Bridge	X	X
WEST CAPE MAY ELEMENTARY	Education		X
CVS	Health Services	X	X



Name	Type	Exposure	
		1% Event	0.2% Event
Exit Zero Filling Station	Natural Gas Facility	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The Borough has 14 remaining unmitigated repetitive loss properties and 1 severe repetitive loss property.
- The Cape Island Creek tunnel backup causes the Borough to flood.
- Local schools require retrofitting to protect against hazard damages.
- City Hall's construction is outdated and leaves the building exposed to potential storm damages and impacts that would limit continuity of operations.
- Falling trees and tree branches can result in utility failure and property damages.
- CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM) are low lying and experience flooding. The roadway is county owned.
- West Cape May lacks a Stormwater Master Plan.
- The Borough lacks a Disaster Debris Management Plan.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of West Cape May that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of West Cape May has significant exposure. A map of the Borough of West Cape May hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of West Cape May. The Borough of West Cape May has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Borough indicated the following:

- The Borough agreed with the calculated hazard rankings.





Table 9.13-13. Borough of West Cape May Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak (new)	Drought (new)	Flood	Hurricane
High	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Low	Medium

9.13.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.13-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
WCM-1a	Property Mitigation Support – Retrofit: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Borough (likely through NFIP Floodplain Administrator); State OEM, County OEM	In Progress	X	2021-West Cape May-001
WCM-1b	Property Mitigation Support – Acquisition/Relocation: Where appropriate, support acquisition and/or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Borough (likely through NFIP Floodplain Administrator); State OEM, County OEM	In Progress	X	2021-West Cape May-001
WCM-2	Continue to evaluate the cost-effectiveness of participation in the incentive-based CRS program.	Borough	Ongoing Capability		
WCM-3	The zoning ordinances and master plan are under review and will be updated within the next 12 months.	Municipal Emergency Manager with support from County OEM and NJOEM	Complete		



Table 9.13-14. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update? Check if Yes	Enter 2021 HMP Action #
WCM-4	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Borough	Ongoing Capability		
WCM-5	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
WCM-6	Retrofit school to reduce vulnerability to natural hazards, including wind-resistant glazing and addition of backup power.	School Board with assistance from local departments	In Progress	X	2021-West Cape May - 003
WCM-7	Retrofit City Hall to reduce vulnerability to natural hazards, including wind-resistant glazing, improved communications system, and emergency lighting. Backup generator installed was in 2015.	Engineering Department with support from Emergency Management	No Progress	X	2021-West Cape May - 004
WCM-8	Work with Shade Tree Commission and utilities to develop and implement an improved tree maintenance program	County Engineering with support from Shade Tree Commission and electric utility (AC Electric)	In Progress	X	2021-West Cape May - 005
WCM-9	Elevate ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM).	County Engineering with municipal support	In Progress, County responsibility	X	2021-West Cape May - 006
WCM-10	Develop a Stormwater Master Plan for West Cape May.	County Engineering/ Planning with municipal support	In Progress, County responsibility	X	2021-West Cape May - 007
WCM-11	Purchase and installation of an emergency generator for pump station power outages. (USDA FY 2008 Water & Sewer Replacement Project)	Engineering with USDA	Complete		
WCM-12	Work directly with residents of the community located in a mixed interface next to phragmites to become a National Fire Protection Association (NFPA) "Firewise" community.	Local Fire Chiefs working with County Fire Coordinator	Ongoing Capability		

In addition to the above progress, the Borough of West Cape May identified the following mitigation projects/activities that were completed but not identified in the 2016 HMP mitigation strategy:

- None identified



PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of West Cape May participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough of West Cape May participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.13-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of West Cape May would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.13-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.13-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-West Cape May-001	Repetitive Loss Mitigation	<p>Problem: The Borough has 14 remaining unmitigated repetitive loss properties and 1 severe repetitive loss property.</p> <p>Solution: The Borough will conduct outreach to RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$2M	Within 5 years	High	SIP	PP
2021-West Cape May-002	Cape Island Creek Tunnel Pump Station	<p>Problem: The Cape Island Creek tunnel causes the Borough to flood.</p> <p>Solution: The Borough will construct a pump station to address flooding at the Cape Island Creek tunnel. The pump station will be protected to the 500-year flood level and will have a backup power generator on site.</p>	New	Flood, Severe Weather	1	Engineer, Public Works	HMGP, BRIC, Borough budget	Reduction in flooding near Cape Island Creek tunnel	\$3M	Within 2 years	High	SIP	SP
2021-West Cape May-003	Support School Retrofits	<p>Problem: Local schools require retrofitting to protect against hazard damages.</p> <p>Solution: The Borough will provide support in the form of expertise and guidance as the schools work to retrofit school buildings to reduce vulnerability to natural hazards, including wind-resistant glazing and addition of backup power.</p>	Existing	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane, Climate Change	2	School Board with assistance from local departments	School budgets	Schools protected from storm damages	Municipal staff time	Within 1 year	High	EAP	PI
2021-West Cape May-004	City Hall Retrofit	<p>Problem: City Hall's construction is outdated and leaves the building exposed to potential storm damages and impacts that would limit continuity of operations.</p>	Existing	Severe Weather, Severe Winter Weather,	1, 3	Engineering Department with support from	FEMA HMGP, BRIC, USDA Community	Ensures continuity of operations of City Hall	Medium	Within 5 years	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: Retrofit City Hall to reduce vulnerability to natural hazards, including wind-resistant glazing, improved communications system, and emergency lighting.		Nor'Easter, Hurricane, Climate Change		Emergency Management	Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget						
2021-West Cape May-005	Tree Maintenance Program	Problem: Falling trees and tree branches can result in utility failure and property damages. Solution: Work with Shade Tree Commission and utilities to develop and implement an improved tree maintenance program in conjunction with the electric utility (AC Electric).	N/A	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane, Climate Change	5	County Engineering with support from Shade Tree Commission and electric utility (AC Electric)	County budget, Municipal budget, Utilities budget	Reduction in tree damages and power failure	Low	Within 2 years	High	NSP	NR
2021-West Cape May-006	Sunset Boulevard Elevation Support	Problem: CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM) are low lying and experience flooding. The roadway is county owned. Solution: The Borough will support the County in the elevation of ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (Lower and WCM).	Existing	Climate Change, Flood	1	County Engineering, Administration	County budget, Municipal budget	Reduction in flooding, maintained emergency access	Staff time	Within 1 year	High	EAP	PI
2021-West Cape May-007	Stormwater Master Plan for West Cape May	Problem: West Cape May lacks a Stormwater Master Plan. Solution: The Borough will work with Cape May County Engineering and Planning to develop a Stormwater Master Plan.	Existing and New	Flood, Severe Weather	1, 3	County Engineering/ Planning with municipal support	County budget, Municipal budget	Stormwater Master Plan established	Staff time	Within 5 years	High	LPR	PR
2021-West Cape May-008	Disaster Debris Management Plan	Problem: The Borough lacks a Disaster Debris Management Plan. Solution: The Borough will develop a Disaster Debris Management Plan.	Existing	All Hazards	4	Public Works and Emergency Management	Municipal budget	Increased disaster response capabilities	Staff time	1 year	High	LPR	ES

Notes:



Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:


- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.13-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-West Cape May-001	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High 
2021-West Cape May-002	Cape Island Creek Tunnel Pump Station	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High
2021-West Cape May-003	Support School Retrofits	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-West Cape May-004	City Hall Retrofit	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-West Cape May-005	Tree Maintenance Program	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-West Cape May-006	Sunset Boulevard Elevation Support	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-West Cape May-007	Stormwater Master Plan for West Cape May	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High
2021-West Cape May-008	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.
Low (0-4), Medium (5-8), High (9-14).


 This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.13-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise		X	X	X			X	X
Coastal Erosion								
Disease Outbreak (new)								
Drought (new)								
Flood		X				X		
Hurricane		X	X	X			X	X
Nor'Easter		X	X	X			X	X
Severe Weather		X	X	X		X	X	X
Severe Winter Weather		X	X	X			X	X
Tsunami								
Wildfire								

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.13-1. Borough of West Cape May Hazard Area Extent and Location Map 1

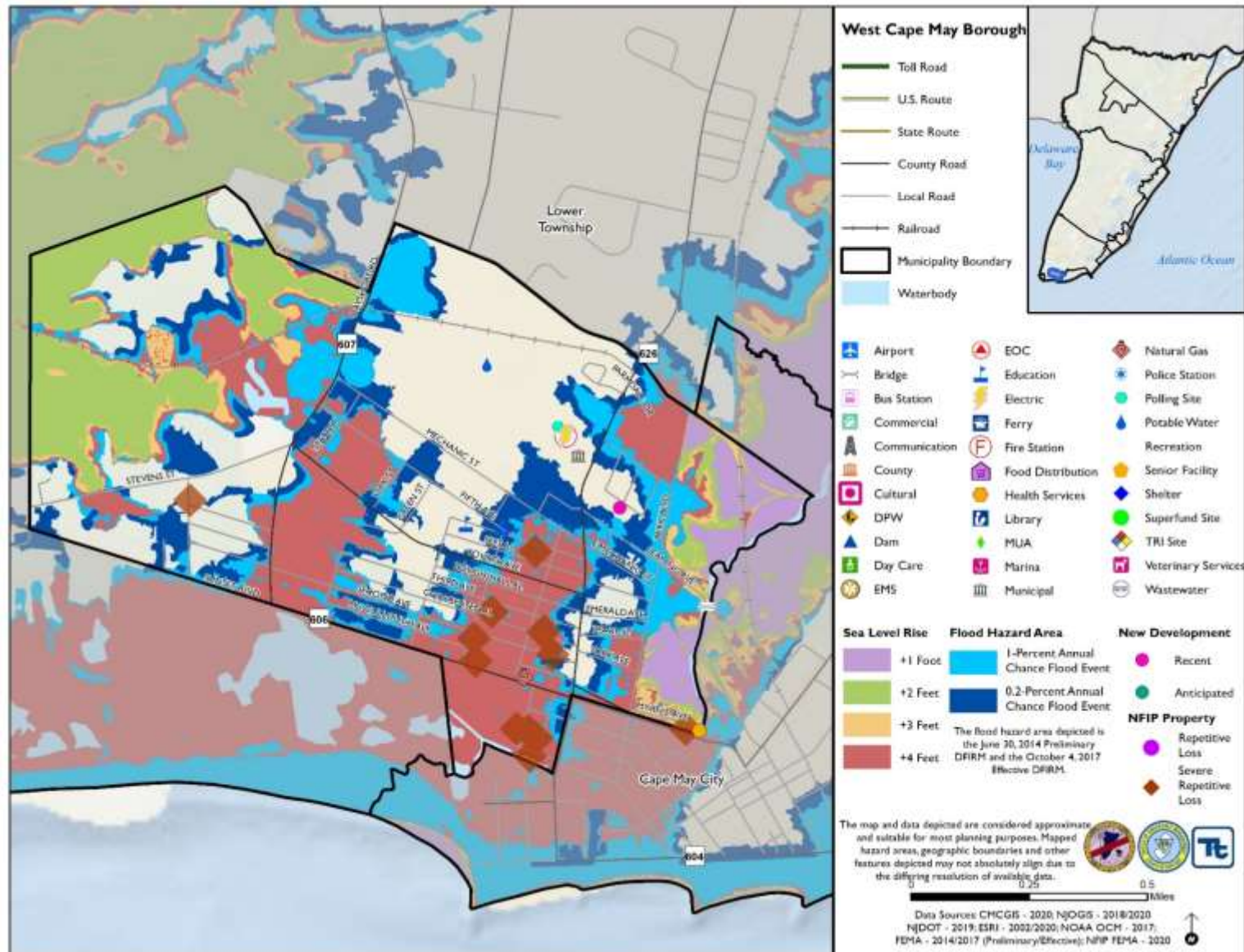




Figure 9.13-2. Borough of West Cape May Hazard Area Extent and Location Map 2

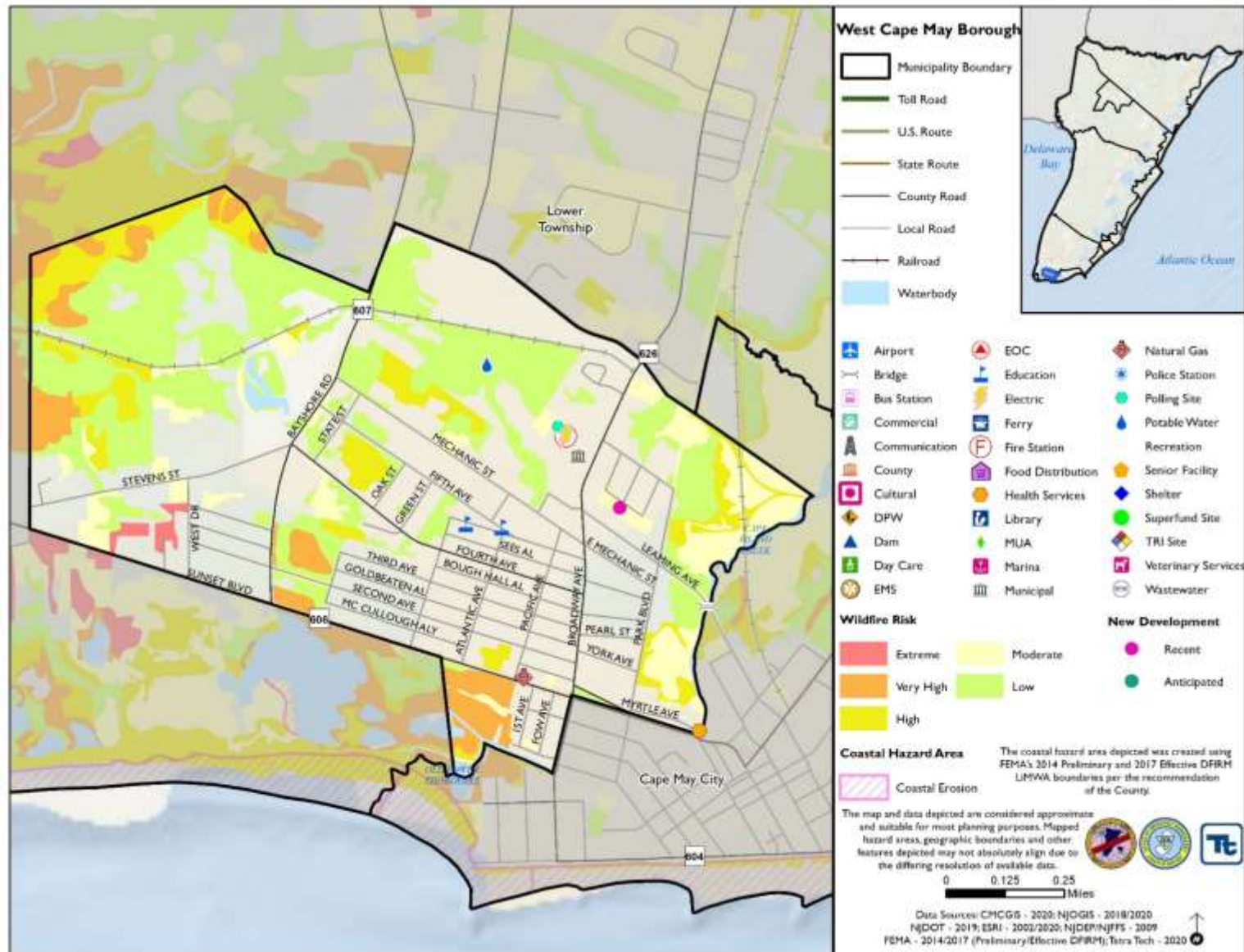
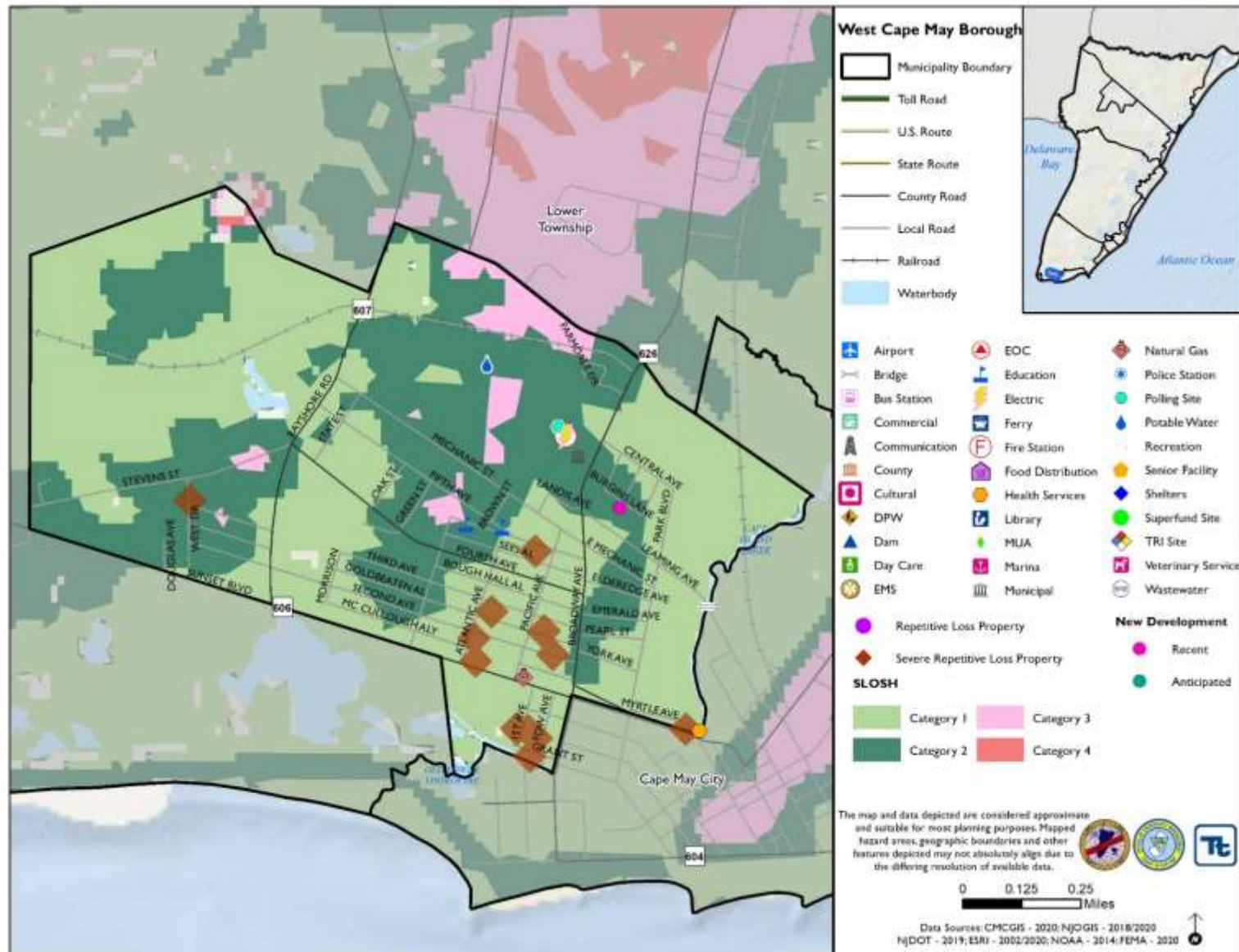




Figure 9.13-3. Borough of West Cape May Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-West Cape May-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Borough has 14 remaining unmitigated repetitive loss properties and 1 severe repetitive loss property.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will conduct outreach to RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$2 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-West Cape May-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Borough has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Borough.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Cape Island Creek Tunnel Pump Station		
Project Number:	2021-West Cape May-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Cape Island Creek tunnel causes the Borough to flood.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will construct a pump station to address flooding at the Cape Island Creek tunnel. The pump station will be protected to the 500-year flood level and will have a backup power generator on site.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Reduction in flooding near Cape Island Creek tunnel
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	\$3 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Raise roadways in the area	\$250,000	Flooding likely to impact property owners
	Elevate homes in the area	\$3 million	Costly and roadways still flood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Cape Island Creek Tunnel Pump Station	
Project Number:	2021-West Cape May-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The Borough is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	2 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	City Hall Retrofit		
Project Number:	2021-West Cape May-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane, Climate Change		
Description of the Problem:	City Hall's construction is outdated and leaves the building exposed to potential storm damages and impacts that would limit continuity of operations.		
Action or Project Intended for Implementation			
Description of the Solution:	Retrofit City Hall to reduce vulnerability to natural hazards, including wind-resistant glazing, improved communications system, and emergency lighting.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	500-year storm event	Estimated Benefits (losses avoided):	Ensures continuity of operations of City Hall
Useful Life:	TBD by feasibility assessment	Goals Met:	1, 3
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget
Responsible Organization:	Engineering Department with support from Emergency Management	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Rebuild facility to new standards	High	Costly and not necessary
	Build secondary facility protected to new standards	High	Costly and not necessary
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	City Hall Retrofit	
Project Number:	2021-West Cape May-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of City Hall
Property Protection	1	Project will protect City Hall from storm damage.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane, Climate Change
Timeline	0	Within 5 years
Agency Champion	1	Engineering Department with support from Emergency Management
Other Community Objectives	1	Protection of critical services
Total	12	
Priority (High/Med/Low)	High	



9.14 BOROUGH OF WEST WILDWOOD

This section presents the jurisdictional annex for the Borough of West Wildwood. The annex includes a general overview of the Borough of West Wildwood; an assessment of the Borough of West Wildwood's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.14.1 Hazard Mitigation Planning Team

The Borough of West Wildwood followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.14-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Jacquelyn Ferentz, OEM Coordinator Address: 701 West Glenwood Avenue West Wildwood, NJ 08260 Phone Number: (609) 522-4060x321 Email: jferentz@westwildwood.org		Name / Title: Lew Ostrander, Zoning Official Address: 701 West Glenwood Avenue West Wildwood, NJ 08260 Phone Number: (609) 780-2103 Email: lostrander@westwildwood.org
NFIP Floodplain Administrator		
Name / Title: John Fearheller, Floodplain Administrator/Assistant to Public Works Administrator Address: 701 West Glenwood Avenue West Wildwood, NJ 08260 Phone Number: (609) 522-4845 Email: jfearheller@westwildwood.org		
Name	Title	Method of Participation
Jacquelyn Ferentz	OEM Coordinator	Primary point of contact, reviewed and signed off on annex
Lew Ostrander	Zoning Official	Secondary point of contact
John Fearheller	Floodplain Administrator/Assistant to Public Works Administrator	NFIP floodplain administrator
Carl O'Hara	Deputy Clerk	Provided information and data, contributed to the mitigation strategy, reviewed the draft annex and provided feedback
Christopher Fox	Mayor	Reviewed and signed off on annex
William Null	Supervisor, Public Works	Reviewed and signed off on annex

9.14.2 Jurisdiction Profile

The Borough of West Wildwood is located on a barrier island along the Atlantic Ocean coastline of Cape May County, New Jersey. It is bounded on the north and west by the Township of Middle and the Richardson and Grassy Sound, on the east by the City of North Wildwood and the Atlantic Ocean, and on the south by the City of Wildwood and the Atlantic Ocean. West Wildwood is a small island connected to Wildwood by a two-lane bridge.



The Borough of West Wildwood and its neighboring communities of the City of Wildwood, City of North Wildwood, and the Borough of Wildwood Crest make up "The Wildwoods" resort, a popular vacation destination for those living in all parts of New Jersey as well as within the New York City and Philadelphia, Pennsylvania metropolitan areas.

According to the U.S. Census, the 2010 population for the Borough of West Wildwood was 603. The estimated 2018 population was 376, a 37.6 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 4.0 percent of the population is 5 years of age or younger and 39.9 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.14.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.14-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.14-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.14-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	0	0	0	0	0	0	0	0	0	0
Multi-Family	0	0	0	0	0	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	0	0	0	0	0	0
Property or Development Name	Type of Development	# of Units / Structures			Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
None identified										
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
None anticipated										

* Only location-specific hazard zones or vulnerabilities identified.

9.14.4 Capability Assessment

The Borough of West Wildwood performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.



- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.14.4). The Borough of West Wildwood identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.14-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Land Development Ordinance, adopted by the Board of Commissioners and last updated in January 2014.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Land Development Ordinance, adopted by the Board of Commissioners and last updated in January 2014, Section III, Zoning Districts, Rules and Regulations. This is a comprehensive Ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population; dividing the Borough of West Wildwood into districts for such purposes; adopting a map of said Borough showing boundaries and the classification of such districts; establishing rules, regulations and standards governing the subdivision and development of land within the Borough; establishing a combined Planning Board and Zoning Board of Adjustment; and prescribing penalties for the violation of its provision.The Ordinance is adopted pursuant to N.J.S.A. 40:55D-1 et seq., in order to promote and protect the public health, safety, comfort, convenience, prosperity, morals, and general welfare. These general objectives shall include, among others, the specific purposes set forth in the statements of intent of the various regulations for the respective zoning districts. This Ordinance shall be administered to insure the orderly growth and development, the conservation, protection and proper use of land and adequate provisions for circulation, utilities and services, and the conservation and environmental protection of all land, water and air resources within the jurisdiction of the Borough of West Wildwood.The Ordinance contains Regulations for Coastal Flood Hazard Protection, other Critical Areas and Drainage.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Land Development Ordinance, adopted by the Board of Commissioners and last updated in January 2014. Section IX, Design Standards for Subdivision and Site Plans. This section contains detailed descriptions of required Design Standards for Subdivisions and Site Plans and the process for approvals. No subdivision or site plan shall be approved by the Planning Board/Zoning Board unless the plan, development, or use meets the performance standards herein set forth.The Ordinance contains Regulations for Coastal Flood Hazard Protection, other Critical Areas and Drainage.					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Land Development Ordinance, adopted by the Board of Commissioners and last updated in January 2014. There is not a separate Ordinance, but this Ordinance contains a section on drainage and stormwater controls, common in NJ municipal development ordinances.					
Post-Disaster Recovery	No	N/A	No	No	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	No	-
Comment: <ul style="list-style-type: none">N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.					
Growth Management	Yes	N/A	Yes – if municipality has a Planning Board	No	-
Comment: <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the					



Section 9.14 - Borough of West Wildwood

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.</p> <ul style="list-style-type: none"> Land Development Ordinance, adopted by the Board of Commissioners and last updated in January 2014. The Ordinance contains a detailed section of Design Standards for Subdivisions and Site Plans and the process for approvals. The Ordinance contains Regulations for Coastal Flood Hazard Protection, other Critical Areas and Drainage. 					
Environmental Protection	No	-	No	-	-
Comment:					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Land Development Ordinance, adopted by the Board of Commissioners and last updated in January 2014. The Ordinance contains a section titled " Critical Areas, I-84". It states that the mapping of critical areas within the Borough of West Wildwood is based upon the delineation of flood hazard areas on the Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency dated October 17, 1975 <u>Regulations for Coastal Flood Hazard Protection</u> <p><u>Findings:</u></p> <ul style="list-style-type: none"> The Borough of West Wildwood occupies part of a low-lying barrier island which is exposed constantly to the threat of coastal flooding due to hurricanes, Nor'easters, and storms. The entire Borough of West Wildwood has been designated by the Federal Emergency Management Agency as being exposed to a one percent (1%) or greater chance of being flooded in any given year. The predictable hazards of coastal flooding subject the residents, owners of businesses, and visitors of the Borough to potential loss of life, personal injury, property damage, as well as disruption of commerce, resort activities, and governmental services, all of which adversely affect the public health, safety and welfare. <p><u>Purpose</u> – This Section has the following purposes:</p> <ul style="list-style-type: none"> To promote and protect the public health, safety and welfare; To minimize the potential for loss of life, personal injury, and public and private property damage from coastal flooding; To protect the public from the economic and social disruption caused by coastal flood damage, and; To minimize the need for rescue relief efforts associated with coastal flooding and generally undertaken at the expense of the general public. 					
Wellhead Protection	No	-	No	-	-
Comment:					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
Planning Documents					
Comprehensive / Master Plan	Yes	State & Local	Yes	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.West Wildwood Master Plan, dated August 2008. The New Jersey Municipal Land Use Law requires that all municipal Master Plans contain goals and objectives upon which the comprehensive Master Plan is to be based. The individual Master Plan elements provide the means of implementing the established goals. These goals guide the development of the Borough in terms of physical development as well as preservation, open space and protection of the environment.Goals of this Master Plan:<ul style="list-style-type: none">Create compatible land uses through appropriate zoning designations.Raise quality of life for residents, and increase attractiveness to visitors by improving visual environment of the community.Support existing, and encourage new water-dependent uses available to residents and visitorsMeet the retail needs of the residents and visitors and provide a balance of different usesCreate public access to environmentally sensitive areas for the enjoyment of residents and to promote eco-tourismEnergy conservation.Expand recreational opportunities for residents and visitors.Maximize protection against flooding from tides and storms.The Master Plan contains a detailed section on Environmental Resources and a Stormwater Management Plan Element.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Capital Improvement Budget and Plan 2020. The Borough adopted a three-year Capital Budget which included a \$2,310,000.00 project to improve sewers on Popular & G Avenues.					
Disaster Debris Management Plan	No	-	Yes	-	2021-West Wildwood-011
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.West Wildwood Master Plan, dated August 2008. As previously noted, the Master Plan contains a Stormwater Element.This Stormwater Management Plan (MSWMP) documents the strategy for the Borough of West Wildwood to address stormwater-related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations as promulgated by the New Jersey Department of Environmental Regulations. The elements of this plan are specified by N.J.A.C. 7:8-4 Municipal Stormwater Management Planning. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new development, defined as projects that disturb one					



Section 9.14 - Borough of West Wildwood

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
or more acre of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities.					
Stormwater Pollution Prevention Plan	No	-	Yes	-	-
Comment: <ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	Local	Yes – if located in a coastal zone	-	-
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	No	-	No	-	-
Comment:					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: •					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
Comment: • Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. • In conjunction with and support of the Cape May County Office of Emergency Management, the Borough maintains a CEMP.					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment:					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	No	-	No	-	-
Comment:					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.14-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Zoning Officer
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. As reported in the 2019 Master Plan, 119 parcels totaling 30.18 Acres, this is 15.7% of all parcels and 24.9% of Borough Land Area. This excludes Rights of Way, Conservative Districts, Water Ways and municipally owned properties.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

Table 9.14-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	-



Staff/Personnel Resource	Available?	Department/Agency/Position
Environmental Board / Commission	No	-
Open Space Board / Committee	Yes	Cape May County
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Emergency Management
Maintenance program to reduce risk	No	-
Mutual aid agreements	Yes	City of Wildwood/ Cape May County
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Borough Engineer Remington & Vernick
Engineers or professionals trained in building or infrastructure construction practices	Yes	Borough Engineer Remington & Vernick
Planners or engineers with an understanding of natural hazards	Yes	Borough Engineer Remington & Vernick
Staff with training in benefit/cost analysis	Yes	Business Administrator & CFO
Staff with training in green infrastructure	Yes	Borough Engineer
Staff with education/knowledge/training in low impact development	Yes	Wildwood Construction Office All new construction conforms with the 2018 IECC and rehab projects follow the NJ Uniform Construction Code
Surveyor	Yes	Borough Engineer
Stormwater engineer	Yes	Francis Pellegrino, Supervisor, Department of Public Works.
Personnel skilled or trained in GIS applications	Yes	Borough Engineer
Local or state water quality professional	Yes	City of Wildwood Water Department provides water for all four Wildwoods
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Francis Pellegrino, OEM
Watershed planner	Yes	City of Wildwood Water Department provide all services and personnel
Environmental specialist	No	-
Grant writers	Yes	Business Administrator
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

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

Table 9.14-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes/ None currently
Capital Improvements Project Funding	Yes – Through Bond Ordinance
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes-sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No



Other	Yes, USDA Rural Development
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EDUCATION AND OUTREACH CAPABILITY

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

Table 9.14-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	Yes, George Edgar Joyce
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes, Cape May County Hazard Mitigation Plan pamphlet Describing “What is a hazard mitigation plan”.
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes. Along with the County Pamphlet, Suggestions from the public are encouraged to be submitted to the Borough Clerks Office by mail.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Periodic public outreach/ presentations advertised and performed at Borough Hall to specifically address and educate on flood hazard risks.

COMMUNITY CLASSIFICATIONS

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

Table 9.14-8. Community Classifications

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

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.14-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate



Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor'Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The Borough does not currently have access to resources to determine the possible impacts of climate change upon the municipality. However, the administration is supportive of integrating climate change in policies or actions. The present administration has been involved in a Living Shoreline Project with financial support already expended.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.14-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction Official
Who is your floodplain administrator? (name, department/position)	Ray Poudrier
Are any certified floodplain managers on staff in your jurisdiction?	John Fearheller, PE, PP
What is the date that your flood damage prevention ordinance was last amended?	July 7, 2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Floodplain Ordinance meets Requirements.
When was the most recent Community Assistance Visit or Community Assistance Contact?	The most recent Community Assistance Visit was held June 12, 2015.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	The floodplain administrator is adequately trained for floodplain management responsibilities, although additional training would be welcome.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	No, the Borough is interested in rejoining the program.
How many flood insurance policies are in force in your jurisdiction?*	404 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	2,133 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$213,797 in payments
Do you maintain a list of properties that have been damaged by flooding?	Yes



Criterion	Response
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Stormwater Management:** The Borough is a MS4 Regulated Community and has stormwater management plan that identifies projects, actions or initiatives to mitigate stormwater flooding. (Note: Capability assessment said Borough was not an MS4 community)
- **Open Space:** The Borough continues to work with the County of Cape May concerning open space acquisition. The latest is the Bay Ave waterfront Development Plan which will allow for the acquisition of three waterfront building lots which will be restricted as Open Space.
- **Land Use Planning:** The City has a municipal planner that assists with and reviews any related issues to natural hazard risk reduction along with local planning board. Planning Board reviews all variances and all new development to ensure compliance with all regulations related to the project to include Coastal Area Facility Review Act.
- **Stormwater Management:** Stormwater Management functions in the community are performed by Francis Pellegrino, Supervisor, Department of Public Works.
- **Technical Resources:** The City has staff that can perform Substantial Damage estimates, and grant application preparation. Benefit-cost analysis is provided by contract support. City staff receive training and education in support of natural hazard risk reduction through the Nature Conservancy along with membership and monthly participation in the Coastal Coalition Group of Atlantic and Cape May County.
- **Administration:** Staff participate in associations and organizations the support natural hazard risk reduction capabilities including the Coastal Coalition Group of Atlantic and Cape May County.
- **NIMS Compliance:** The Municipal Emergency Manager, with support from the County OEM and New Jersey OEM, continue to develop, enhance, and implement existing emergency plans and ensure NIMS compliance.
- **Public Outreach:** Emergency Management and the Borough Administration are partnering to continue to enhance public outreach and education on natural hazard risk, preparedness and mitigation, specifically through the following activities:
 - Continue to update emergency contact information for Borough residents (from website)
 - Provide information regarding natural hazards on the Borough website

9.14.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of West Wildwood's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.14-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.



Table 9.14-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 23, 2016	Winter Storm Jonas	DR-4264	Coastal storm with major coastal flooding and high winds.	Although the County was impacted, the Borough of West Wildwood did not report damages.
July 10, 2020	Tropical Storm Fay	No	Tropical Storm with moderate flooding and high winds.	Although the County was impacted, the Borough of West Wildwood did not experience damages.
January 20, 2020-continuing	Covid-19 Pandemic	DR-4488, EM-3451	The coronavirus pandemic resulted in hospitalizations, death.	Although the County was impacted, the Borough of West Wildwood did not experience damages.
August 4, 2020	Tropical Storm Isias	Pending	Tropical Storm with high winds.	Although the County was impacted, the Borough of West Wildwood did not experience damages.

Source: NOAA NCEI 2020, FEMA 2020

9.14.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of West Wildwood risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of West Wildwood.

- Number of repetitive loss (RL) properties: 228
- Number of severe repetitive loss (SRL) properties: 118
- Number of RL/SRL properties that have been mitigated: 36

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.14-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure		Notes
		1% Event	0.2% Event	
WEST WILDWOOD VOLUNTEER FIRE COMPANY	Fire Stations		X	The public works /Fire Department Emergency Management Building is constructed above the 100-year base flood elevation
B & E Marina	Marinas	X	X	-
Gallo's Marina	Marinas	X	X	-
Spray Dock Marina	Marinas	X	X	-



Name	Type	Exposure		Notes
		1% Event	0.2% Event	
West Bay Marina	Marinas	X	X	-
C Marina	Marinas	X	X	-
West Wildwood Police Department	Police Stations	X	X	-
Neptune Pump Station	Wastewater Treatment Facilities	X	X	-
BOROUGH HALL	Polling Places, Municipal Facility	X	X	Located in AE Elevation 9 zone. Building was constructed in 1962, with renovations to the building elevating the floor to a base flood elevation of 10ft NGVD 1929. The buildings structural limitation preclude additional flood protection without building replacement.

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The Borough has 228 remaining unmitigated repetitive loss properties and 118 severe repetitive loss properties.
- It is the policy of the Borough to elevate roadways as part of maintenance projects. The following roadways require elevation:
 - Neptune Avenue from North Drive to Poplar Avenue.
 - Maple Avenue from Neptune Avenue eastward to Lake Road and Lake Road to the County Glenwood Avenue Bridge.
 - These two are prioritized over other roadways for two reasons: A) access to the Borough Fire Department Building which is the only Fire Department Fire Building in the Wildwoods not in the floodplain and B) the upward revision of the roadway elevations would not require redesign of the stormwater collection system.
- Glenwood Avenue is a County Roadway that requires elevation and should be prioritized by the County.
- Construction of the 26th Street Wave Attenuation System would benefit the Borough as a whole.
- Construction of additional facilities above the floodplain in the X Zone at the Public Works Building completing the original 3,600 square feet footprint.
- The Public Works/Fire Department/Emergency Management Office Building has an existing 30 kW army surplus diesel generator manufacture in June 1985. Given the 35-year-old age of the generator, replacement is recommended.
- The sanitary pump station operated by the Borough relies on portable powers.
- The Arion Avenue Drainage System did not have the full design constructed in 2007 and requires the full completion of the design. The Avenue E Drainage System also did not have its full design constructed in 2002 and requires full completion of the design.
- The Lake Road Drainage System requires extension from Maple Avenue to Pine Avenue.
- City Hall is floodprone. The building was constructed in 1962. Renovations to the building have elevated the floor elevation of the offices to the base flood elevation but the building's structural limitations preclude any additional flood protection without building replacement. The building requires



relocation at the Public Works/Fire Department/Emergency Management Building which is located in the X zone.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of West Wildwood that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of West Wildwood has significant exposure. A map of the Borough of West Wildwood hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of West Wildwood. The Borough of West Wildwood has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Borough indicated the following:

- The Borough agreed with the calculated hazard rankings.

Table 9.14-13. Borough of West Wildwood Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak (new)	Drought (new)	Flood	Hurricane
High	High	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Low	Low

9.14.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as



such in the following table and can also be found under ‘Capability Assessment’ presented previously in this annex.

Table 9.14-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
BWW-1a	Property Mitigation Support – Retrofit: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Borough (likely through NFIP Floodplain Administrator)	In Progress	X	2021-West Wildwood-001
BWW-1b	Property Mitigation Support – Acquisition/Relocation: Where appropriate, support acquisition and/or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Borough	No Progress, not feasible		
BWW-2	Work with FEMA and ISO to re-establish participation in CRS.	Borough	In Progress	X	2021-West Wildwood-009
BWW-3	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	Borough (through mitigation planning point of contacts)	Ongoing Capability		
BBW-4	NFIP Continued Compliance: Continue to maintain compliance with, and good-standing in the National Flood Insurance program.	Municipality (likely through NFIP Floodplain Administrator)	Ongoing Capability		
BWW-5	Emergency Management Plans: Continue to develop, enhance, and implement existing emergency plans and ensure NIMS compliance.	Municipal Emergency Manager with support from County OEM and NJOEM	Ongoing Capability		
BWW-6	Mutual Aid: Create/enhance/maintain mutual aid agreements with neighboring communities and continue cooperation and support with the City of Wildwood.	Borough	Ongoing Capability		
BWW-7	Continue to support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
BWW-8	Regional Bulkheading Project with all Wildwoods: Elevate bulkhead heights and replace all municipal bulkhead to new ordinance elevations. Borough	Municipality (engineering and DPW)	In Progress	X	2021-West Wildwood-010



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	to develop ordinance to allow local code official to issue summons for non-compliance regarding bulkhead heights.				
BWW-9	Work with the County of Cape May to address flooding on Glenwood Avenue (CR-614) through West Wildwood	County of Cape May, Borough	In Progress	X	2021-West Wildwood-008
BWW-10	Reconstruction of Neptune Avenue from Glenwood Avenue to the North Drive entrance to the Fire House – Public Works site.	Municipal Engineering and DPW	Complete		
BWW-11	Backup power for Police Administration Building.	Municipal Engineering and DPW	Complete		
BWW-12	The peninsula along 26th street which serves as a breakwater for homes on the north side of Poplar Ave is eroding exposing a greater risk to those homes of storm damage. The Borough is working with the Nature Conservancy under the N.J. Resilient Coastline Initiative to develop a Nature Based Living Shoreline Project to address the erosion. This will enhance the Borough's resiliency during weather events.	Borough, working with Nature Conservancy	In Progress, approval still pretending	X	2021-West Wildwood-005
BWW-13	Continue to enhance public outreach and education on natural hazard risk, preparedness and mitigation, specifically through the following activities: •Continue to update emergency contact information for Borough residents (from website) •Provide information regarding natural hazards on the Borough website	Emergency Management, Borough Administration	Ongoing Capability		

In addition to the above progress, the Borough of West Wildwood identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- Reconstruction of Pine Avenue and Avenue O. The reconstruction of roadways included elevation to improve flood resiliency.
- Glenwood Avenue, bulkhead replacement and ADA access ramps to the beach.
- 2016 Road Program: Avenue S, Mueller Avenue, Avenue P, Avenue Q, and Avenue R were reconstructed with elevation and drainage to improve flood resiliency.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of West Wildwood participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough



of West Wildwood participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.14-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of West Wildwood would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.14-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.14-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-West Wildwood-001	Repetitive Loss Mitigation	<p>Problem: 228 remaining unmitigated repetitive loss properties and 118 severe repetitive loss properties. There is no room to relocate properties within the Borough.</p> <p>Solution: Conduct outreach to 300 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents	\$30 million	3 years	High	SIP	PP
2021-West Wildwood-002	Relocation of City Hall	<p>Problem: City Hall is floodprone. The building was constructed in 1962. Renovations to the building have elevated the floor elevation of the offices to the base flood elevation but the building's structural limitations preclude any additional flood protection without building replacement. The building requires relocation.</p> <p>Solution: The Borough will complete construction of additional facility space at the Public Works Building above the floodplain in the X Zone completing the original 3,600 square feet footprint.</p>	Existing	Flood, Severe Weather	1, 3	Administration, Engineer, Public Works	FEMA HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget	Protection of critical services, flood risk reduced	High	Within 5 years	High	SIP	PP
2021-West Wildwood-003	Public Works and Fire Department Generator	<p>Problem: The Public Works/Fire Department/Emergency Management Office Building has an existing 30 kW army surplus diesel generator manufacture in June 1985. Given the 35-year-old age of the generator, replacement is recommended.</p>	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'easter	3, 4	Engineer, Public Works	FEMA HMGP and BRIC, USDA Community Facilities Grant	Ensures continuity of operations of Public Works	\$50,000	Within 5 years	ES	SIP	ES



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Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: The Borough will purchase and install the selected replacement generator and necessary electrical components to supply backup power to the Public Works and Fire Department complex.					Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	and Fire Department					
2021-West Wildwood-004	Extension of Lake Road and Completion of Arion Avenue and Avenue E Drainage Systems	<p>Problem: The Lake Road Drainage System requires extension from Maple Avenue to Pine Avenue. The Arion Avenue Drainage System did not have the full design constructed in 2007 and requires the full completion of the design. The Avenue E Drainage System also did not have its full design constructed in 2002 and requires full completion of the design.</p> <p>Solution: Public Works will install the identified completions and extensions of stormwater systems. In situations where the roadway needs to be replaced, the Borough will look to raise the roadway elevation in continuation with Borough policy for roadway improvements.</p>	Existing	Flood, Severe Weather	1	Engineer, Public Works	HMGP, BRIC, Borough budget	Increase d drainage , reduction in flooding	High	Wit hin 5 year s	High	SIP	SP
2021-West Wildwood-005	Wave Attenuation System	<p>Problem: The peninsula along 26th street which serves as a breakwater for homes on the north side of Poplar Ave is eroding exposing a greater risk to those homes of storm damage.</p> <p>Solution: The Borough is working with the Nature Conservancy under the N.J. Resilient Coastline Initiative to develop a Nature Based Living Shoreline Project to address the erosion. This will enhance the Borough's resiliency during weather events.</p>	Existing	Coastal Erosion	1, 5	Borough working with Nature Conservancy	N.J. Resilient Coastline Initiative, Borough budget	Reducti on in coastal erosion risk	Mediu m	2 year s	High	NSP	NR
2021-West Wildwood-006	Roadway Elevations	Problem: It is the policy of the Borough to elevate roadways as part of maintenance projects. The following roadways require elevation:	Existing	Flood, Severe Weather, Climate	1	Engineer, Public Works	HMGP, BRIC, Borough budget	Flood risk reduced. Access	High	2 year s	High	SIP	PP



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Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		<ul style="list-style-type: none"> •Neptune Avenue from North Drive to Poplar Avenue. •Maple Avenue from Neptune Avenue eastward to Lake Road and Lake Road to the County Glenwood Avenue Bridge. <p>Solution: The Borough will complete elevation of the roadways. These two are prioritized over other roadways for two reasons: A) access to the Borough Fire Department Building which is the only Fire Department Fire Building in the Wildwoods not in the floodplain and B) the upward revision of the roadway elevations would not require redesign of the stormwater collection system.</p>		Change and Sea Level Rise				to critical facilities maintained					
2021-West Wildwood-007	Permanent Generator for Sanitary Pump Station	<p>Problem: The sanitary pump station only has a portable backup generator. This requires deployment during power outages.</p> <p>Solution: The Borough will purchase and install a permanent generator for the sanitary pump station.</p>	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 3	Engineer, Public Works	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of sanitary pump station	\$40,000	Within 5 years	High	SIP	ES
2021-West Wildwood-008	Glenwood Avenue	<p>Problem: Glenwood Avenue is a County Roadway that requires elevation and should be prioritized by the County.</p> <p>Solution: The Borough will hold discussions with the County to discuss the needs of the Borough for elevation and support the implementation process.</p>	Existing	Flood, Severe Weather, Climate Change and Sea Level Rise	1	County, Administration	County, Borough budget	Glenwood meets roadway levels of rest of Borough, flood risk reduced	Staff time	Within 6 months	High	EAP	PI



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Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-West Wildwood-009	Community Rating System Enrollment	Problem: The Borough is interested in enrollment in the Community Rating System. Solution: The Borough will reach out to NJ DEP and ISO to pursue entry into the CRS program.	Both	Flood	2	Administration	Borough budget	Increase floodplains in administration	Staff time	Within 2 years	High	LPR, EAP	PR, PP, PI
2021-West Wildwood-010	Regional Bulkheading Project with all Wildwoods	Problem: Elevate bulkhead heights and replace all municipal bulkhead to new ordinance elevations. Borough to develop ordinance to allow local code official to issue summons for non-compliance regarding bulkhead heights. Solution: Elevate bulkhead heights and replace all municipal bulkhead to new ordinance elevations. Borough to develop ordinance to allow local code official to issue summons for non-compliance regarding bulkhead heights.	Existing	Coastal Erosion, Flood	1	Public Works, Engineer	Borough budget	Consistent bulkhead heights and standards	Staff time for ordinance, High for Borough bulkheads	Within 5 years	High	LPR, SIP	PP, PR
2021-West Wildwood-011	Disaster Debris Management Plan	Problem: The Borough lacks a Disaster Debris Management Plan. Solution: The Borough will develop and adopt a Disaster Debris Management Plan.	Existing	All Hazards	4, 6	OEM, Public Works	Borough budget	Plan in place to address post event debris	Staff time	1 year	High	LPR	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.






- *Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.*

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*



Table 9.14-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-West Wildwood-001	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	1	0	1	0	1	1	11	High 
2021-West Wildwood-002	Relocation of City Hall	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-West Wildwood-003	Public Works and Fire Department Generator	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-West Wildwood-004	Extension of Lake Road and Completion of Arion Avenue and Avenue E Drainage Systems	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
2021-West Wildwood-005	Wave Attenuation System	0	1	1	1	1	0	1	1	1	1	0	1	1	1	11	High
2021-West Wildwood-006	Roadway Elevations	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2021-West Wildwood-007	Permanent Generator for Sanitary Pump Station	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
2021-West Wildwood-008	Glenwood Avenue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-West Wildwood-009	Community Rating System Enrollment	1	1	1	1	1	1	1	1	1	1	0	1	1	1	13	High
2021-West Wildwood-010	Regional Bulkheading Project with all Wildwoods	0	1	1	1	0	1	1	1	1	1	1	0	1	1	11	High
2021-West Wildwood-011	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.





Table 9.14-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise			X		X			X
Coastal Erosion	X	X		X	X			X
Disease Outbreak (new)					X			X
Drought (new)					X			X
Flood	X	X	X		X	X	X	X
Hurricane					X			X
Nor'Easter					X			X
Severe Weather		X	X		X	X	X	X
Severe Winter Weather					X			X
Tsunami					X			X
Wildfire					X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.14-1. Borough of West Wildwood Hazard Area Extent and Location Map 1

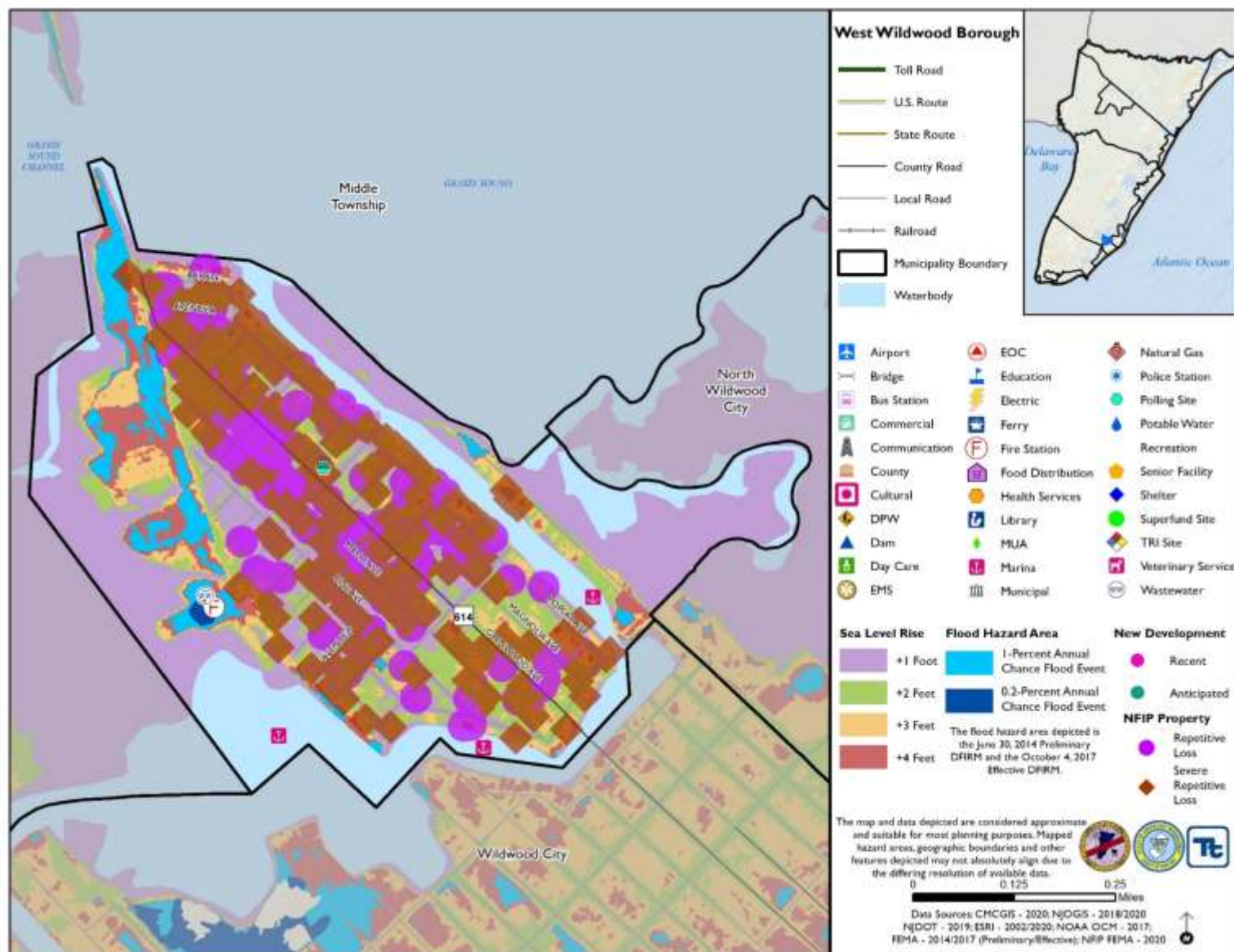




Figure 9.14-2. Borough of West Wildwood Hazard Area Extent and Location Map 2

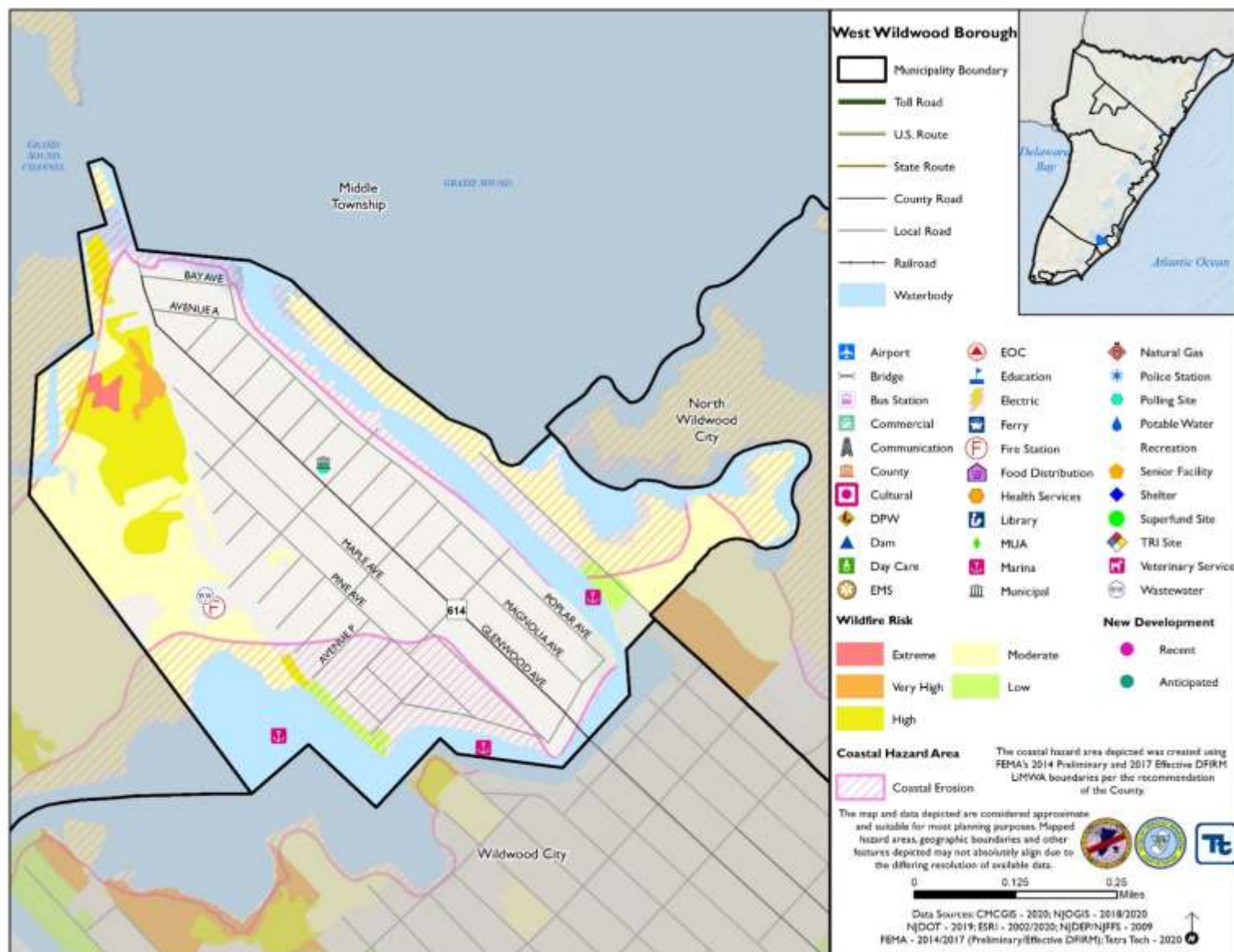
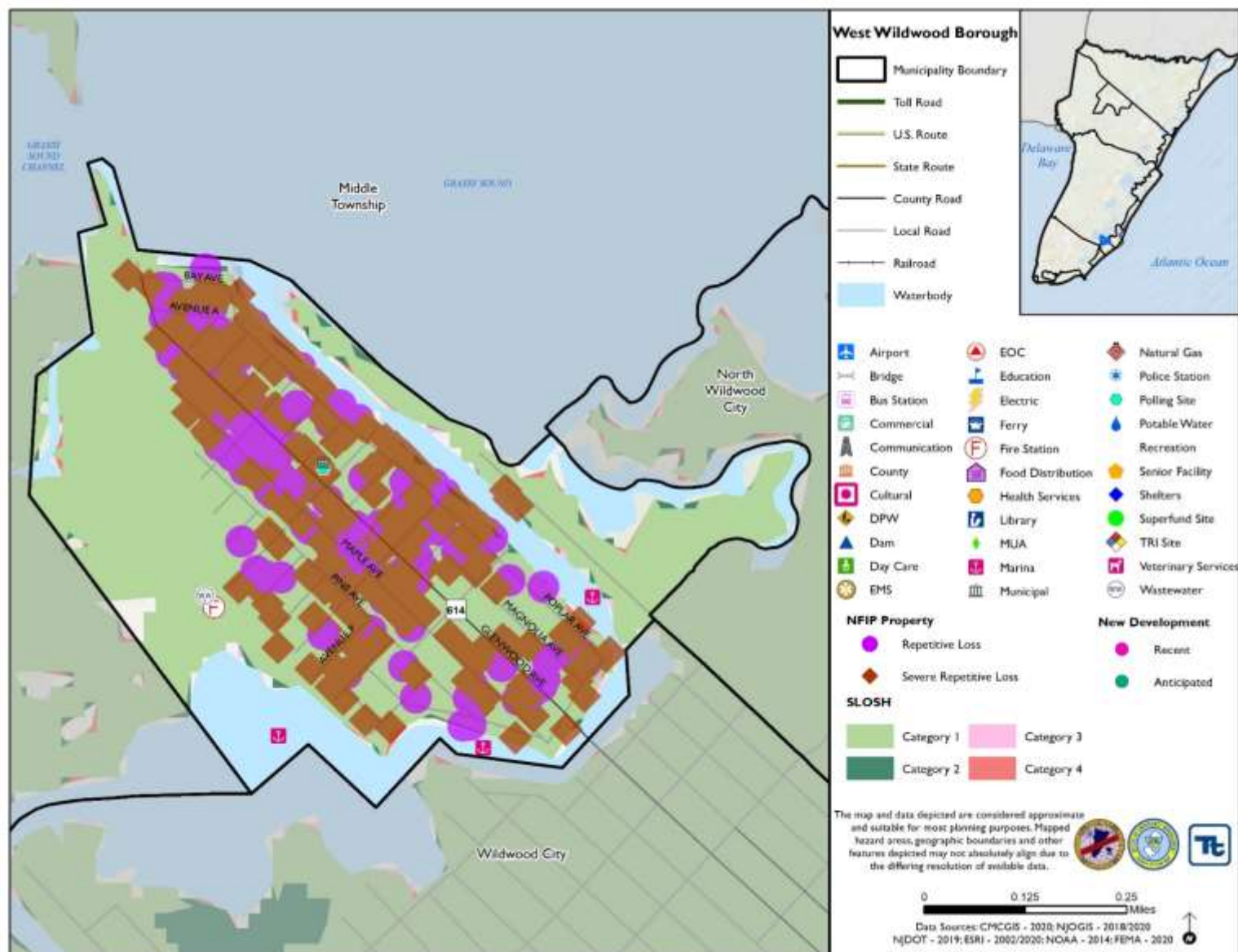




Figure 9.14-3. Borough of West Wildwood Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-West Wildwood-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. There are 228 remaining unmitigated repetitive loss properties and 118 severe repetitive loss properties.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 300 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$30 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-West Wildwood-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families protected from flood areas.
Property Protection	1	Properties protected from flood risk
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Borough has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Relocation of City Hall		
Project Number:	2021-West Wildwood-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	City Hall is floodprone. The building was constructed in 1962. Renovations to the building have elevated the floor elevation of the offices to the base flood elevation but the building's structural limitations preclude any additional flood protection without building replacement. The building requires relocation.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will complete construction of additional facility space at the Public Works Building above the floodplain in the X Zone completing the original 3,600 square feet footprint.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	500-year flood level	Estimated Benefits (losses avoided):	Ensures continuity of operations of City Hall and reduces flood risk
Useful Life:	100 years	Goals Met:	1, 3
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	FEMA HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget
Responsible Organization:	Engineer, Administration, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Elevate City Hall	N/A	Not possible due to structural limitations of building
	Build levee around facility	N/A	No space for full levee system
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Relocation of City Hall	
Project Number:	2021-West Wildwood-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of City Hall
Property Protection	1	Project will protect City Hall from flood damage.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Administration, Public Works
Other Community Objectives	1	Protection of critical services
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Public Works and Fire Department Generator		
Project Number:	2021-West Wildwood-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	The Public Works/Fire Department/Emergency Management Office Building has an existing 30 kW army surplus diesel generator manufacture in June 1985. Given the 35-year-old age of the generator, replacement is recommended.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will purchase and install the selected replacement generator and necessary electrical components to supply backup power to the Public Works and Fire Department complex.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	Assumed 30kW	Estimated Benefits (losses avoided):	Ensures continuity of operations of Public Works and Fire Department
Useful Life:	20 years	Goals Met:	3, 4
Estimated Cost:	\$50,000	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Public Works and Fire Department Generator	
Project Number:	2021-West Wildwood-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of Public Works Maintenance Building
Property Protection	1	Project will protect building from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Extension of Lake Road and Completion of Arion Avenue and Avenue E Drainage Systems		
Project Number:	2021-West Wildwood-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Lake Road Drainage System requires extension from Maple Avenue to Pine Avenue. The Arion Avenue Drainage System did not have the full design constructed in 2007 and requires the full completion of the design. The Avenue E Drainage System also did not have its full design constructed in 2002 and requires full completion of the design.		
Action or Project Intended for Implementation			
Description of the Solution:	Public Works will install the identified completions and extensions of stormwater systems. In situations where the roadway needs to be replaced, the Borough will look to raise the roadway elevation in continuation with Borough policy for roadway improvements.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	According to design specifications	Estimated Benefits (losses avoided):	Increased drainage, reduction in flooding
Useful Life:	20 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Within 5 years	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Buyout homes exposed to flooding	High	Costly
	Close roadways that experience flooding	Low	Loss of access
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Extension of Lake Road and Completion of Arion Avenue and Avenue E Drainage Systems	
Project Number:	2021-West Wildwood-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Properties protected from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Roadway Elevations		
Project Number:	2021-West Wildwood-006		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather, Climate Change and Sea Level Rise		
Description of the Problem:	<p>It is the policy of the Borough to elevate roadways as part of maintenance projects. The following roadways require elevation:</p> <ul style="list-style-type: none"> • Neptune Avenue from North Drive to Poplar Avenue. • Maple Avenue from Neptune Avenue eastward to Lake Road and Lake Road to the County Glenwood Avenue Bridge. 		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will complete elevation of the roadways. These two are prioritized over other roadways for two reasons: A) access to the Borough Fire Department Building which is the only Fire Department Fire Building in the Wildwoods not in the floodplain and B) the upward revision of the roadway elevations would not require redesign of the stormwater collection system.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	6" to 12" elevation	Estimated Benefits (losses avoided):	Flood risk reduced. Access to critical facilities maintained
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, Municipal budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadway	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Roadway Elevations	
Project Number:	2021-West Wildwood-006	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadway from flood damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather, Climate Change and Sea Level Rise
Timeline	1	Within 2 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Permanent Generator for Sanitary Pump Station		
Project Number:	2021-West Wildwood-007		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	The sanitary pump station only has a portable backup generator. This requires deployment during power outages.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will purchase and install a permanent generator for the sanitary pump station.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of sanitary pump station
Useful Life:	20 years	Goals Met:	1, 3
Estimated Cost:	\$40,000	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Permanent Generator for Sanitary Pump Station	
Project Number:	2021-West Wildwood-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect pump station from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



9.15 CITY OF WILDWOOD

This section presents the jurisdictional annex for the City of Wildwood. The annex includes a general overview of the City of Wildwood; an assessment of the City of Wildwood's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.15.1 Hazard Mitigation Planning Team

The City of Wildwood followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.15-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Daniel Dunn, OEM Coordinator Address: 4400 New Jersey Ave. Wildwood, NJ 08260 Phone Number: (609)846-2038 Email: d.dunn@wildwoodnj.org		Name / Title: Steve Booy, Zoning Officer, NFIP Floodplain Administrator Address: 4400 New Jersey Ave. Wildwood, NJ 08260 Phone Number: (609)522-2444 Email: sbooy@wildwoodnj.org
NFIP Floodplain Administrator		
Name / Title: Steve Booy, Zoning Officer/NFIP Floodplain Administrator Address: 4400 New Jersey Ave. Wildwood, NJ 08260 Phone Number: (609) 522-2444 Email: sbooy@wildwoodnj.org		
Name	Title	Method of Participation
Daniel Dunn	OEM Coordinator	Mitigation Planning POC. Data collection and Annex development. Provided input on mitigation strategy. Reviewed and signed off on annex.
Steve Booy	Zoning Officer	Mitigation Planning Alternate POC. NFIP Floodplain Administration. Data collection and Annex development. Provided input on mitigation strategy. Reviewed and signed off on annex.
Kate Dunn	Technical Assistant to the Construction Official/Planning & Zoning Board Secretary	Data collection related to matters related to construction, development, and the Uniform Construction Code.
Jeannette J. Powers	Fiscal/CFO	Reviewed and signed off on annex
Rick Allen	Construction Official	Reviewed and signed off on annex
Richard Harrow	Director of Public Works	Reviewed and signed off on annex
Ernie Troiano III	Chief, Fire Department	Reviewed and signed off on annex



9.15.2 Jurisdiction Profile



The City of Wildwood is located on a barrier island along the Atlantic Ocean coastline of Cape May County, New Jersey. It is bounded on the north-northeast by the Borough of West Wildwood, Township of Middle and the City of North Wildwood, on the east-southeast by the Atlantic Ocean, on the south-southwest by the Borough of Wildwood Crest and the Atlantic Ocean, and the west by the Township of Lower. It is part of the Ocean City Metropolitan Statistical Area.

The City of Wildwood is a 1.3 square mile seashore resort City that is a popular summer tourist destination for hundreds of thousands of visitors each year. The City of Wildwood was created in 1912 when the former Boroughs of Wildwood and Holly Beach consolidated to form the City of Wildwood. The City is famous for its large boardwalk with numerous shops, restaurants, amusement piers and waterparks and for being home to the World's largest, finest, and safest bathing beach. The City is home to many hotels/motels, apartment/rooming houses, bed and breakfasts, restaurants, bars/nightclubs, as well as many condos and single-family residences.

Wildwood is governed by a three-member commission under the Walsh Act Commission form of municipal government. The city is one of 30 municipalities (of the 565) statewide that use this form of government. The governing body is comprised of three commissioners, who are elected at-large on a nonpartisan basis to serve concurrent four-year terms of office, with the vote taking place as part of the November general election. At a reorganization conducted after each election, the commission selects one of its members to serve as mayor and gives each commissioner an assigned department to oversee and manage.

Wildwood is also used as a collective term referring to the four communities with Wildwood comprising part of the municipality name — specifically the Borough of Wildwood Crest, City of Wildwood, Borough of West Wildwood and the City of North Wildwood — together with Diamond Beach, a portion of Lower Township situated on the island. Collectively, these communities are known as "The Wildwoods."

According to the U.S. Census, the 2010 population for the City of Wildwood was 5,325. The estimated 2018 population was 5,073, a 4.7 percent decrease from the 2010 Census. It is important to note that the summer seasonal population can swell to 250,000 or more. Data from the 2018 U.S. Census American Community Survey indicated that 6.0 percent of the population is 5 years of age or younger and 19.5 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.15.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.15-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.15-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.



Table 9.15-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	7	7	4	4	14	14	4	4	8	8
Multi-Family	0	0	0	0	0	0	0	0	6	6
Other (commercial, mixed-use, etc.)	1	1	2	2	3	3	4	4	1	1
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
Waves Hotel	Hotel		42 rooms		4001 Atlantic Ave.		1- and 0.2-Percent Annual Chance Flood Event Category 1, 2, 3, 4 Storm		Completed/Occupied	
Mudhen Brewing Co.	Brewery/Restaurant		1		127 W. Rio Grande Ave.		1- and 0.2-Percent Annual Chance Flood Event Category 1,2,3,4 Storm		Completed/Occupied	
Cap'n Jacks Bar & Grill	Restaurant/Bar		1		3800 Boardwalk		Coastal Erosion Hazard Area 1- and 0.2-Percent Annual Chance Flood Event Category 1, 2, 3, 4 Storm		Completed/Occupied	
Rio Grande Ave. Gateway	Roadway/Gateway		N/A		W. Rio Grande Ave.		SFHA		Completed	
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
3600 Pacific Ave.	Commercial/Residential		72 units		3600 Pacific Ave.		1- and 0.2-Percent Annual Chance Flood Event Category 1,2,3,4 Storm		Waiting on CAFRA approval	
Oceanic Motel	Hotel Expansion		TBD		4600 Ocean Ave.		1- and 0.2-Percent Annual Chance Flood Event Category 1,2,3,4 Storm		In progress	

* Only location-specific hazard zones or vulnerabilities identified.

9.15.4 Capability Assessment

The City of Wildwood performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.



- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.15.4). The City of Wildwood identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.15-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	2021-WILDWOOD-008
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Uniform Construction Code, Chapter 11A, adopted by the Board of Commissioners. There is hereby established in the City of Wildwood a State Uniform Construction Code enforcing agency to be known as the "Department of Inspections," consisting of a Construction Official, Building Subcode Official and Fire Protection Subcode Official, Plumbing Subcode Official, Electrical Subcode Official and such other subcode officials for such additional subcodes. The Construction Official shall be the chief administrator of the enforcing agency.Buildings, Chapter 11, adopted by the Board of Commissioners. A code is hereby adopted establishing rules and regulations for the construction, alteration, repair, removal, demolition, use, location, occupancy and maintenance of all buildings and structures and their service equipment; providing for certain permits and licenses; and providing penalties for its violation. A copy of the code is attached to and made a part of this section without the text of the code being included herein.Chapter 11 includes Design Standards for stormwater management, for example, storm drain inlets above shall comply with the standards to control passage of solid and floatable materials through storm drain inlets. For purposes of this paragraph, "solid and floatable materials" means sediment, debris, trash and other floating, suspended, or settleable solids. Also, within Chapter 11 is a section regulating bulkheads. It states that the height of any bulkhead to be constructed will be a minimum of 8'. The City is currently developing an updated bulkhead ordinance.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	Yes
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan					



		Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
					If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">Land Development Ordinance, 'Chapter 17', adopted by the Board of Commissioners, 01-23-19. A comprehensive Ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population; dividing the City of Wildwood into districts for such purposes. This Chapter also includes establishing rules, regulations and standards governing the subdivision and development of land within the City; establishing a Planning Board and a Zoning Board of Adjustment; and prescribing penalties for the violation of its provisions.This Ordinance is divided into multiple Chapters and includes comprehensive sections regulating Flood Hazard Prevention, Stormwater, and Critical Areas.						
Subdivisions		Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Land Development Ordinance, Chapter 17, adopted by the Board of Commissioners, 01-23-19. Chapter 800, Development Application and Review includes the review and approval process for Subdivisions. Subdivisions are subject to the comprehensive development standards of the Land Development Ordinance.						
Stormwater Management		Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Stormwater Management, Chapter 25, adopted by the Board of Commissioners. Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated quantity or amount of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.It is the purpose of this chapter to establish minimum stormwater management requirements and controls for "major development". This chapter shall be applicable to all site plans and subdivisions for the following major developments that require preliminary or final site plan or subdivision review, and Nonresidential major developments.						
Post-Disaster Recovery		No	-	No	-	-
Comment:						
Real Estate Disclosure		Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none">N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.						
Growth Management		Yes	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.City has an endorsed Centers Designation Plan through the State of New Jersey Office of Planning Advisory.						



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Land Development Ordinance, Chapter 17, adopted by the Board of Commissioners, 01-23-19. Chapter 800, Development Application and Review includes the review and approval process for Site Plans. Site Plans are subject to the comprehensive development standards of the Land Development Ordinance. 					
Environmental Protection	Yes	State	Yes	Yes	-
Comment: <ul style="list-style-type: none"> Coastal Areas Facilities Review Act (CAFRA) and the New Jersey Department of Environmental Protection (NJDEP) 					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Land Development Ordinance, 'Chapter 17', adopted by the Board of Commissioners, 01-23-19. This Ordinance is divided into multiple Chapters and includes comprehensive sections regulating Flood Hazard Prevention, Stormwater, and Critical Areas. Regulations for Coastal Flood Hazard Protection. Findings: <ul style="list-style-type: none"> The City of Wildwood occupies part of a low-lying barrier island which is exposed constantly to the threat of coastal flooding due to hurricanes, northeasters, and storms; The entire City of Wildwood has been designated by the Federal Emergency Management Agency as being exposed to a one percent (1%) or greater chance of being flooded in any given year. The oceanfront has been designated as being exposed to high velocity waves; The beaches and dunes of Wildwood are located entirely within these coastal flood hazard areas and, if properly maintained and protected, in accordance with this Section, provide some natural protection from the flooding that result from storm waves; and The predictable hazards of coastal flooding subject the residents, owners of businesses, and visitors of the City of Wildwood to potential loss of life, personal injury, and property damage, as well as disruption of commerce, resort activities, and governmental services, all of which adversely affect the public health, safety and welfare. Purpose: <ul style="list-style-type: none"> To promote and protect the public health, safety, and welfare To minimize the potential for loss of life, personal injury, and public and private property damage from coastal flooding To protect the beaches and dunes of Wildwood from inappropriate construction and indiscriminate trespass this reduces their effectiveness in limiting the risks of coastal flooding; To protect the public from the economic and social disruption caused by coastal flood damage; and To minimize the need for rescue relief efforts associated with coastal flooding and generally undertaken at the expense of the general public This Chapter required that new construction and substantial improvements of any residential or nonresidential structure shall have the lowest floor, including basement, elevated to or above the base flood elevation, plus two feet. 					
Wellhead Protection	No	-	No	-	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Emergency Management	Yes	Local, County, State, Federal	Yes	Yes	-
Comment:					
Climate Change	Yes	Local	No	No	Yes
Comment: <ul style="list-style-type: none">The City of Wildwood Master Plan addresses climate change. Additionally, the City is in the process of developing a watershed master plan for the CRS program which will include a detailed analysis of NOAA predicted sea level rise for 2100.					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Planning Documents					
Comprehensive / Master Plan	Yes, Updated in 2017	Local- P/Z Board	Yes	Yes	-
Comment: <ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.The Open Space Plan is section 11 of the Master Plan. All of Wildwood's publicly owned beaches, which are areas of high natural hazard risk, are designated as open space, which in turn limits risks associated with development.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Capital Budget and Capital Improvement Program, 2020, approved by the Board of Commissioners. It includes current funding for projects such as, Boardwalk Repairs, Acquisition of Equipment, Building Repairs and Improvements, Road Reconstruction; and Back Bay Improvements.Projects included would be the Pacific Ave. drainage/stormwater project and the Leaming Ave. Pump Station/Outfall project.					
Disaster Debris Management Plan	Yes (Draft)	State/Federal	No	No	2021- WILDWOOD-010
Comment:					
Floodplain or Watershed Plan	Yes (Draft)	Local	No	No	Yes
Comment:					
Stormwater Management Plan	Yes	State, Local	Yes	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.					
Stormwater Pollution Prevention Plan	Yes	State, Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	Yes	State & Local	No	Yes	Yes
Comment: <ul style="list-style-type: none">The Economic Development Plan is section 13 of the Master Plan.Beachfront Redevelopment Project, January 2019, Request for Qualifications And Proposals. The City of Wildwood, New Jersey (the "City") invited qualified developers or development teams (collectively, "Respondents") to respond to this Request for Qualification and Proposals ("RFQ/RFP") with conceptual development proposals and statements of their qualifications to develop a project on the "Beachfront Parking Lots."Back Bay Development AreaPacific Ave. Redevelopment Project in conjunction with the County of Cape May					
Shoreline Management Plan	Yes	State	Yes – if located in a coastal zone	No	No
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					
Community Forest Management Plan	No	-	No	-	-
Comment:					
Transportation Plan	Yes	Local	No	Yes	-
Comment:					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes-how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">The City’s Master Plan and Master Plan Reexamination includes a Circulation Element. The Element addresses various means of transportation, resiliency, and emergency evacuation plans and capabilities.					
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:					
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment: <ul style="list-style-type: none">					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Federal/State/Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19.City of Wildwood Emergency Operations Plan, Updated 2016					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
Comment: <ul style="list-style-type: none">The City’s Office of Emergency Management is planning on conducting a THIRA of certain critical facilities.					
Post-Disaster Recovery Plan	No	-	No	-	-
Comment:					
Continuity of Operations Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">City of Wildwood Emergency Operations Plan. Adopted 2008, Revised 2016 & 2020					
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					

Table 9.15-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Construction and Zoning Departments
Does your jurisdiction have the ability to track permits by hazard area?	Yes



Criterion	Response
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. The Tax Assessor has a list of buildable lots however it should be noted that Wildwood is nearly built out.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the City of Wildwood.

Table 9.15-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning & Zoning
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	Yes	Zoning
Economic Development Commission / Committee	Yes	Revenue and Finance & Redevelopment
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Office of Emergency Management
Maintenance program to reduce risk	Yes	Sewer Department & Public Works
Mutual aid agreements	Yes	Fire/EMS/Police. The Municipal Emergency Manager, with support from County OEM and New Jersey OEM, develop and implement MOU's with neighboring jurisdictions for resources during emergencies.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Contracted: Consulting Municipal Engineers (CME)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Contracted: Consulting Municipal Engineers (CME)
Planners or engineers with an understanding of natural hazards	Yes	Contracted: Consulting Municipal Engineers (CME)
Staff with training in benefit/cost analysis	Yes	Contracted: Consulting Municipal Engineers (CME), Triad Associates and Rutella Associates
Staff with training in green infrastructure	Yes	Contracted: Consulting Municipal Engineers (CME)
Staff with education/knowledge/training in low impact development	Yes	Contracted: Consulting Municipal Engineers (CME)
Surveyor	Yes	Contracted: Consulting Municipal Engineers (CME)
Stormwater engineer	Yes	Water Dept. Superintendent Mike McIntyre and CME Engineers
Personnel skilled or trained in GIS applications	Yes	Contracted: Consulting Municipal Engineers (CME)
Local or state water quality professional	Yes	Water and Sewer Dept.
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Daniel Dunn, City of Wildwood Emergency Management Coordinator
Watershed planner	Yes	Contracted: Consulting Municipal Engineers (CME)
Environmental specialist	No	-
Grant writers	Yes	Contracted: Triad Associates and Rutella Associates
Resilience Officer	No	-



Staff/Personnel Resource	Available?	Department/Agency/Position
Other	No	-

FISCAL CAPABILITY

The table below summarizes financial resources available to the City of Wildwood.

Table 9.15-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes—Revenue & Finance
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes—Water & Sewer
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

EDUCATION AND OUTREACH CAPABILITY

The table below summarizes the education and outreach resources available to the City of Wildwood.

Table 9.15-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, Lisa Fagan
Do you have personnel skilled or trained in website development?	Yes, Russ Simmons
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes, information related to the City's HMP
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes, on the City's social media pages including Facebook, Instagram, and Twitter.
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Wildwood has a varied outreach program. An informational letter explaining the city's flood risk, encouraging people to protect themselves through flood insurance, and offering numerous city-provided flood services is sent annually to all residents. Flood protection information and informational pamphlets on a number of protection, mitigation, and insurance topics are also available. There are also occasional presentations and events on different topics, including emergency preparedness, natural floodplain functions, and resiliency. A dedicated Program for Public Information (PPI) for Wildwood would help promote the effectiveness of current outreach efforts and involve more stakeholders in those efforts.

COMMUNITY CLASSIFICATIONS

The table below summarizes the classifications for community programs available to the City of Wildwood.





Table 9.15-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	Class 5	5/15/2017
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3/3	2017
Public Protection (Fire ISO Protection Class)	Yes	Class 3	7/1/2015
Storm Ready Certification	Yes	Participating	September 2009
Firewise Community Classification	No	-	-
Sustainable Jersey	NP	-	-

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.15-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Moderate = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

The Watershed Management Plan has extensive modeling to determine the possible impacts of climate change upon the municipality. The administration is supportive of the development of plans that address this issue. Several projects completed related to climate change include raising roadways, increasing freeboard, and raising bulkheads.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.15-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Zoning Official and Construction Official
Who is your floodplain administrator? (name, department/position)	Steven Booy, CFM—Zoning Official
Are any certified floodplain managers on staff in your jurisdiction?	Yes, see above



Criterion	Response
What is the date that your flood damage prevention ordinance was last amended?	July 12, 2017, Ordinance #1087-17
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Yes, it exceeds the minimum requirements including increased regulatory standards.
When was the most recent Community Assistance Visit or Community Assistance Contact?	Wildwood's most recent Community Assistance Visit was January 21st, 2015.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	Yes, and the City is interested in improving our CRS Classification.
How many flood insurance policies are in force in your jurisdiction?*	1,603 policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	2,111 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$608,827 in payments
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Land Use Planning:** Consulting Municipal Engineers (CME) is Wildwood's contracted planner. Natural hazard risk reduction is considered as part of all regulatory and long-term planning. Wildwood has a Planning Board and Zoning Board of Adjustment. Those boards are responsible for administering the site plan, subdivision, and variance requirements of the Land Use and Development Ordinance. Stormwater management, soil & erosion control, and Environmental Impact Assessments are all reviewed as part of land use decision making. The Planning Board contributed to the development of the Master Plan and Land Use and Development Ordinance and is responsible for determining that future plans are in compliance with the approved Master Plan.
- **Stormwater Management:** Wildwood is an MS4 Regulated Community. The Wildwood Sewer Utility is responsible for maintenance and management of the stormwater sewer system. The Planning Board and Zoning Board of Adjustment perform reviews of stormwater impact from new development. The Stormwater Control Ordinance is Ordinance 666-06. The Stormwater Control Ordinance sets controls for post-construction peak runoff on "major development" to prevent overloading the existing stormwater drainage system.
- **Open Space:** The Open Space Plan is section 11 of the Master Plan. All of Wildwood's publicly owned beaches, which are areas of high natural hazard risk, are designated as open space, which in turn limits risks associated with development.
- **Technical Resources:** The City has contractor support for benefit cost analysis and grant application development. The Zoning Official is a Certified Floodplain Manager and receives continuing education



as part of that certification; however, staff would benefit from additional information on pre-disaster grant funding sources for mitigation projects.

- **Other Programs:** Regular maintenance of outfall lines on beach is required due to accretion of beach.
- **Administration:** The Floodplain Administrator, Construction Official, and City Engineers all have job descriptions that specifically include identifying and/or implementing efforts to reduce natural hazard risk. Staff participate in associations and organizations that support natural hazard risk reduction capabilities including the New Jersey Association for Floodplain Management, the Association of State Floodplain Managers, Building Officials and Code Administrators, and the South Jersey Electrical Inspectors Association.
- **Freeboard:** The City continues to enforce that all new construction, buildings substantially damaged, or substantially improved be elevated at least 2 feet above the Base Flood Elevation through Wildwood's Flood Damage Prevention Ordinance and construction ordinances.

9.15.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The City of Wildwood's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.15-11 provides details regarding municipal-specific loss and damages the City experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.15-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 23, 2016	Winter Storm Jonas	DR-4264	Coastal storm with major coastal flooding and high winds.	Flood damage to various public and private properties.
July 10, 2020	Tropical Storm Fay	No	Tropical Storm with moderate flooding and high winds.	Flooding of many City streets with damage to private property.
January 20, 2020-continuing	Covid-19 Pandemic	DR-4488, EM-3451	The coronavirus pandemic resulted in hospitalizations, death.	The City was impacted by required business and school closures and mask/social distancing requirements.
August 4, 2020	Tropical Storm Isiasis	Pending	Tropical Storm with high winds.	Wind damage to both public and private property. Force account labor and debris removal costs.

Source: NOAA NCEI 2020, FEMA 2020

9.15.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the City of Wildwood risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES





The table below summarizes the repetitive and severe repetitive flood losses in the City of Wildwood. (2018 Data)

- Number of repetitive loss (RL) properties: 23
- Number of severe repetitive loss (SRL) properties: 4
- Number of RL/SRL properties that have been mitigated: 4

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.15-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
WILDWOOD VOLUNTEER FIRE COMPANY #1	Fire Stations	X	X
WILDWOOD CITY FIRE COMPANY	Fire Stations	X	X
WILDWOOD - HOLLY BEACH	Fire Stations	X	X
Mocean Marina	Marinas	X	X
Lions Center	Senior Facility	X	X
WILDWOOD HIGH SCHOOL	Education	X	X
Spicer Ave Pump Station	Wastewater Treatment Facilities	X	X
WILDWOOD COAL GAS SITE	Superfund Sites	X	X
MOREY'S	Superfund Sites	X	X
Wildwood Police Department	Police Stations	X	X
WILDWOOD CONVENTION CENTER	Polling Places	X	X
Wildwood	Municipal Facilities	X	X
Morey's Pier's- Surfside Pier	Recreation	X	X
GLENWOOD AVE ELEMENTARY SCHOOL	Education	X	X
Wildwood Boardwalk	Recreation	X	X
Glenwood Elementary School	Education	X	X
Acme Food Market	Grocery/Food Processing	X	X
Atlantic City Electric Substation	Electric Facilities	X	X
Byrne Community Center	Shelters	X	X
Cape Regional Urgent Care	Health Services	X	X
Complete Care	Health Services	X	X
CVS Pharmacy	Health Services	X	X
Garfield Ave. Water Tower	Potable Water Facilities	X	X
George Redding Bridge	Bridge	X	X
Leaming Ave. Pumping Station	Wastewater Treatment Facilities	X	X
Pine Ave. Water Tower	Potable Water Facilities	X	X
Riggins Gas Station	Natural Gas Facility	X	X
Rio Grande Ave. Pumping Station	Wastewater Treatment Facilities	X	X
Rite Aid Pharmacy	Health Services	X	X
Sandman Towers	Health Services	X	X
Schooner Island Marina	Marinas	X	X
Wawa Gas Station	Natural Gas Facility	X	X
Wildwood Catholic Academy Early Education Center	Education	X	X
Wildwood City Bus Terminal	Bus Station	X	X
Wildwood Public Works	DPW	X	X
Wildwood Public Works Garages	DPW	X	X



Name	Type	Exposure	
		1% Event	0.2% Event
Wildwood Water Utility	Potable Water Facilities	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The City of Wildwood, in its entirety is located in the 1-Percent Annual Chance Flood Zone. That being the case, all properties are susceptible to flooding. Private property owners whose homes are located below the Base Flood Elevation are particularly at risk for flood damage.
- The majority of repetitive loss properties identified by FEMA are located on the west side of the city, which borders the bay side of the island. That area of the city, particularly the northern end, is more susceptible to tidal flooding during major coastal storms and northeasters. The western section of the island is bulkheaded, and the City's stormwater outfall lines drain into the bay. In the event of an extremely high tide water will rise to the point that it fully submerges the outfall lines leading to the bay and will begin to flow back through the stormwater drainage system. If the flooding is severe enough, water will eventually rise above the bulkheads.
- Aside from the facilities noted in the table above, Wildwood's Public Works facility is also located in the Special Flood Hazard Area, on the west side of the city. During flood events that facility can be hard to reach, causing difficulty to emergency personnel. Vehicles usually located at that facility must be moved to higher ground during severe flood events. That facility also lacks backup power. The City recently elevated the Public Works yard and facility and is planning to add a building that is above BFE.
- The road leading into Wildwood near the George Redding Bridge, Rio Grande Avenue, is a particularly low area. During severe flooding events that road and the George Redding Bridge are barricaded and closed by emergency personnel to protect life and property. The only access to the City of Wildwood during those events is from either Rt. 147/Spruce Avenue leading into North Wildwood (which is also susceptible to flooding) or from County Road 621/Ocean Drive through Wildwood Crest. Limited access to and from Wildwood during these times puts a greater strain on emergency services and complicates emergency evacuations when they are required.
- The Pacific Avenue commercial section of Wildwood also regularly experiences flooding. Years of accretion on the beach has lengthened the beach to the point where the outfall lines from the city's storm sewer system no longer reach the ocean. As a result, the end of the lines become blocked with sand. The storm sewer system then backs up and stormwater on Pacific Avenue doesn't adequately drain. Wildwood Public Works/Sewer Utility has a regular schedule for digging out the outfall lines, but the problem is ongoing.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the City of Wildwood that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the City of Wildwood has significant exposure. A map of the City of Wildwood hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING





This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the City of Wildwood. The City of Wildwood has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the City indicated the following:

- The City agreed with the calculated hazard rankings.

Table 9.15-13. City of Wildwood Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak (new)	Drought (new)	Flood	Hurricane
High	Medium	Medium	Medium	High	High

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Medium	Low

9.15.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.15-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CW-1a	Property Mitigation Support – Retrofit: Where appropriate, support retrofitting (e.g. elevation) of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	City (likely through NFIP Floodplain Administrator)	In Progress	Yes	2021-WILDWOOD-001



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CW-1b	Property Mitigation Support – Acquisition/Relocation: Where appropriate, support acquisition and/or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	City (likely through NFIP Floodplain Administrator)	In Progress	Yes	2021-WILDWOOD-001
CW-2	Continue to develop and improve existing floodplain management program so as to attain a higher CRS rating.	City	In Progress	Yes	2021-WILDWOOD-009
CW-3	Continue to support the implementation, monitoring, maintenance, and updating of this plan, as defined in Section 7.0	City (through mitigation planning point of contacts)	Ongoing Capability	No	
CW-4	Strive to maintain compliance with, and good-standing in the National Flood Insurance program.	Municipality (likely through NFIP Floodplain Administrator)	Ongoing Capability	No	
CW-5	Complete conversion of Emergency Operations Plan into ESF format.	Municipal Emergency Manager with support from County OEM and NJ OEM	Completed 2016	No	
CW-6	Develop and implement MOU's with neighboring jurisdictions for resources during emergencies.	Municipal Emergency Manager with support from County OEM and NJ OEM	Ongoing Capability	No	
CW-7	Continue to enhance automatic aid agreements with neighboring jurisdictions.	City	Ongoing Capability	No	
CW-8	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability	No	
CW-9	Replace remaining old bulkheads at street-ends (west side of the City).	City	Completed	No	
CW-10	Two Foot Freeboard: Continue to enforce that all new construction, buildings substantially damaged, or substantially improved be elevated at least 2 feet above the Base Flood Elevation through Wildwood's Flood Damage Prevention Ordinance and construction ordinances.	City	Ongoing Capability	No	



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CW-11	Elevate Route 47 from George Redding Bridge to Susquehanna Ave to mitigate flooding	State DOT	Completed	No	
CW-12	Continue regular replacement and maintenance of Tideflex check valves on all outfall lines on bayside of island.	City	Completed	No	
CW-13	Repair and/or replace the existing bulkhead / revetments on Grassy Sound Channel between the Beach Creek Restaurant and under the Boathouse Restaurant. Currently there is no bulkhead under the Boathouse Restaurant. Tidewaters crest the existing revetment and contribute to flooding at the intersection of Rio Grande Ave. – Susquehanna Ave.	City Engineering	No Progress	Yes	2021-WILDWOOD-003
CW-14	Replace the existing storm drainage system out-letting through Outfall #2, including Old Rio Grande Avenue to mitigate flooding at the Rio Grande Avenue – Susquehanna Avenue intersection. This new construction may include a watertight penetration of the bulkhead, new tide flex valve, new 18-inch diameter HDPE/DIP, new catch basins and manholes from the existing bulkhead to the most upstream manhole at Old Rio Grande Avenue (to the north).	City Engineering	No Progress	Yes	2021-WILDWOOD-002
CW-15	Continue replacement of existing catch basin curb boxes with J-ECO curb boxes throughout city.	City Engineering	Completed	No	
CW-16	Explore the benefit of installing additional storm water pump stations at certain locations that experience severe flooding.	City Engineering	Ongoing Capability	Yes	2021-WILDWOOD-012
CW-17	Relocate conflicting utilities at the intersection of Susquehanna Ave and Burk Ave install a new lateral connecting the catch basins with a positively sloped pipe, eliminating the loss of head.	City Engineering	No Progress	Yes	
CW-18	Replace catch basins and laterals, and install outfall pipe with 18-inch Tideflex valve at Mediterranean	City Engineering	No Progress	Yes	2021-WILDWOOD-014



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	Avenue – W. Taylor Avenue intersection Outfall #4 to mitigate flooding. Outfall #4 has an invert below the ground level thus impeding the outlet of storm runoff.				
CW-19	Repair, restructure and reinforce the existing revetment on north side of Mediterranean Avenue at W. Taylor Avenue to mitigate flooding.	City Engineering	No Progress	Yes	2021-WILDWOOD-013
CW-20	From the July 2003 Storm Sewer Outfall Redesign: Re-engineer the existing outfall system to eliminate the existing ineffective (below-grade) functionally obsolete outfalls to mitigate flooding, health and safety hazards, beach closings and losses to the local economy. One proposed solution is to consolidate the storm water collection system into a detention basin which will then pump the storm water system through a single outfall line extending into the ocean.	City	In Progress	Yes	2021-WILDWOOD-012
CW-21	Repair, restructure and reinforce the earthen berm where there is a breach at the W. Taylor Ave intersection.	City Engineering	No Progress	Yes	2021-WILDWOOD-013
CW-22	Replace the existing, deteriorated bulkhead at Block 249.01, Lot 1 which is severely deteriorated and compromised. These repairs must conform with the current Bulkhead Ordinance.	City Engineering	Completed	No	
CW-23	Explore the concept of “Sheltering In-Place” in vertical development as a viable option to traditional evacuation.	City	Completed, not likely to use as a viable option for evacuation	No	
CW-24	Explore the viability of constructing bulkheads at the street-ends of Oak and Wildwood Avenues to replace the rip-rap armored banks.	Engineering	Completed	No	
CW-25	Explore and possibly establish a Program for Public Information (PPI) with neighboring municipalities to enhance floodplain management outreach efforts	Emergency Management; support from New Jersey Coastal Coalition	In Progress	Yes	



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
CW-26	Wildwood's Public Works facility Mitigation: Install backup power and investigate/identify and implement appropriate and cost-effective mitigation action(s) to address facility accessibility issues during flood events. Wildwood's Public Works facility is located in the Special Flood Hazard Area, on the west side of the city. During flood events that facility can be hard to reach, causing difficulty to emergency personnel. Vehicles usually located at that facility must be moved to higher ground during severe flood events. That facility also lacks backup power.	Public Works, Administration	In Progress; The City has raised the grade level of Wildwood Public Works Yard above BFE. A new building needs to be constructed at the yard to replace a flood damaged building at another site.	Yes	2021-WILDWOOD-001
CW-27	Pacific Avenue Mitigation: Investigate/identify and implement appropriate and cost-effective mitigation action(s) to address localized flooding along the commercial section of Pacific Avenue in Wildwood.	Public Works, Administration	In Progress	Yes	2021-WILDWOOD-002

In addition to the above progress, the City of Wildwood identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- Repaired the roadway in the 400 E. block of Magnolia Ave. to prevent ongoing flooding issues.
- Boardwalk ramp reconstruction at several streets.
- Constructed a new Water Department facility at Schellenger and Park Blvd. that is above BFE, replacing former facility at Pine and New Jersey Ave. that was below BFE and flooded previously.
- The Rio Grande Ave. Gateway Project is almost complete. This resulted in Rio Grande Ave. being raised as well as the installation of a flood pump at Rio Grande and Susquehanna Ave. Hopefully, this alleviates some of the repetitive flooding issues of Rio Grande Ave. and the closing of the George Redding Bridge.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The City of Wildwood participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The City of Wildwood participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards*



(January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.15-15 summarizes the comprehensive-range of specific mitigation initiatives the City of Wildwood would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.15-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.15-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-WILDWOOD-001 (former CW-1a and CW-1b)	Repetitive Loss Mitigation	<p>Problem: The City has 23 remaining unmitigated repetitive loss properties and 4 severe repetitive loss properties. The northwest portion of the City for Pine Ave. to 26th Ave. west of Park Blvd. is the area with the majority of RL and SRL properties.</p> <p>Solution: The City will conduct outreach to RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$4M	Within 5 years	High	SIP	PP
2021-WILDWOOD-002	Floodprone Areas Mitigation	<p>Problem: Floodprone areas in the City include 500 W. Rio Grande Ave. near the Silver Bullet dock and all along near Beach Creek, Boathouse, and Uries restaurants.</p> <p>Solution: The City will elevate bulkheads and parking lots in floodprone areas. In areas where private ownership exists, the City will encourage property owners to install or raise their bulkheads.</p>	Existing	Flood, Severe Weather, Coastal Erosion	1	Engineer, Public Works	HMGP, BRIC, City budget	Reduction in flood risk	High	Within 5 years	High	SIP	SP, PP
2021-WILDWOOD-003	City Bulkhead Retrofit and Replacement	<p>Problem: Westside bayfront and waterfront bulkheads throughout the City do not have standard elevation and require either elevation or complete reconstruction to provide proper protection.</p> <p>Solution: Vinyl bulkhead with concrete caps will be constructed at the following locations along Otten's Harbor:</p> <ul style="list-style-type: none"> Susquehanna Avenue, south side of Otten's Harbor, 50 lf. 	Existing	Flood, Coastal Erosion	1	Engineer, Public Works	HMGP, BRIC, City budget	Reduction in coastal flood risk	High	Within 5 years	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		<ul style="list-style-type: none"> Susquehanna Avenue, north side of Otten's Harbor, 50 lf. Hudson Avenue, south side of Otten's Harbor, 55 lf. Hudson Avenue, north side of Otten's Harbor, 50 lf. <p>The existing bulkheads in these areas are failing and are being the City required 8 feet NAVD88 elevation. In addition, drainage improvements at Susquehanna Avenue on the north side of Otten's Harbor will be completed. Concrete cap, footing, and fill for existing bulkheads at Mediterranean Avenue, 55 lf. (north side of Otten's Harbor); Niagara Avenue, 50 lf. (north side of Otten's Harbor); and Montgomery Street (west), 65 lf.</p>											
2021-WILDWOOD-004	Public Works Flood Protection	<p>Problem: One of the City's Public Works buildings has been damaged by flooding and needs to be rebuilt.</p> <p>Solution: A new building will be constructed above the BFE at the Public Works facility which has had the grade of the yard raised recently above BFE.</p>	Existing	Flood	1, 3	Engineer, Public Works	City budget	Reduction in flood risk	High	Within 2 years	High	SIP	PP
2021-WILDWOOD-005	Roadway Elevations	<p>Problem: Park Blvd. as well as many of the City's west side streets and roadways need to be elevated.</p> <p>Solution: The City will elevate and regrade Park Blvd and the City's west side streets. This will include upgrades to curbing as necessary.</p>	Existing	Severe Weather, Flood	1	Engineer, Public Works	HMGP, BRIC, City budget	Reduction in flood risk	High	Within 5 years	High	SIP	PP, SP
2021-WILDWOOD-006	Engineered Dune	<p>Problem: The City lacks an engineered dune system to protect from storm surge and coastal erosion.</p> <p>Solution: The City will work with the USACE to complete construction of an engineered dune on the oceanfront. Sand will be borrowed from the beach in order to build the dune. The City will be responsible for maintenance of the dune and will monitor the beach face for any</p>	N/A	Flood, Coastal Erosion, Hurricane, Nor'Easter, Climate Change and Sea Level Rise	3, 5	USACE	USACE, City budget	Protection of the City from storm surge and erosion events.	High	Within 5 years	High	NSP	NR



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		negative coastal erosion impacts that may require modifications.											
2021-WILDWOOD-007	Backup Power for Critical Facilities	Problem: Backup power sources are necessary to maintain critical services for critical facilities. Wildwood High School, Glenwood Ave. Elementary School, and the City of Wildwood Public Works Facility lack backup power. Solution: The Engineer will research what size generators are needed to power the Wildwood High School, Glenwood Ave. Elementary School, and the City of Wildwood Public Works Facility. The City will then purchase and install the selected generators and necessary electrical components to supply backup power to the selected facilities.	Existing	All Hazards	1, 3	Engineer, Facility managers	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of critical facilities	\$50,000 per generator	Within 5 years	High	SIP	ES
2021-WILDWOOD-008	Bulkhead Ordinance	Problem: The City lacks a bulkhead height requirement. This leads to a variety of different heights in the bulkhead as many bulkheads are privately owned, leading to inconsistent levels of protection. Solution: The City will develop and adopt a bulkhead ordinance which requires a standard elevation.	Existing	Coastal Erosion, Flood	1	Administration	City budget	Standard level of protection	Staff time	Within 2 years	High	LPR	PR, SP
2021-WILDWOOD-009	Watershed Management Plan	Problem: The City is in the process of developing a watershed master plan for the CRS program which will include a detailed analysis of NOAA predicted sea level rise for 2100. Solution: The City will complete and adopt the Watershed Management Plan.	New and Existing	Flood, Severe Weather, Coastal Erosion	1, 3	Administration	City budget	Increased floodplain management	Staff time for adoption	Within 2 years	High	LPR	PR
2021-WILDWOOD-010	Adopt Debris Management Plan	Problem: The City's Disaster Debris Management Plan is in draft form Solution: The City will complete and adopt the plan.	N/A	All Hazards	4, 6	Administration	City budget	Plan in place for disaster response	Staff time	Within 6 months	High	LPR	ES
2021-WILDWOOD-011	Pacific Avenue Drainage Project	Problem: Pacific Avenue requires drainage improvements. Solution: The City will conduct drainage and stormwater improvements on Pacific Avenue.	Existing	Flood, Severe Weather	1	Engineer, Public Works	HMGP, BRIC, City budget	Reduction in flood risk	High	Within 5 years	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-WILDWOOD-012	Leaming Avenue Pump Station and Outfall Project	Problem: Leaming Avenue requires a stormwater pump and new outfall pipes. Solution: The City will install a pump station and remove and replace outfall pipes. Funding is in place for the pump station through the NJ Risk reduction resiliency grant. Funding is needed for the removal of old outfall pipes.	Existing	Flood, Severe Weather	1	Engineer, Public Works	NJ Risk reduction resiliency grant, HMGP, BRIC, City budget	Reduction in flood risk	High	Within 5 years	High	SIP	SP
2021-WILDWOOD-013	Living Shoreline Along Mediterranean Avenue and W Andrews Avenue	Problem: Mediterranean Avenue and W Andrews Avenue are experiencing erosion. Solution: A living shoreline will be constructed along Mediterranean Avenue and W Andrews Avenue to protect the nearby neighborhood. The proposal is to construct the living shoreline with a gabion core and bio logs, berms, and native plantings and will stretch 1,100 lf.	Existing	Coastal Erosion	3, 5	Administration	HMGP, BRIC, City budget, environmental grants	Reduction in coastal erosion	High	Within 5 years	High	NSP	NR
2021-WILDWOOD-014	W Youngs Avenue Drainage Pipe	Problem: A drainage pipe that drains W Youngs Avenue is crushed and needs to be replaced. The pipe traverses the W Youngs Avenue right of way and Susquehanna Avenue right of way. The lines provide flood management for Maxwell Field athletic complex and the neighborhood to the south of this complex. This is currently an 18 to 24-inch line. Solution: The pipe will be upgraded to a 30-inch line to provide adequate service. This system extends almost 1,700 lf. Check valves will be installed on either end of the system.	Existing	Flood, Severe Weather	1	Engineer, Public Works	HMGP, BRIC, City budget	Reduction in flood risk	\$50,000	Within 3 years	High	SIP	SP

Notes:

Acronyms and Abbreviations:

CAV Community Assistance Visit
 CRS Community Rating System
 DPW Department of Public Works
 FEMA Federal Emergency Management Agency
 FPA Floodplain Administrator
 HMA Hazard Mitigation Assistance

Potential FEMA HMA Funding Sources:

FMA Flood Mitigation Assistance Grant Program
 HMGP Hazard Mitigation Grant Program
 BRIC Building Resilient Infrastructure and Communities

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:





N/A Not applicable
NFIP National Flood Insurance Program
OEM Office of Emergency Management

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:


- *Local Plans and Regulations (LPR)* – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- *Structure and Infrastructure Project (SIP)* - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- *Natural Systems Protection (NSP)* – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- *Education and Awareness Programs (EAP)* – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.15-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-WILDWOOD-001 (former CW-1a and CW-1b)	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High 
2021-WILDWOOD-002	Floodprone Areas Mitigation	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-WILDWOOD-003	City Bulkhead Retrofit and Replacement	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2021-WILDWOOD-004	Public Works Flood Protection	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-WILDWOOD-005	Roadway Elevations	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2021-WILDWOOD-006	Engineered Dune	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High
2021-WILDWOOD-007	Backup Power for Critical Facilities	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-WILDWOOD-008	Bulkhead Ordinance	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-WILDWOOD-009	Watershed Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-WILDWOOD-010	Adopt Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-WILDWOOD-011	Pacific Avenue Drainage Project	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High



Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-WILDWOOD-012	Leaming Aveue Pump Station and Outfall Project	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
2021-WILDWOOD-013	Living Shoreline Along Mediterranean Avenue and W Andrews Avenue	0	1	1	1	1	0	0	1	1	1	0	0	1	1	9	High
2021-WILDWOOD-014	W Youngs Avenue Drainage Pipe	1	1	0	1	1	1	0	1	0	0	1	0	1	1	9	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.
Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.15-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise				X	X			X
Coastal Erosion	X			X	X	X	X	X
Disease Outbreak (new)					X			X
Drought (new)					X			X
Flood	X	X		X	X	X		X
Hurricane				X	X			X
Nor'Easter				X	X			X
Severe Weather	X	X			X	X		X
Severe Winter Weather					X			X
Tsunami					X			X
Wildfire					X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.15-1. City of Wildwood Hazard Area Extent and Location Map 1

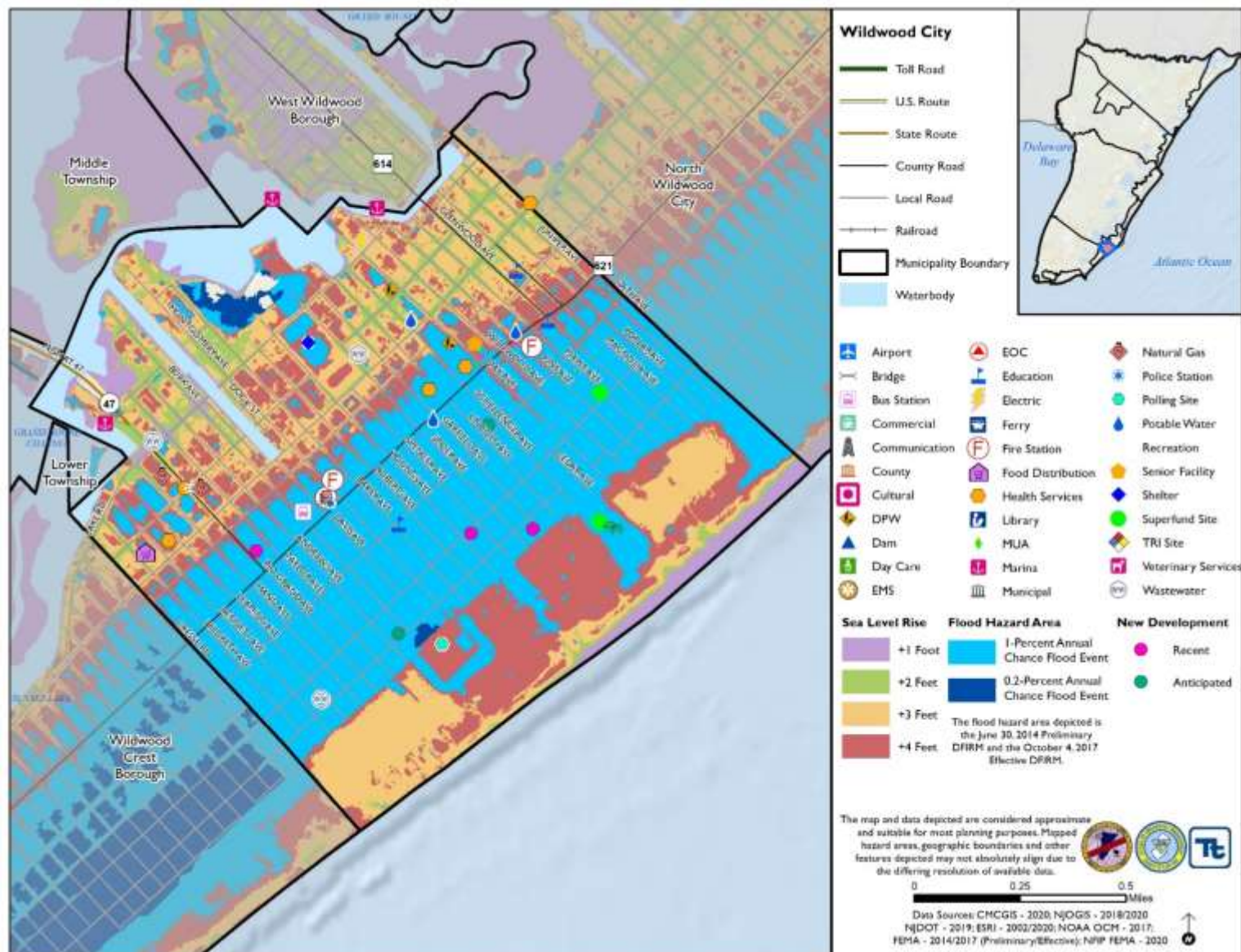




Figure 9.15-2. City of Wildwood Hazard Area Extent and Location Map 2

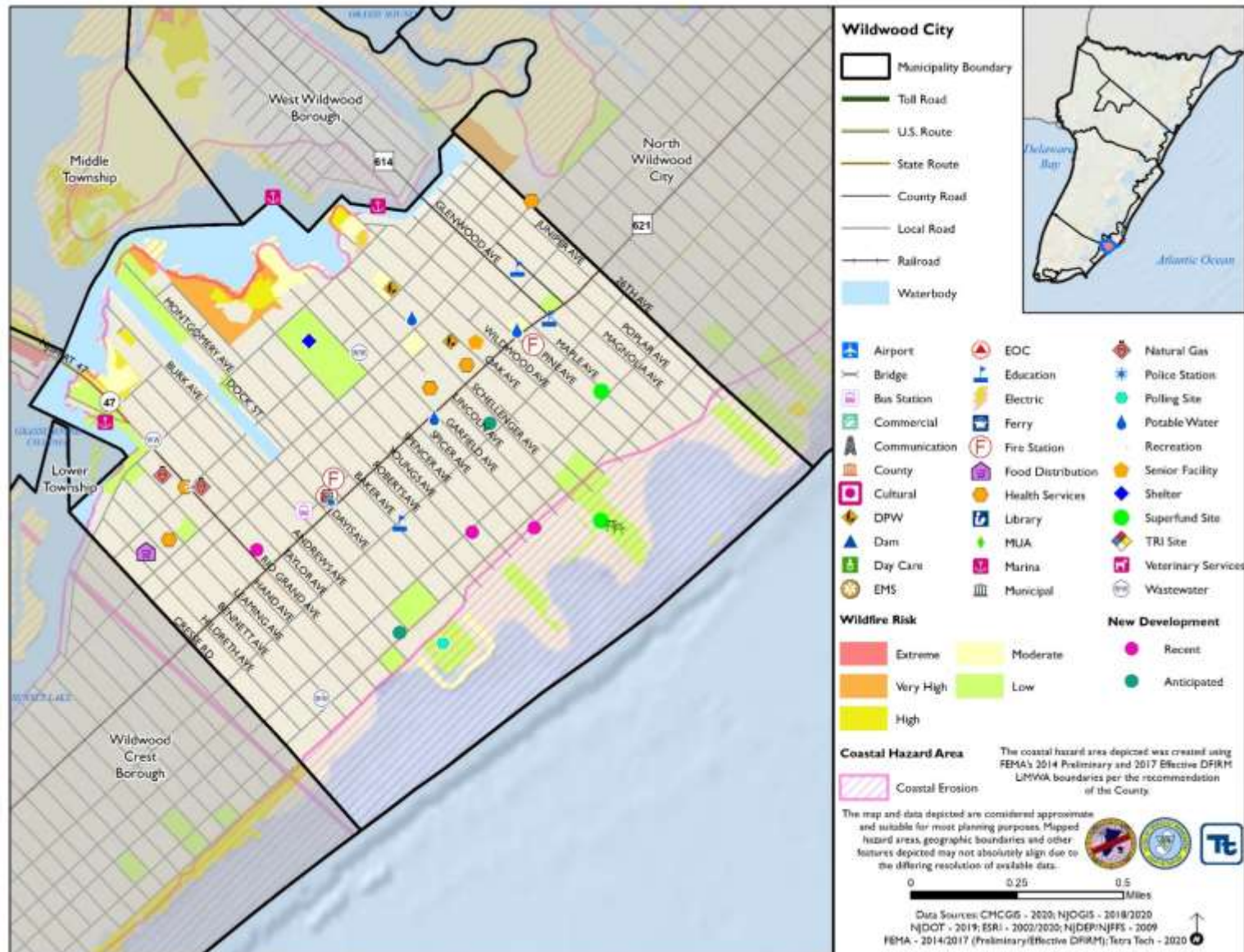
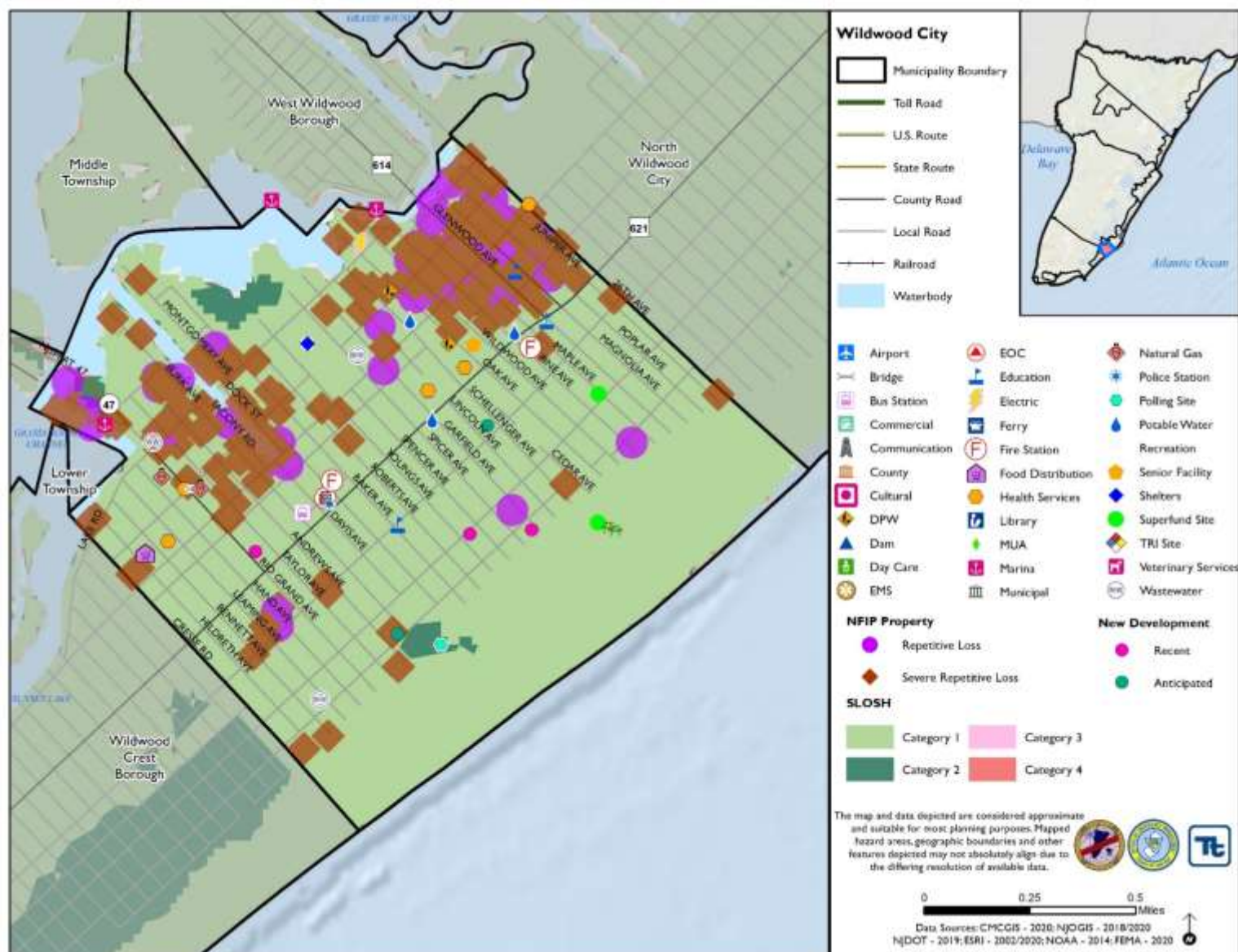




Figure 9.15-3. City of Wildwood Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-WILDWOOD -001 (former CW-1a and CW-1b)		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The City has 23 remaining unmitigated repetitive loss properties and 4 severe repetitive loss properties. The northwest portion of the City for Pine Ave. to 26th Ave. west of Park Blvd. is the area with the majority of RL and SRL properties.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will conduct outreach to the RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$4 M	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, BRIC, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-WILDWOOD -001 (former CW-1a and CW-1b)	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The City has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the City.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Floodprone Areas Mitigation		
Project Number:	2021-WILDWOOD -002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather, Coastal Erosion		
Description of the Problem:	Floodprone areas in the City include 500 W. Rio Grande Ave. near the Silver Bullet dock and all along near Beach Creek, Boathouse, and Uries restaurants.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will conduct a flood study to determine the appropriate level of protection for flooding. The City will then elevate bulkheads and parking lots in floodprone areas. In areas where private ownership exists, the City will encourage property owners to install or raise their bulkheads.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by flood study	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	30-50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Within 5 years	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Abandon floodprone areas	High	Costly and negative social/economic impacts
	Elevate all infrastructure and buildings	High	Costly and not legally possible for privately owned areas
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Floodprone Areas Mitigation	
Project Number:	2021-WILDWOOD -002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects lives from flood risk
Property Protection	1	Protects private property and public infrastructure from flood risk
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Some private property owners will need to take part in project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather, Coastal Erosion
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	City Bulkhead Retrofit and Replacement		
Project Number:	2021-WILDWOOD -003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Coastal Erosion		
Description of the Problem:	Westside bayfront and waterfront bulkheads throughout the City do not have standard elevation and require either elevation or complete reconstruction to provide proper protection.		
Action or Project Intended for Implementation			
Description of the Solution:	Vinyl bulkhead with concrete caps will be constructed at the following locations along Otten's Harbor: <ul style="list-style-type: none"> • Susquehanna Avenue, south side of Otten's Harbor, 50 lf. • Susquehanna Avenue, north side of Otten's Harbor, 50 lf. • Hudson Avenue, south side of Otten's Harbor, 55 lf. • Hudson Avenue, north side of Otten's Harbor, 50 lf. The existing bulkheads in these areas are failing and are being the City required 8 feet NAVD88 elevation. In addition, drainage improvements at Susquehanna Avenue on the north side of Otten's Harbor will be completed. Concrete cap, footing, and fill for existing bulkheads at Mediterranean Avenue, 55 lf. (north side of Otten's Harbor); Niagara Avenue, 50 lf. (north side of Otten's Harbor); and Montgomery Street (west), 65 lf.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	Elevation determined by survey	Estimated Benefits (losses avoided):	Reduction in coastal flood risk
Useful Life:	30-50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Within 5 years	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Abandon waterfront areas	High	Costly and negative social/economic impacts
	Elevate all infrastructure and buildings	High	Costly and not legally possible for privately owned areas
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	City Bulkhead Retrofit and Replacement	
Project Number:	2021-WILDWOOD -003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects lives from flood and coastal erosion risk
Property Protection	1	Protects private property and public infrastructure from and coastal flood risk
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	May require permitting
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Coastal Erosion
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Roadway Elevations		
Project Number:	2021-WILDWOOD-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Park Blvd. as well as many of the City's west side streets and roadways are prone to flooding due to being low-lying. When roadways are flooded it prohibits safe access by emergency vehicles in residential areas.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will elevate and regrade Park Blvd and the City's west side streets. This will include upgrades to curbing as necessary. The road-raising project will provide safe access for residents and emergency vehicles during and after Severe Weather events. The new roadway will decrease the amount of maintenance required along the roadway relative to buckled asphalt and debris-filled drainage structures.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	6" to 12" elevation and stormwater upgrades	Estimated Benefits (losses avoided):	Flood risk reduced.
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadways	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Roadway Elevations	
Project Number:	2021-WILDWOOD-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadway from flood damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The City has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
Timeline	1	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power for Critical Facilities		
Project Number:	2021-WILDWOOD-007		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. Wildwood High School, Glenwood Ave. Elementary School, and the City of Wildwood Public Works Facility lack backup power.		
Action or Project Intended for Implementation			
Description of the Solution:	The Engineer will research what size generators are needed to power the Wildwood High School, Glenwood Ave. Elementary School, and the City of Wildwood Public Works Facility. The City will then purchase and install the selected generators and necessary electrical components to supply backup power to the selected facilities.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of critical facilities
Useful Life:	20 years	Goals Met:	1, 3
Estimated Cost:	\$50,000 per generator	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Facility managers	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power for Critical Facilities	
Project Number:	2021-WILDWOOD-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of critical facilities
Property Protection	1	Project will protect buildings from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The City has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All Hazards
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Facility managers
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Pacific Avenue Drainage Project		
Project Number:	2021-WILDWOOD-011		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Pacific Avenue requires drainage improvements.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will conduct drainage and stormwater improvements on Pacific Avenue.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	TBD	Estimated Benefits (losses avoided):	Reduction in flooding
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, City budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Raise roadways in the area	\$250,000	Flooding likely to impact property owners
	Elevate homes in the area	\$3 million	Costly and roadways still flood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Pacific Avenue Drainage Project	
Project Number:	2021-WILDWOOD-011	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The City is legally able to complete the project
Fiscal	0	Project requires additional funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Leaming Aveue Pump Station and Outfall Project		
Project Number:	2021-WILDWOOD-012		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Leaming Avenue requires a stormwater pump and new outfall pipes to reduce flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	The City will install a pump station and remove and replace outfall pipes. Funding is in place for the pump station through the NJ Risk reduction resiliency grant. Funding is needed for the removal of old outfall pipes.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	TBD	Estimated Benefits (losses avoided):	Reduction in flooding
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	NJ Risk reduction resiliency grant, HMGP, BRIC, City budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Raise roadways in the area	\$250,000	Flooding likely to impact property owners
	Elevate homes in the area	\$3 million	Costly and roadways still flood
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Leaming Aveue Pump Station and Outfall Project	
Project Number:	2021-WILDWOOD-012	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The City is legally able to complete the project
Fiscal	0	NJ Risk reduction resiliency grant but project requires additional funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Living Shoreline Along Mediterranean Avenue and W Andrews Avenue		
Project Number:	2021-WILDWOOD-013		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Landslide		
Description of the Problem:	Mediterranean Avenue and W Andrews Avenue are experiencing erosion.		
Action or Project Intended for Implementation			
Description of the Solution:	A living shoreline will be constructed along Mediterranean Avenue and W Andrews Avenue to protect the nearby neighborhood. The proposal is to construct the living shoreline with a gabion core and bio logs, berms, and native plantings and will stretch 1,100 lf.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Coastal erosion risk reduced
Useful Life:	1 year	Goals Met:	3, 5
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, City budget, environmental grants
Responsible Organization:	Administration	Local Planning Mechanisms to be Used in Implementation if any:	None
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Retreat from areas near shoreline	High	Costly, unpopular
	Install bulkhead	High	Environmentally damaging, costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Living Shoreline Along Mediterranean Avenue and W Andrews Avenue	
Project Number:	2021-WILDWOOD-013	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties from erosion damage
Cost-Effectiveness	1	
Technical	1	Project is technically feasible
Political	1	
Legal	0	Permitting for the project is required from NJ DEP and USACE
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	0	Coastal Erosion
Timeline	0	
Agency Champion	1	Administration
Other Community Objectives	1	Restore natural floodplain function
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	W Youngs Avenue Drainage Pipe		
Project Number:	2021-WILDWOOD-014		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	A drainage pipe that drains W Youngs Avenue is crushed and needs to be replaced. The pipe traverses the W Youngs Avenue right of way and Susquehanna Avenue right of way. The lines provide flood management for Maxwell Field athletic complex and the neighborhood to the south of this complex. This is currently an 18 to 24-inch line.		
Action or Project Intended for Implementation			
Description of the Solution:	The pipe will be upgraded to a 30-inch line to provide adequate service. This system extends almost 1,700 lf. Check valves will be installed on either end of the system.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	30-inch line	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	30 years	Goals Met:	1
Estimated Cost:	\$50,000	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 3 years
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, municipal budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate roadway and homes impacted by flooding	\$millions	Costly and may not solve problem
	Relocate properties impacted by flooding	N/A	Not possible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	W Youngs Avenue Drainage Pipe	
Project Number:	2021-WILDWOOD-014	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects life from flooding.
Property Protection	1	Protects roadway and property from flood damage
Cost-Effectiveness	0	
Technical	1	Technically feasible project
Political	1	
Legal	1	The City has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would reduce flooding impacts
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	Within 3 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



9.16 BOROUGH OF WILDWOOD CREST

This section presents the jurisdictional annex for the Borough of Wildwood Crest. The annex includes a general overview of the Borough of Wildwood Crest; an assessment of the Borough of Wildwood Crest's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.16.1 Staff and Local Stakeholder Involvement in Annex Development

The Borough of Wildwood Crest followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.16-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: Ron Harwood, Office of Emergency Management Address: 6101 Pacific Avenue, Wildwood Crest, NJ 08212 Phone Number: (609) 729-8098 Email: rharwood@wildwoodcrest.org		Name / Title: Constance Mahon, Business Administrator Address: 6101 Pacific Avenue, Wildwood Crest, NJ 08212 Phone Number: (609) 729-8041 Email: cmahon@wildwoodcrest.org
NFIP Floodplain Administrator		
Name / Title: Patrick Malia, Floodplain Manager Address: 6101 Pacific Avenue Wildwood Crest, NJ 08260 Phone Number: (609) 729-8090 Email: pmalia@wildwoodcrest.org		
Name	Title	Method of Participation
Ron Harwood	Office of Emergency Management	Primary point of contact, provided information and data, contributed to the mitigation strategy, took stakeholder survey, reviewed and signed off on annex
Constance Mahon	Business Administrator	Alternate point of contact
Patrick Malia	Floodplain Manager	NFIP floodplain administrator, reviewed and signed off on annex
Marc Deblasio, PE, PP, CME	Engineer	Provided information and data, contributed to the mitigation strategy
Don Cabrera	Mayor	Reviewed and signed off on annex
Francine B Springer	Fiscal/CFO	Reviewed and signed off on annex

9.16.2 Jurisdiction Profile

The Borough of Wildwood Crest is located on a barrier island along the Atlantic Ocean coastline of Cape May County, New Jersey. It is bounded on the north-northeast by the Township of Lower and City of Wildwood, on the east-southeast by the Atlantic Ocean, on the south-southwest by the Township of Lower and the Atlantic Ocean, and the west by the Township of Lower. It is part of the Ocean City Metropolitan Statistical Area.



The Borough of Wildwood Crest and its neighboring communities of the City of Wildwood, City of North Wildwood, and the Borough of West Wildwood make up "The Wildwoods" resort, a popular vacation destination for those living in all parts of New Jersey as well as within the New York City and Philadelphia, Pennsylvania metropolitan areas.

According to the U.S. Census, the 2010 population for the Borough of Wildwood Crest was 3,270. The estimated 2018 population was 3,131, a 4.3 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 1.9 percent of the population is 5 years of age or younger and 36.2 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.16.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.16-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.16-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.16-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	1	1	1	1	1	0	4	0	5	0
Multi-Family	0	0	0	0	0	0	0	0	2	0
Other (commercial, mixed-use, etc.)	0	0	0	0	0	0	0	0	0	0
Property or Development Name	Type of Development	# of Units / Structures			Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
None identified										
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
None anticipated										

* Only location-specific hazard zones or vulnerabilities identified.

9.16.4 Capability Assessment

The Borough of Wildwood Crest performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.



- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.16.4). The Borough of Wildwood Crest identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.16-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Construction, Chapter 22, adopted by the Board of Commissioners as amended through 12-28-15. There is hereby established in the Borough of Wildwood Crest a State Uniform Construction Code enforcing agency to be known as the "Department of Inspections" consisting of a Construction Official, Building Subcode Official and Fire Subcode Official, Plumbing Subcode Official, Electrical Subcode Official, and such other subcode officials for such additional subcodes. The Construction Official shall be the chief administrator of the enforcing agency.The Ordinance contains no specific mitigation actions other than those required in the Uniform Construction Code.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Land Development Ordinance, Chapter 85, adopted by the Board of Commissioners. This is a comprehensive ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population; dividing the Borough of Wildwood Crest into districts for such purposes; adopting a map of said Borough showing boundaries and the classification of such districts; establishing rules, regulations and standards governing the subdivision and development of land within the Borough.The Ordinance is adopted pursuant to N.J.S.A. 40:55D-1 et seq., in order to promote and protect the public health, safety, comfort, convenience, prosperity, morals, and general welfare, and in the furtherance of the purposes of the Municipal Land Use Law.Article XV of this section includes detailed design standards for critical areas, flood zones, drainage and stormwater.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.Land Development Ordinance, Chapter 85, adopted by the Board of Commissioners. This is a comprehensive ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population; dividing the Borough of Wildwood Crest into districts for such purposes; adopting a map of said Borough showing boundaries and the classification of such districts; establishing rules, regulations and standards governing the subdivision and development of land within the Borough.Article XV of this section includes detailed design standards for the review and approval of Subdivisions relative to critical areas, flood zones, drainage and stormwater.					
Stormwater Management	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8,Stormwater Control, Chapter 66, , adopted by the Board of Commissioners as amended through 12-28-15. It is the purpose of this ordinance to establish minimum stormwater management requirements and controls for "major development,".Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated quantity or amount of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.To the maximum extent practicable, the standards in this Section shall be met by incorporating the nonstructural stormwater management strategies set forth into the design. The applicant shall identify the nonstructural measures incorporated into the design of the project.					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
Comment: <ul style="list-style-type: none">N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.Section 36.3 of the Borough's Flood Hazard Areas Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard.					
Growth Management	Yes	Local	Yes – if municipality has a Planning Board	No	-
Comment: <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Site Plan Review	Yes	County & Local	Yes – if municipality has a	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
			Planning Board		
Comment: <ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. Land Development Ordinance, Chapter 85, adopted by the Board of Commissioners. This is a comprehensive ordinance regulating and limiting the uses 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 and other open spaces; regulating and restricting the density of population; dividing the Borough of Wildwood Crest into districts for such purposes; adopting a map of said Borough showing boundaries and the classification of such districts; establishing rules, regulations and standards governing the subdivision and development of land within the Borough. Article XV of this section includes detailed design standards for the review and approval of Site Plans relative to critical areas, flood zones, drainage and stormwater. 					
Environmental Protection	No	-	No	-	-
Comment:					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. Flood Hazard Areas, Chapter 36, adopted by the Board of Commissioners on 11-25-13 and amended through 12-28-15. The flood hazard areas of the Borough of Wildwood Crest are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, causes damage in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss. It is the purpose of this ordinance to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by: <ul style="list-style-type: none"> Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities; Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction; Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; Controlling filling, grading, dredging, and other development which may increase flood damage; and, Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. New construction and substantial improvement of any residential structure located in an A or AE Zone shall have the lowest floor, including basement together with the attendant utilities (including all electrical, heating, ventilating, air-conditioning and other service equipment) and sanitary facilities, elevated at or above the base flood elevation or as required by ASCE/SEI 24-14, Table 2-1, or the best available flood hazard data elevation, whichever is more restrictive, plus two (2) feet; all new construction and substantial improvement of any commercial, industrial or other nonresidential structure located in an A or AE Zone shall be elevated to or above the base flood elevation or as required by ASCE/SEI 24-14, Table 2-1 or the best available flood hazard data elevation, whichever is more restrictive, plus two (2) feet. 					



Section 9.16 - Borough of Wildwood Crest

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Wellhead Protection	No	-	No	-	-
<i>Comment:</i>					
Emergency Management	No	-	No	-	-
<i>Comment:</i>					
Climate Change	No	-	No	-	-
<i>Comment:</i>					
Disaster Recovery Ordinance	No	-	No	-	-
<i>Comment:</i>					
Disaster Reconstruction Ordinance	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. 					
Capital Improvement Plan	Yes	Local	No	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> Capital Budget and Capital Improvement Program 2020, adopted by the Board of Commissioners on March 25, 2020. It is a 3-year Capital Plan with funding in the current year for projects such as, Emergency Sanitary and Storm Sewer Replacement, Fire Department Equipment, Purchase of Vehicles and Heavy Eq, Improvements to Roads, Improv. to Public Build and Property; and Acquisition of Property. 					
Disaster Debris Management Plan	No	-	No	-	2021-Wildwood Crest-004
<i>Comment:</i>					
Floodplain or Watershed Plan	No	-	No	-	-
<i>Comment:</i>					
Stormwater Management Plan	Yes	State & Local	Yes	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary 					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.</p> <ul style="list-style-type: none">Flood Mitigation and Storm Sewer Master Plan, dated March 2019. The Borough of Wildwood Crest has been historically subject to flooding, beach erosion and many other associated problems that require an aggressive approach to successfully manage infrastructure maintenance and flood damage mitigation. The Borough will continue to pursue and improve upon methods to educate its residents, protect its coastline, manage its infrastructure and natural areas, and mitigate the efforts from flood damage and natural disasters. This Flood Mitigation and Storm Sewer Master Plan (FMSSMP) demonstrates the Borough's continued commitment to these goals. This FMSSMP was developed for the purpose of:<ul style="list-style-type: none">Educating the Borough, public and private property owners of the existing flooding challenges facing the Borough;Establishing recommendations to mitigate the adverse impact of flooding and other coastal hazards that affect the Borough.Providing flood mitigation infrastructure options to guide the Borough when considering capital improvements;Complying with the Federal Emergency Management Agency (FEMA) Community Rating System (CRS) Program with the potential of enhancing that status.Participate and coordinate flood mitigation efforts with Federal, State, County and local entities.					
Stormwater Pollution Prevention Plan	Yes	Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.The Borough's Stormwater Pollution Prevention Plan is administered by Code Enforcement.					
Urban Water Management Plan	No	-	No	-	-
<p>Comment:</p>					
Habitat Conservation Plan	No	-	No	-	-
<p>Comment:</p>					
Economic Development Plan	No	-	No	-	-
<p>Comment:</p>					
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-	-
<p>Comment:</p> <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq.					
Community Wildfire Protection Plan	No	-	No	-	-
<p>Comment:</p>					
Community Forest Management Plan	No	-	No	-	-
<p>Comment:</p>					
Transportation Plan	No	-	No	-	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<i>Comment:</i>					
Agriculture Plan	No	-	No	-	-
<i>Comment:</i>					
Climate Action Plan	No	-	No	-	-
<i>Comment:</i>					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other	Yes	County & Local	No	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> Sanitary Sewer Master Plan, dated June 2018. This Borough of Wildwood Crest's <u>Sanitary Sewer Master Plan</u> has been developed to provide a guidance document for both the short and long-term maintenance and improvement of the Borough's existing sanitary sewer system. Additionally, a <u>Roadway Inventory/Evaluation</u> element has been added to this document to provide a more comprehensive view of the Borough's infrastructure and to aid in the planning and prioritization of future capital maintenance and improvement projects. The intent of this Sanitary Sewer Master Plan for the Borough of Wildwood Crest is to provide a document to prioritize future improvement projects, including the replacement of sanitary sewers and roadway reconstruction. Due to the ever-increasing costs of construction, the Borough must continue to make prudent decisions with regards to spending. The aim of this document is to aid in that endeavor. 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. The Borough's Plan is administered by OEM. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	-	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	No	-	No	-	-
<i>Comment:</i>					
Public Health Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					



Table 9.16-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Building Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No. The Borough is 97% built out.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

Table 9.16-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board, Dept. of Public Safety
Mitigation Planning Committee	Yes	PPI committee through CRS
Environmental Board / Commission	Yes	Environmental Commission - Dept. of Public Safety
Open Space Board / Committee	No	-
Economic Development Commission / Committee	Yes	Urban Enterprise Zone
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Department of Public Safety Nixle, Flood Warning Siren, Barriers, Flashing Flood Warning Signs
Maintenance program to reduce risk	Yes	Department of Public Works
Mutual aid agreements	Yes	Local and County
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planner and Engineer for particular boards
Engineers or professionals trained in building or infrastructure construction practices	Yes	City Engineer
Planners or engineers with an understanding of natural hazards	Yes	Planner and Engineer
Staff with training in benefit/cost analysis	Yes	Zoning Official
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	No	-
Stormwater engineer	Yes	Engineer; DeBlasio & Associates- Professional Services Contract
Personnel skilled or trained in GIS applications	Yes	Engineer
Local or state water quality professional	No	City of Wildwood provides water to island
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Emergency manager
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	No	-
Resilience Officer	No	-



Staff/Personnel Resource	Available?	Department/Agency/Position
Other	No	-

FISCAL CAPABILITY

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

Table 9.16-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes – ADA only
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes – Sewer Only
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.16-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, PIO Brian Cunniff
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	Yes, flood information and other emergency information is included on the website.
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	Yes; Facebook, Twitter, Youtube
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	Yes, Green Team
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	Yes; Flood Mitigation & Storm Sewer Master Plan (March 2019) is posted on the Borough website

COMMUNITY CLASSIFICATIONS

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

Table 9.16-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	Yes	Class 6	May 1, 2014
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	Class 3	May 2012
Public Protection (Fire ISO Protection Class)	Yes	Class 4	-



Program	Participating?	Classification	Date Classified
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	-

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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.16-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate

Notes:

Strong = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement;

Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.16-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Construction/Zoning
Who is your floodplain administrator? (name, department/position)	Patrick J. Malia, Construction Official/Zoning Official
Are any certified floodplain managers on staff in your jurisdiction?	Sal DeSimone
What is the date that your flood damage prevention ordinance was last amended?	December 28, 2015
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Yes, Class 6 in CRS Program
When was the most recent Community Assistance Visit or Community Assistance Contact?	The most recent Community Assistance Visit ended in May 2014.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	Yes, FIRMs are being remapped.



Criterion	Response
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	The Borough of Wildwood Crest is currently a Class 6 community in the Community Rating System (CRS) program.
How many flood insurance policies are in force in your jurisdiction?*	1,965 flood insurance policies
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	299 Claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	\$31,243 in payments
Do you maintain a list of properties that have been damaged by flooding?	Yes
Do you maintain a list of property owners interested in flood mitigation?	Yes

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Land Use Planning:** The Planning and Zoning boards are updated on a regular basis with respect to flood damage prevention and mitigation efforts. The Zoning Board of Adjustments is the appeal board for all Flood related code issues.
- **Technical Resources:** Substantial Damage Estimates are performed by the Construction Official and Municipal Engineer.
- The Borough, by partnering with the NFIP Floodplain Administrator, continue to strive to maintain compliance with, and good-standing in the National Flood Insurance program, specifically through the following activities:
 - Maintain participation in CRS program. Continue involvement in NJAFM and attending seminars and conferences.
 - Continue to enforce Building Codes, Zoning Codes and elevation requirements to mitigate possibility of flood damage.
- Local departments continue to support County-wide initiatives identified in Section 9.1 of the County Annex.

9.16.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of Wildwood Crest's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.16-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.



Table 9.16-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the County was impacted, the Borough did not receive damages.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The Borough was subject to masking and social distancing restrictions and business /school closures due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

9.16.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of Wildwood Crest risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of Wildwood Crest.

- Number of repetitive loss (RL) properties: 203
- Number of severe repetitive loss (SRL) properties: 75
- Number of RL/SRL properties that have been mitigated: 51

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.16-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
No Name	Communications Facility	X	X
No Name	Communications Facility		X
No Name	Communications Facility		X
No Name	Communications Facility		X
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
No Name	Communications Facility	X	X
WILDWOOD CREST FIRE COMPANY VOLUNTEER NO1	Fire Stations	X	X
Lake View Docks	Marinas	X	X
WILDWOOD CREST MEMORIAL	Education	X	X
Rosemary Ave Pump Station	Wastewater Treatment Facilities	X	X
"TOPEKA AVE PUMPING STATION	Wastewater Treatment Facilities	X	X
Wildwood Crest Police Department	Police Stations		X



Name	Type	Exposure	
		1% Event	0.2% Event
CREST PIER COMM CTR SOUTH SIDE	Polling Places		X
WILDWOOD CREST AMBULANCE CORPS	EMS	X	X
Wildwood Crest	Municipal Facilities		X
OCEAN PLACE CONDOS	Communications Facility		X
REGAL PLAZE MOTEL	Communications Facility	X	X
WILDWOOD CREST AMBULANCE	Communications Facility	X	X
WILDWOOD CREST BEACH PATROL	Communications Facility		X
WILDWOOD CREST BOURGH HALL	Communications Facility		X
WILDWOOD CREST PUPIC WORKS	Communications Facility	X	X
WILDWOOD CREST VOLUNTEER FIRE CO	Communications Facility	X	X

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- The majority of flooding occurs in the North West section of the Borough. This section of the Borough borders the bay and the principal damage occurs from Cresse Avenue south to Rambler Avenue. The tidal flooding frequently encompasses this area from the Park Boulevard corridor west to the street ends. In the event of a high water event, there are three areas of concern:
 - Tidal water may rise above the bay front outfall pipes which will cause a reverse flow of the storm drains.
 - Tidal water exceeding the capabilities of the street end barriers.
 - The outdated storm drains do not have the capability to evacuate the tidal water once the water levels have subsided.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Wildwood Crest that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Wildwood Crest has significant exposure. A map of the Borough of Wildwood Crest hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING

This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.



As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Wildwood Crest. The Borough of Wildwood Crest has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Borough indicated the following:

- The Borough agreed with the calculated hazard rankings.

Table 9.16-13. Borough of Wildwood Crest Hazard Ranking Input

Climate Change and Sea Level Rise		Coastal Erosion	Disease Outbreak	Drought	Flood
High		Medium	Medium	Medium	High
Hurricane	Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	High	Medium	Low

9.16.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.16-14. Status of Previous HMP Mitigation Actions

2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
BWC-1	Where appropriate, support retrofitting (e.g. elevation), purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Borough (through NFIP Floodplain Administrator)	In Progress	X	2021-Wildwood Crest-005
BWC-2	Continue to strive to maintain compliance with, and good-standing in the National Flood Insurance program, specifically through the following activities:	Borough (through NFIP Floodplain Administrator)	Ongoing Capability		



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	<ul style="list-style-type: none"> •Maintain participation in CRS program. Continue involvement in NJAFM and attending seminars and conferences. •Continue to enforce Building Codes, Zoning Codes and elevation requirements to mitigate possibility of flood damage. 				
BWC-3	Continue to support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	Ongoing Capability		
BWC-4	Upgrade stormwater drainage system along CR-621 and arterials in the Wildwoods (Wildwood Crest, Wildwood and North Wildwood). These are inadequate to even a 2-year storm. Activity in the Wildwoods has been on Jersey Avenue, Wildwood Avenue.	County Engineering with municipalities	In Progress. Increased drainage pipe is currently being installed from Rambler Road to Jefferson Avenue along CR 621 in the Crest. The Borough is expended \$3.8M on this drainage improvement project. We expect project completion in the spring of 2021.	X	2021-Wildwood Crest-006
BWC-5	Stormwater drainage improvement of the Borough's streets – Increase the size of stormwater outfalls to permit faster drainage and mitigate flooding.	Municipal Engineering and DPW	In Progress	X	2021-Wildwood Crest-001
BWC-6	Ocean Stormwater Outfall Mitigation: The Borough accretes sand, which has caused their outflow pipes to continually be buried/blocked. The entire downtown floods during heavy rains as a result. Ocean stormwater outfalls have been extended three times since 2001, and again need to be extended. This project has been submitted for grant funding, including FEMA mitigation grant funding, however no response on this application has been received by the Borough.	Borough with support from County	In Progress. The Borough has applied for a FEMA FY 2021 HMP grant for planning and design to mitigate flooding in the southern portion of town where this flooding is most prevalent. The US Army Corps project- Hereford Inlet to Cape May Inlet project has been planned and the Borough is awaiting word on when construction will commence. This project includes sand borrowing from the outfall areas to alleviate this issue. The project's start is likely 2022.	X	2021-Wildwood Crest-007
BWC-7	Sunset Lake bank stabilization (bayside) – ongoing project. Tile walls damaged during Sandy. PA and 406 ongoing. ~8-9	Borough with support from County	Complete		



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	blocks (project) not all damaged. The caps have been damaged.				
BWC-8	Dune construction along the beachfront – ongoing ACOE statewide dune project.	ACOE and NJDEP	Complete		
BWC-9	Replacement of bay-front street-end bulkheads. They replaced those that were damaged on the northern end of Borough – all cement now.	Borough with support from County	In Progress	X	2021-Wildwood Crest-003
BWC-10	Backup Power for Crest Memorial School. The Borough lacks a shelter. They Borough has received grant funding (~\$75k) for a backup generator, and they are currently sizing it so that they can operate necessary parts of the school as a shelter facility.	Borough and School Administration	No Progress	X	2021-Wildwood Crest-008

In addition to the above progress, the Borough of Wildwood Crest identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- None identified.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of Wildwood Crest participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough of Wildwood Crest participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.16-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Wildwood Crest would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1)



for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.16-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.16-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Wildwood Crest-001	Bayside Stormwater Pump Stations	Problem: Low lying areas along the bayfront experience flooding, restricting access to homes and businesses and lowering emergency response capabilities. Solution: The Borough will construct two stormwater pump stations to re-reroute bayside outfalls. The pump stations will be protected to the 500-year flood level and will have a backup power generator on site.	New	Flood, Severe Weather	1	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works	HMGP, BRIC, Borough budget	Alleviate flooding in roadways, homes and allow for access to businesses	\$10 million	3 years	High	SIP	SP
2021-Wildwood Crest-002	Bayside Outfall Tide Closure Valves	Problem: Tidal water floods roadways by entering bayside outfalls. This restricts access to homes and businesses and lowering emergency response capabilities. Solution: The Borough will install automated tide closure valves on bayside outfalls.	Existing	Flood, Severe Weather	1	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works	HMGP, BRIC, Borough budget	Alleviate flooding in roadways, homes and allow for access to businesses	\$2.5 Million	2 years	High	SIP	SP
2021-Wildwood Crest-003	Bulkhead Replacement	Problem: Borough bulkheads are in need of replacement and require a higher elevation to protect from higher flood levels. Failure of bulkheads could lead to subsidence issues and could cause large scale coastal erosion Solution: The Borough will replace or elevate existing Borough bulkheads in the right-of-way to elevation 8.00 in the NAVD88 datum.	Existing	Flood, Coastal Erosion	1	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works	HMGP, BRIC, Borough budget	Alleviate flooding in roadways, homes and allow for access to businesses	\$2 million	2 years	High	SIP	SP
2021-Wildwood Crest-004	Disaster Debris Management Plan	Problem: The Borough lacks a Disaster Debris Management Plan. Solution: The Borough will develop and adopt a Disaster Debris Management Plan.	N/A	All Hazards	4, 6	Administration	Borough budget	Plan put in place	Staff time	Within 1 year	High	LPR	ES
2021-Wildwood Crest-005	Repetitive Loss Properties	Problem: Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 203 repetitive loss properties and 75 severe repetitive loss properties but other properties may be impacted by flooding as well.	Existing	Flood, Severe Weather	1	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality	\$30 Million	3 years	High	SIP	PP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).						increasing flood storage.					
2021-Wildwood Crest-006	Drainage Pipe along CR 621	<p>Problem: An upgraded stormwater drainage system is needed along CR-621 and arterials in the Wildwoods (Wildwood Crest, Wildwood and North Wildwood). These are inadequate to even a 2-year storm.</p> <p>Solution: An enlarged drainage pipe is currently being installed from Rambler Road to Jefferson Avenue along CR 621 in the Crest with expected project completion in the spring of 2021.</p>	Existing	Flood, Severe Weather	1	Borough Engineer, County Engineering	HMGP, BRIC, Borough budget	Increase drainage and reduce flooding	\$3.8 Million	6 months	High	SIP	SP
2021-Wildwood Crest-007	Ocean Stormwater Outfall Mitigation	<p>Problem: The Borough accretes sand, which has caused their outflow pipes to continually be buried/blocked. The entire downtown floods during heavy rains as a result. Ocean stormwater outfalls have been extended three times since 2001, and again need to be extended.</p> <p>Solution: The Borough has applied for a FEMA FY 2021 HMP grant for planning and design to mitigate flooding in the southern portion of town where this flooding is most prevalent. The US Army Corps project- Hereford Inlet to Cape May Inlet project has been planned and the Borough is awaiting word on when construction will commence. This project includes sand borrowing from the outfall areas to alleviate this issue. The project's start is likely 2022.</p>	Existing	Coastal Erosion, Severe Weather, Flood	1	Borough Administration, USACE	USACE, HMGP, BRIC, Borough budget	Increase drainage and reduce flooding	High	Within 4 years	High	NSP, SIP	SP, NR



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Wildwood Crest-008	Backup Power for Crest Memorial School	Problem: The Borough lacks a shelter. They Borough has received grant funding (~\$75k) for a backup generator Solution: The Engineer will research what size generator is needed to power the Crest Memorial School so that it can operate necessary parts of the school as a shelter facility. OEM and the school district will then coordinate to install and maintain the generator.	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 3	Engineer, OEM, School district	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of School and use as a shelter	\$75,000	Within 2 years	High	SIP	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

CRS Category:

- 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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*



Table 9.16-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-Wildwood Crest-001	Bayside Stormwater Pump Stations	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High 
2021-Wildwood Crest-002	Bayside Outfall Tide Closure Valves	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High
2021-Wildwood Crest-003	Bulkhead Replacement	0	1	0	1	1	1	0	1	1	1	1	1	1	1	11	High
2021-Wildwood Crest-004	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-Wildwood Crest-005	Repetitive Loss Properties	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2021-Wildwood Crest-006	Drainage Pipe along CR 621	0	1	1	1	0	1	0	1	1	1	1	1	1	1	11	High
2021-Wildwood Crest-007	Ocean Stormwater Outfall Mitigation	0	1	1	1	0	0	0	1	1	1	1	1	1	1	10	High
2021-Wildwood Crest-008	Backup Power for Crest Memorial School	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.16-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise					X			X
Coastal Erosion				X	X	X		X
Disease Outbreak					X			X
Drought					X			X
Flood		X		X	X	X		X
Hurricane					X			X
Nor'Easter					X			X
Severe Weather		X		X	X	X		X
Severe Winter Weather					X			X
Tsunami					X			X
Wildfire					X			X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.16-1. Borough of Wildwood Crest Hazard Area Extent and Location Map 1

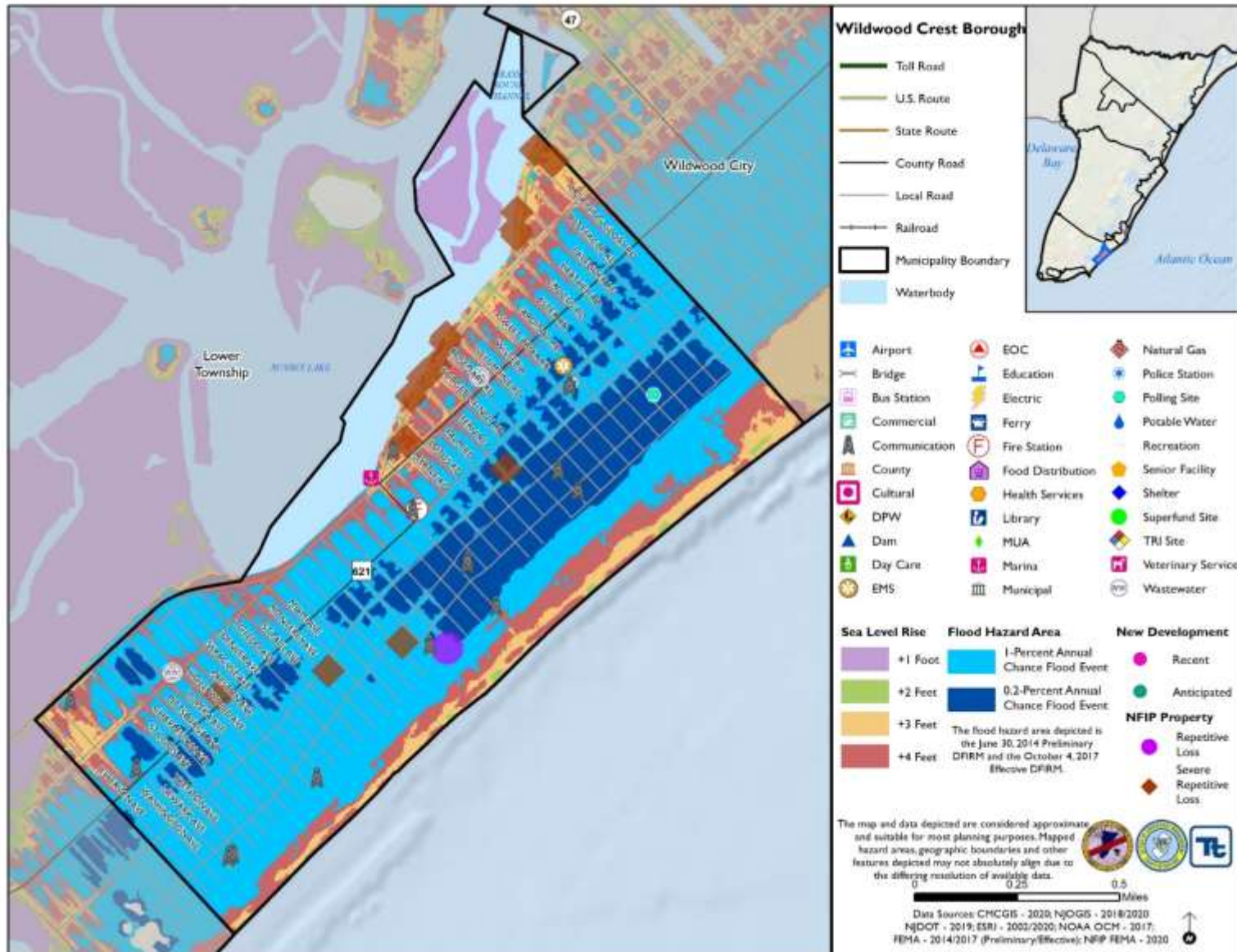




Figure 9.16-2. Borough of Wildwood Crest Hazard Area Extent and Location Map 2

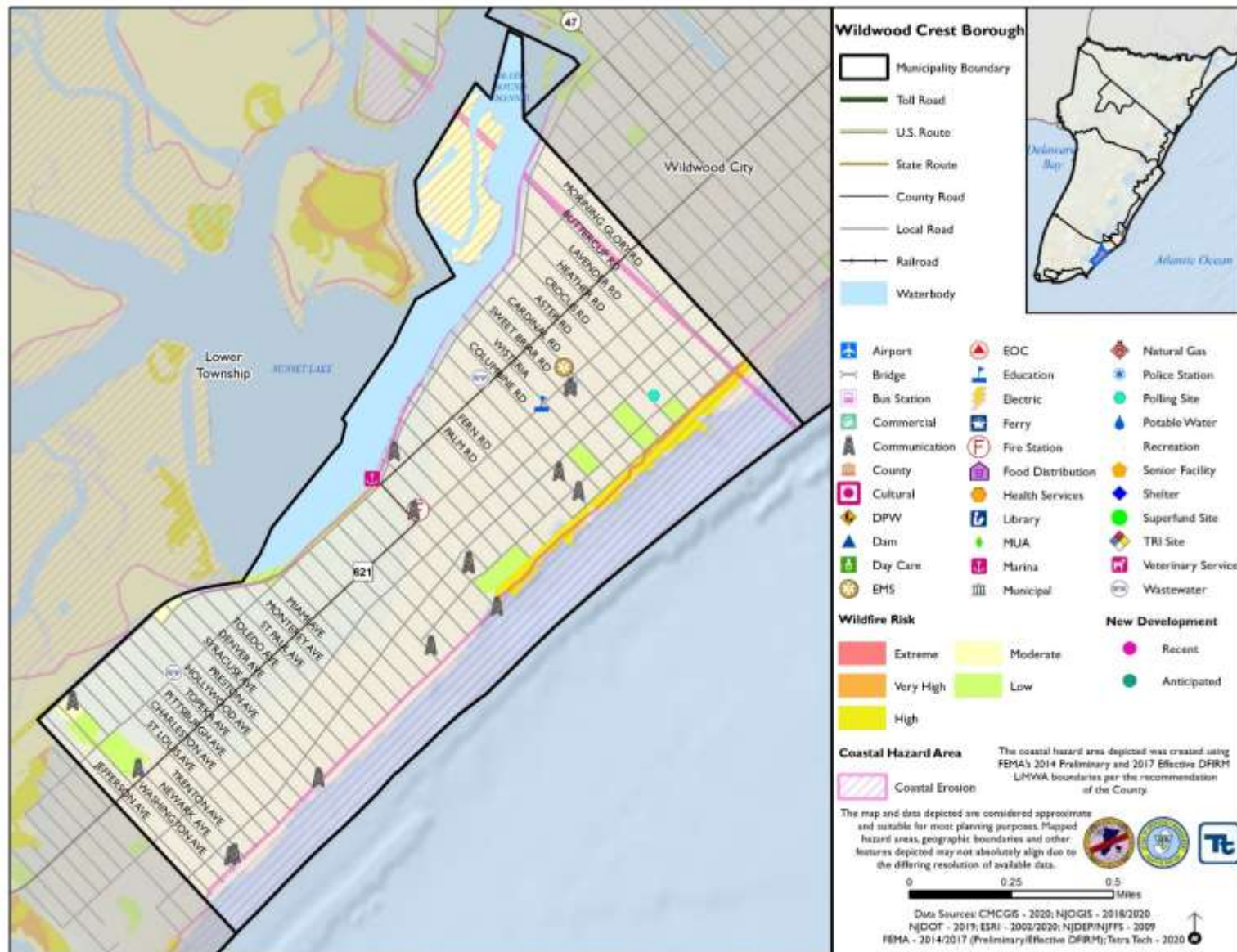
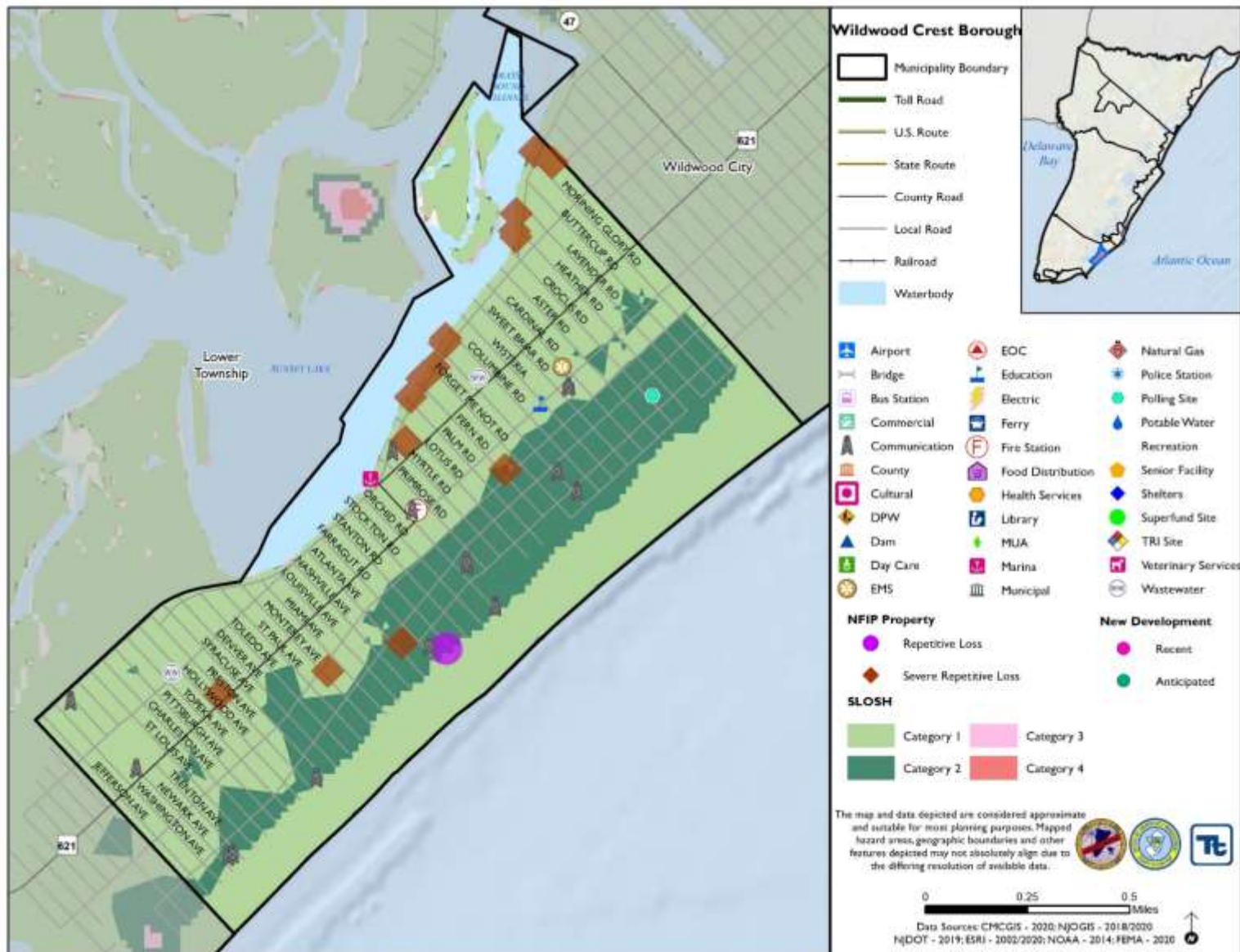




Figure 9.16-3. Borough of Wildwood Crest Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Bayside Stormwater Pump Stations		
Project Number:	2021-Wildwood Crest-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood		
Description of the Problem:	Low lying areas along the bayfront experience flooding, restricting access to homes and businesses and lowering emergency response capabilities.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will construct two stormwater pump stations to re-reroute bayside outfalls. The pump stations will be protected to the 500-year flood level and will have a backup power generator on site.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	500 year	Estimated Benefits (losses avoided):	Alleviate flooding in roadways, homes and allow for access to businesses
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	10 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	3 years
Estimated Time Required for Project Implementation:	3 Years	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove outfalls and replace with larger outfalls	High	Coastal flooding backflow continues
	Installing Actuated tidal valves	High	Stormwater flooding continues
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bayside Stormwater Pump Stations	
Project Number:	2021-Wildwood Crest-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The Borough is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	3 years
Agency Champion	1	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Bayside Outfall Tide Closure Valves		
Project Number:	2021-Wildwood Crest-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Tidal water floods roadways by entering bayside outfalls. This restricts access to homes and businesses and lowering emergency response capabilities.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will install automated tide closure valves on bayside outfalls.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100 year	Estimated Benefits (losses avoided):	Alleviate flooding in roadways, homes and allow for access to businesses
Useful Life:	25 years	Goals Met:	1
Estimated Cost:	\$2.5 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	1.5 Years	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Consolidate Outfalls	High	Flooding still likely
	Add Pump Station	\$5 million	High cost
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bayside Outfall Tide Closure Valves	
Project Number:	2021-Wildwood Crest-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The Borough is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	2 years
Agency Champion	1	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Bulkhead Replacement		
Project Number:	2021-Wildwood Crest-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Coastal Erosion		
Description of the Problem:	Borough bulkheads are in need of replacement and require a higher elevation to protect from higher flood levels. Failure of bulkheads could lead to subsidence issues and could cause large scale coastal erosion		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will replace or elevate existing Borough bulkheads in the right-of-way to elevation 8.00 in the NAVD88 datum.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	100-year flood event	Estimated Benefits (losses avoided):	Bulkhead collapse prevented; flooding reduced
Useful Life:	50 year	Goals Met:	1
Estimated Cost:	\$2 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	3 Years	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Remove bulkhead	\$100,000	Increased erosion
	Install living shoreline	\$200,000	Not likely to be effective. Too energetic of an environment
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Bulkhead Replacement	
Project Number:	2021-Wildwood Crest-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Protects properties from flooding, coastal erosion
Cost-Effectiveness	0	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Coastal Erosion
Timeline	1	2 years
Agency Champion	1	Borough Engineer, Borough Certified Floodplain Manager, Director of Public Works
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Repetitive Loss Properties		
Project Number:	2021-Wildwood Crest-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Borough has 203 repetitive loss properties and 75 severe repetitive loss properties but other properties may be impacted by flooding as well.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1
Estimated Cost:	\$30 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000 per home	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000 per roadways	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Properties	
Project Number:	2021-Wildwood Crest-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Borough has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Borough.
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Drainage Pipe along CR 621		
Project Number:	2021-Wildwood Crest-006		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Flood		
Description of the Problem:	An upgraded stormwater drainage system is needed along CR-621 and arterials in the Wildwoods (Wildwood Crest, Wildwood and North Wildwood). These are inadequate to even a 2-year storm.		
Action or Project Intended for Implementation			
Description of the Solution:	An enlarged drainage pipe is currently being installed from Rambler Road to Jefferson Avenue along CR 621 in the Crest with expected project completion in the spring of 2021.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by final project design	Estimated Benefits (losses avoided):	Increase drainage and reduce flooding
Useful Life:	50-years	Goals Met:	1
Estimated Cost:	\$3.8 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6 months
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Borough Engineer, County Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Elevate roadways	High	Costly and drainage concerns remain
	Install drainage basins	High	Would require buyout of properties
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Drainage Pipe along CR 621	
Project Number:	2021-Wildwood Crest-006	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The Borough is legally able to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	6 months
Agency Champion	1	Borough Engineer, County Engineering
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Ocean Stormwater Outfall Mitigation		
Project Number:	2021-Wildwood Crest-007		
Risk / Vulnerability			
Hazard(s) of Concern:	Coastal Erosion, Severe Weather, Flood		
Description of the Problem:	The Borough accretes sand, which has caused their outflow pipes to continually be buried/blocked. The entire downtown floods during heavy rains as a result. Ocean stormwater outfalls have been extended three times since 2001, and again need to be extended.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough has applied for a FEMA FY 2021 HMP grant for planning and design to mitigate flooding in the southern portion of town where this flooding is most prevalent. The US Army Corps project- Hereford Inlet to Cape May Inlet project has been planned and the Borough is awaiting word on when construction will commence. This project includes sand borrowing from the outfall areas to alleviate this issue. The project's start is likely 2022.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by final project design	Estimated Benefits (losses avoided):	Increase drainage and reduce flooding
Useful Life:	50 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protection, Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	3 years
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	USACE, HMGP, BRIC, Borough budget
Responsible Organization:	Borough Administration, USACE	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Reroute outflow pipes to bayside	High	Very costly
	Install drainage basins	High	Would not be able to hold entire volume of stormwater, requires space which would warrant major buyouts
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Ocean Stormwater Outfall Mitigation	
Project Number:	2021-Wildwood Crest-007	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties in the area from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	0	
Legal	0	The Borough requires legal permission to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Flood
Timeline	1	Within 4 years
Agency Champion	1	USACE, Borough Engineer
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power for Crest Memorial School		
Project Number:	2021-Wildwood Crest-008		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	The Borough lacks a shelter. They Borough has received grant funding (~\$75k) for a backup generator		
Action or Project Intended for Implementation			
Description of the Solution:	The Engineer will research what size generator is needed to power the Crest Memorial School so that it can operate necessary parts of the school as a shelter facility. OEM and the school district will then coordinate to install and maintain the generator.		
Is this project related to a Critical Facility?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of School and use as a shelter
Useful Life:	20 years	Goals Met:	1, 3
Estimated Cost:	\$75,000	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, OEM, School district	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power for Crest Memorial School	
Project Number:	2021-Wildwood Crest-008	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will allow for Crest Memorial School to be used a shelter
Property Protection	1	Project will protect building from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter
Timeline	1	Within 2 years
Agency Champion	1	Engineer, OEM, School district
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



9.17 BOROUGH OF WOODBINE

This section presents the jurisdictional annex for the Borough of Woodbine. The annex includes a general overview of the Borough of Woodbine; an assessment of the Borough of Woodbine's risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.17.1 Staff and Local Stakeholder Involvement in Annex Development

The Borough of Woodbine followed the planning process described in Section 3 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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. The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually. The following table summarizes who participated and in what capacity. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.17-1. Hazard Mitigation Planning Team and Contributors

Primary Point of Contact		Alternate Point of Contact
Name / Title: William Pikolycky, Mayor/OEM Coordinator Address: 2 South Boyd Street, Cape May Court House, NJ 08210 Phone Number: 609-861-5301 Email: mayor@boroughofwoodbine.net		Name / Title: Louis Ciabaton, Deputy OEM Coordinator Address: 2 South Boyd Street, Cape May Court House, NJ 08210 Phone Number: 609-276-7986 Email: Ciabaton@hotmail.com
NFIP Floodplain Administrator		
Name / Title: Bruce Graham, Borough Engineer Address: 2 South Boyd Street, Cape May Court House, NJ 08210 Phone Number: 609-465-2600 Email: bgraham@vannoteharvey.com		
Name	Title	Method of Participation
William Pikolycky	Mayor/OEM Coordinator	Primary point of contact, took stakeholder survey, reviewed and signed off on annex
Louis Ciabaton	Deputy OEM Coordinator	Alternate point of contact
Bruce Graham	Borough Engineer	NFIP floodplain administrator, reviewed and signed off on annex
James Craft	Fiscal/CFO	Reviewed and signed off on annex
Lewis H. Conley Jr.	Land Use Planner	Reviewed and signed off on annex
Clarence Ryan	Chief, Fire Department	Reviewed and signed off on annex

9.17.2 Jurisdiction Profile

The Borough of Woodbine is located within the northern section of Cape May County, New Jersey. It is bounded on the north and east by the Township of Upper and on the south and west by the Township of Dennis. It is part of the Ocean City Metropolitan Statistical Area.

According to the U.S. Census, the 2010 population for the Borough of Woodbine was 2,472. The estimated 2018 population was 2,490, a 0.7 percent increase from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 7.2 percent of the population is 5 years of age or younger and 16.7 percent is



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

9.17.3 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 understanding a jurisdiction's overall risk to its hazards of concern. Table 9.17-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.17-1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development.

Table 9.17-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	1	0	1	0	2	0	1	0	0	0
Multi-Family	0	0	0	0	0	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	1	0	0	0	0	0
Property or Development Name	Type of Development		# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development	
Recent Major Development and Infrastructure from 2015 to Present										
None identified										
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years										
None anticipated										

* Only location-specific hazard zones or vulnerabilities identified.

9.17.4 Capability Assessment

The Borough of Woodbine performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 6 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity.
- Information on National Flood Insurance Program (NFIP) compliance.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.17.4). The Borough of



Woodbine identified specific integration activities that will be incorporated into municipal procedures are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

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

Table 9.17-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 (with NJ edits dated March 14, 2020 coming soon)Building and Housing, Chapter X, adopted by the Borough Council. The Borough of Woodbine pursuant to N.J.S.A. 52-27D 110, et seq., and N.J.A.C. 5:23-4.3 hereby relinquishes its jurisdiction for the administration and enforcement of the Uniform Construction Code and hereby transfers jurisdiction for the administration and enforcement of the Uniform Construction Code to the Department of Community Affairs of the State of New Jersey.					
Zoning Code	Yes	State & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan.Zoning, Chapter XXVI, adopted by the Board of Commissioners. A comprehensive ordinance regulating and limiting the uses of land and the users and locations of buildings and structures; regulating and restricting the height and bulk of buildings and structures and determining the areas of yards, courts and other open spaces; regulating and restricting the density of population; dividing the Borough into districts for such purposes; adopting a map of the Borough showing boundaries and the classification of such districts; and prescribing penalties for the violation of its provisions.The Zoning Chapter is adopted pursuant to N.J.S.A. 40:55D-1, et seq., in order to promote and protect the public health, safety, morals, and general welfare, and in furtherance of more specific objectives, such as; implementing the requirements of the Pinelands Protection Act (N.J.S.A. 13:18A-1, et seq.) and the Pinelands Comprehensive Management Plan (N.J.A.C. 7:50-1, et seq.) along with several standard purposes listed in the Municipal Land Use Law.In addition to the standard development regulations contained in most Zoning Ordinances, this Chapter contains references throughout pertaining to the Pinelands Protection Act. It has separate sections on forestry, protection from fire hazards, flood protection, stormwater drainage and airport zoning.					
Subdivisions	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
Comment: <ul style="list-style-type: none">P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<p>by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section.</p> <ul style="list-style-type: none">Subdivisions, Chapter XXIV, adopted by the Borough Council. The purpose of this Chapter is to provide rules, regulations and standards to guide land subdivision in the Borough of Woodbine in order to promote the public health, safety, convenience and general welfare of the municipality by helping to assure the orderly growth and development, the conservation, protection and proper use of land and adequate provision for circulation, utilities and services; and to implement the objectives of the Pinelands Protection Act and the Pinelands Comprehensive Management Plan.This Chapter combines many standard subdivision design and approval requirements with those required by the Borough's location in the Pinelands Area.					
Stormwater Management	Yes	State & Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8Stormwater Control, Chapter XXI, approved by the Borough Council. The purpose of this Chapter is Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.This section shall be applicable to all site plans and subdivisions for the following major developments that require preliminary or final site plan or subdivision review. Applicants for development shall identify the nonstructural measures incorporated into the design of the project. The applicant shall submit a detailed Land Use Planning and Source Control Plan which provides a description of how the site will be developed to meet the erosion control, groundwater recharge and stormwater runoff quantity and quality standards through use of nonstructural or low impact development techniques and source controls to the maximum extent practicable before relying on structural BMPs. The Land Use Planning and Source Control Plan shall include a detailed narrative and associated illustrative maps and/or plans that specifically address how each of the nine (9) nonstructural strategies identified in Subchapter 5 of the NJDEP Stormwater Management Rules (N.J.A.C. 7:8-5) and set forth in this Chapter (paragraph 4(a)(1) through (9)) will be implemented to the maximum extent practicable.This is a comprehensive Stormwater Management Ordinance, the development of which is influenced by the Borough's location in CAFRA Zone and Pinelands Area.					
Post-Disaster Recovery	No	-	No	-	-
<p>Comment:</p>					
Real Estate Disclosure	Yes	State, Division of Consumer Affairs	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none">N.J.A.C. 13:45A-29.1 - Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision.Section 21-1.3 of the Borough's Flood Damage Prevention Ordinance 'Statement of Purpose' has a provision to ensure that potential buyers are notified that property is in an area of special flood hazard.					
Growth Management	No	-	Yes – if municipality has a Planning Board	-	-
<p>Comment:</p> <ul style="list-style-type: none">State Mandated on a municipal level. See Zoning Ordinance ; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy.					
Site Plan Review	Yes	County & Local	Yes – if municipality has a Planning Board	Yes	-
<p>Comment:</p>					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
<ul style="list-style-type: none">Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of freeholders of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance.Land Use Procedures, Chapter XXIII, adopted by the Borough Council. This Chapter establishes the procedures for review Boards and development approvals, including Site Plans. The Woodbine Planning Board, a nine (9) member Board, has studied the concept of unifying the powers of the Zoning Board of the Borough of Woodbine with those of the Planning Board of the Borough as permitted by N.J.S.A. 40:55D-25(c), amended by P.L. 1994, c. 186, allowing a municipality having a population of less than ten thousand (10,000) to so consolidate the powers of the Zoning and Planning Boards into an existing nine (9) member municipal Planning Board. The Borough has exercised that power and created a unified Board.This Chapter mainly addresses the procedures for Site Plan approval. Development standards that apply to Site Plan improvements are contained in other Chapters of the Code.					
Environmental Protection	No	-	No	-	-
Comment: Although there is no separate Environmental Protection Ordinance, it should be noted that environmental protections are afforded to the Borough by way of its location in the CAFRA Zone and the Pinelands.					
Flood Damage Prevention	Yes	State & Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016.Flood Damage Prevention, Chapter XXII, adopted by the Borough Council on 07-20-17 and effective on 10-05-17. It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:<ul style="list-style-type: none">Protect human life and health;Minimize expenditure of public money for costly flood control projects;Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general publicMinimize prolonged business interruptions;Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard;Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;Ensure that potential buyers are notified that property is in an area of special flood hazard; andEnsure that those who occupy the areas of special flood hazard assume responsibility for their actions.In order to accomplish its purposes, this chapter includes methods and provisions for:<ul style="list-style-type: none">Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction;Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;Controlling filling, grading, dredging, and other development which may increase flood damage; and,Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.It appears this Chapter requires elevation of regulated improvements in the SFHA to be equivalent to the minimum State standards. Does the Borough want to consider increasing the minimum the minimum amount of required freeboard and adding it as an action in the HMP?					
Wellhead Protection	No	-	No	-	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:					
Emergency Management	No	-	No	-	-
Comment:					
Climate Change	No	-	No	-	-
Comment:					
Disaster Recovery Ordinance	No	-	No	-	-
Comment:					
Disaster Reconstruction Ordinance	No	-	No	-	-
Comment:					
Other	Yes	Federal & Local	No	Yes	-
Comment: <ul style="list-style-type: none">Air Safety, Chapter XXVIII, adopted by the Borough Council. Air Safety and Hazardous Zoning for the Area Immediately Surrounding Woodbine Municipal Airport.This Chapter establishes minimum standards for the control of airport and aeronautical hazards, and standards for land use adjacent to airports is hereby adopted pursuant to N.J.A.C. 16:62 et seq., as amended May 15, 1989. These standards shall become part of the master plan of development. A copy of N.J.A.C. 16:62, et seq., is annexed hereto and made a part hereof, by reference.					
Planning Documents					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
Comment: <ul style="list-style-type: none">2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen freeholders with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity.					
Capital Improvement Plan	Yes	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Capital Budget and Capital Improvement Program, 2019, approved by the Borough Council. The Borough is only undertaking the capital projects that will maintain the services and condition of the Borough's facilities. The 2019 Capital Projects include; various improvements and infrastructure, public facility upgrades and open space.					
Disaster Debris Management Plan	No	-	No	-	-
Comment:					
Floodplain or Watershed Plan	No	-	No	-	-
Comment:					
Stormwater Management Plan	No	-	Yes	-	-
Comment: <ul style="list-style-type: none">The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13.					
Stormwater Pollution Prevention Plan	No	-	Yes	-	-
Comment: <ul style="list-style-type: none">The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component.					
Urban Water Management Plan	No	-	No	-	-
Comment:					
Habitat Conservation Plan	No	-	No	-	-
Comment:					
Economic Development Plan	No	-	No	-	-
Comment:					
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-	-
Comment: <ul style="list-style-type: none">NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:27E-1 et seq.					
Community Wildfire Protection Plan	No	Local	No	Yes	-
Comment: <ul style="list-style-type: none">Zoning, Chapter XXVI, adopted by the Borough Council. The Borough does not have a Community Wildfire Protection Plan, but within the Zoning Code there is a separate section pertaining to Fire Management 26-43.9, with specific requirements for wildfire protection.					
Community Forest Management Plan	Yes	State & Local	No	No	2021-Woodbine-004
Comment: <ul style="list-style-type: none">Community Forestry Management Plan, dated October 28, 2004. Period covered November 2004 – October 2009. The purpose of the Community Forestry Management Plan is to continue to promote a safe, manageable, and productive community forest and shade tree resource for the Borough of Woodbine, continuing the efforts of the first five-year plan.Goals and Objectives:<ul style="list-style-type: none">Enhancement and Safety of the Tree ResourceMaintain Safety of Residents and VisitorsDiversify the Tree Species Composition along The Borough's Streets and RoadwaysEnsure the Health of the Borough's Community ForestProactive Program to Ensure Quick Response After a Natural DisasterContinue to Promote Stewardship Among the Citizens of WoodbineThe Plan includes a number of recommendations but is 15 years out of date.					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of this been integrated into your mitigation plan?	
				If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Transportation Plan	No	-	No	-	-
<i>Comment:</i>					
Agriculture Plan	No	-	No	-	-
<i>Comment:</i>					
Climate Action Plan	No	-	No	-	-
<i>Comment:</i>					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					
•					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	-	-
<i>Comment:</i>					
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	-	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	No	-	No	-	-
<i>Comment:</i>					
Public Health Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					

Table 9.17-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Planning/Zoning
Does your jurisdiction have the ability to track permits by hazard area?	Yes



Criterion	Response
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No. The Borough is 90 percent built out.

ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

Table 9.17-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Planning and Zoning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	No	-
Open Space Board / Committee	No	-
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	No	-
Maintenance program to reduce risk	Yes	Public Works
Mutual aid agreements	Yes	Volunteer Fire Department with surrounding departments
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Under contract
Engineers or professionals trained in building or infrastructure construction practices	Yes	Under contract
Planners or engineers with an understanding of natural hazards	Yes	Under contract
Staff with training in benefit/cost analysis	No	-
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	Yes	Under contract
Stormwater engineer	Yes	Engineer; review applications for stormwater management impact
Personnel skilled or trained in GIS applications	No	-
Local or state water quality professional	Yes	Water Department; responsible to maintain water quality
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Manuel Gonzalez
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Triad Consultants
Resilience Officer	No	-
Other	No	-

FISCAL CAPABILITY

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



Table 9.17-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	Yes – Currently Using
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes – Have Not Used
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes – Have Not Used
Incur Debt through Special Tax Bonds	Yes – Never Used
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes – COAH Fee Ordinance Established but Not Utilized Yet
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.17-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes, Mayor's office
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	No

COMMUNITY CLASSIFICATIONS

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

Table 9.17-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	No	-	-
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	Bronze	December 21, 2018



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 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.17-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Climate Change and Sea Level Rise	Moderate
Coastal Erosion	Moderate
Disease Outbreak (new)	Moderate
Drought (new)	Moderate
Flood	Moderate
Hurricane	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Tsunami	Moderate
Wildfire	Moderate
Climate Change and Sea Level Rise	Moderate

Notes:

Strong = Capacity exists and is in use; *Moderate* = Capacity may exist, but is not used or could use some improvement;

Weak = Capacity does not exist or could use substantial improvement; *Unsure* = Not enough information is known to assign a rating.

The Borough does not currently have access to resources to determine the possible impacts of climate change upon the municipality. The administration is supportive of integrating climate change in policies or actions. However, budget limitations exist.

NATIONAL FLOOD INSURANCE PROGRAM

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

Table 9.17-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Engineering/Zoning
Who is your floodplain administrator? (name, department/position)	Bruce Graham, Borough Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2017
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	August 1, 1995
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes



Criterion	Response
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	No
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?*	1 policy
-What is the insurance in force? -What is the premium in force?	
How many total loss claims have been filed in your jurisdiction?*	0 claims
-How many claims are still open or were closed without payment? -What were the total payments for losses?	
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation?	No

*According to FEMA statistics as of October 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- While the Borough recognizes that it has a risk to wildfire, the entire Borough is on city water which includes fire hydrants. The State has an aggressive state forest fire program.
- Tree Assessment of Municipal Trees: The Borough completed an iTree Ecosystem Report in August 2017
- Sustainable Jersey: The Borough is a bronze certified community in the Sustainable Jersey program. The Borough has earned points toward certification through community partnership and outreach, holding a green fair, energy efficiency for municipal facilities, having a wind ordinance, a sustainable land use pledge, development of an eco-park, adopting a Complete Streets Policy, instituting a water conservation education program, adopting a clustering ordinance, an environmental assessment ordinance, a habitat conservation ordinance, development of the Borough's Community Forestry Management Plan, the iTree assessment, and a paper shredding day.

9.17.5 Hazard Event History Specific to the Jurisdiction

Cape May County has a history of hazard events, as detailed in Section 5 (Risk Assessment) of this plan. A summary of historical events is provided in each of the hazard profiles in Section 5.4 (Hazard Profiles) and includes a chronology of events that affected Cape May County and its jurisdictions. The Borough of Woodbine's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Cape May County. Table 9.17-11 provides details regarding municipal-specific loss and damages the Borough experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.17-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Weather and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the county was impacted, the Borough did not receive damages.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	The Borough was subject to masking and social distancing restrictions and business



Date(s) of Event	Event Type (disaster declaration if applicable)	Cape May County Designated?	Summary of Event	Summary of Local Damages and Losses
				/school closures due to coronavirus.

Source: NOAA NCEI 2020, FEMA 2020

9.17.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

The hazard profiles in Section 5 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. Refer to Section 5.1 (Methodology) and Section 5.3 (Hazard Ranking) for a detailed summary for the Borough of Woodbine risk assessment results and data used to determine the hazard ranking.

REPETITIVE FLOOD LOSSES

The table below summarizes the repetitive and severe repetitive flood losses in the Borough of Woodbine.

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

Source: NFIP FEMA Region 2, 2020

Note: The number of SRL properties excludes RL properties.

CRITICAL FACILITIES

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

Table 9.17-12. Potential Flood Losses to Critical Facilities and Lifelines

Name	Type	Exposure	
		1% Event	0.2% Event
None identified			

Source: FEMA DFIRM 2014/2017; Cape May County 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES

The jurisdiction has identified the following vulnerabilities within their community:

- Stormwater flooding occur affecting a critical facility (Woodbine Developmental Center) affecting and various homes in the location.

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Borough of Woodbine that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can be clearly identified using mapping techniques and technologies and for which the Borough of Woodbine has significant exposure. A map of the Borough of Woodbine hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain, as well as identified critical facilities within the municipality.

HAZARD RANKING





This section includes the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Cape May County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential natural hazards for the Borough of Woodbine. The Borough of Woodbine has reviewed the Cape May County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Borough indicated the following:

- The Borough agreed with the calculated hazard rankings.

Table 9.17-13. Borough of Woodbine Hazard Ranking Input

Climate Change and Sea Level Rise	Coastal Erosion	Disease Outbreak (new)	Drought (new)	Flood	Hurricane
Low	Low	Medium	Medium	Low	Medium

Nor'Easter	Severe Weather	Severe Winter Weather	Tsunami	Wildfire
High	High	High	Low	High

9.17.7 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and provides action prioritization.

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction's progress on their mitigation strategy identified in the 2015 HMP. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under 'Capability Assessment' presented previously in this annex.

Table 9.17-14. Status of Previous HMP Mitigation Actions

2015 Action Number Action Description			Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update? Check if Yes Enter 2021 HMP Action #	
BW-1a	Property Mitigation Support – Retrofit: Where appropriate, support retrofitting of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and	Borough (likely through NFIP Floodplain Administrator); State OEM, County OEM	Ongoing Capability (no properties currently)			



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2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	severe repetitive loss properties as priority.				
BW-1b	Property Mitigation Support – Acquisition/Relocation: Where appropriate, support acquisition and/or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority.	Borough (likely through NFIP Floodplain Administrator); State OEM, County OEM	Ongoing Capability (no properties currently)		
BW-2	Support County-wide initiatives identified in Section 9.1 of the County Annex. Support county-wide initiatives identified in the Cape May County Hazard Mitigation Plan	Local departments (as applicable for specific initiative)	Ongoing Capability		
BW-3	Retrofit (harden) Borough facilities that may be used to support sheltering and staging operations (in cooperation with County and State OEM), including backup utilities where needed. Continue to seek funding for permanent backup generators at the school (ARC-designated shelter), airport, municipal building, EOC/ambulance facility, and water pumping station	Municipal Emergency Manager with support from County OEM and NJOEM	No Progress	X	2021-Woodbine-002, 2021-Woodbine-005
BW-4	Work with County OEM and Borough industries and commercial operations (e.g. Sea Isle Ice Company, Woodbine Municipal Airport) to enhance their capabilities to support regional emergency preparedness, response and recovery.	County and Local OEM; owners of applicable Borough businesses and facilities	Ongoing Capability		
BW-5	Continue to support County-led efforts to conduct an engineering study to understand flooding issues and evaluate possible solutions along Webster Avenue (CR638) in the Borough of Woodbine.	County Engineering with municipal support	Ongoing Capability		
BW-6	Become a National Fire Protection Association (NFPA) “Firewise” community	Local Fire Chiefs working with County Fire Coordinator	No Progress	X	2021-Woodbine-003
BW-7	Through attendance at the regular meetings of the Cape May County Fire Chiefs Association, and in partnership with the New Jersey Division of Fire Safety and the New Jersey State Forest Fire Service, expand	Local Fire Chiefs	Ongoing Capability		



2015 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
	and enhance public awareness and education programs that support wildfire mitigation at the property owner level; and expand local wildfire preparedness and response capabilities through participation in seminars and training, and the implementation of recommendations and initiatives offered by these agencies, as resources permit.				
BW-8	Installation of stormwater management infrastructure along multiple Borough roads in order to mitigate recurring flooding conditions and maintain access along a County Emergency Evacuation Route during storm events.	Public Works	In Progress	X	2021-Woodbine-001

In addition to the above progress, the Borough of Woodbine identified the following mitigation projects/activities that were completed but not identified in the 2015 HMP mitigation strategy:

- None identified

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Borough of Woodbine participated in a risk assessment workshop in September 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Borough of Woodbine participated in a mitigation action workshop in October 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Cape May County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; and the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 *Selecting Appropriate Mitigation Measures for Floodprone Structures* (March 2007) and FEMA *Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards* (January 2013). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.17-15 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Woodbine would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. Initiatives are dependent upon available funding (grants and local match availability) and can be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the 4 FEMA mitigation action categories and the 6 CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as *High*, *Medium*, or *Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.



Table 9.17-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.17-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Woodbine-001	Clay, Heilprin & Webster Stormwater Extension	Problem: Stormwater flooding impacts a critical facility (Woodbine Developmental Center) and affects various homes in the location. Solution: The Borough Engineer will design the necessary stormwater improvements. The Borough will then complete construction of a one block extension of the existing stormwater pipe.	Existing	Flood, Severe Weather	1	Borough Engineer	HMGP, BRIC, Borough budget	Will provide a risk reduction to protect the critical facility's water main and equipment and prevent flooding of homes in the location	High	1 year	High	SIP	SP
2021-Woodbine-002	Harden Critical Facilities	Problem: Borough facilities that may be used for sheltering include the school, airport, municipal building, and EOC/ambulance facility. These facilities require retrofit to ensure they are protected from severe weather events. Solution: The Borough will retrofit (harden) Borough facilities that may be used to support sheltering and staging operations. Retrofitting will include ensuring buildings are protected from wind and storm damages.	Existing	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane	1, 3	Engineer, Municipal Emergency Manager	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget	Ensures continuity of operations	High	Within 5 years	High	SIP	PP, ES
2021-Woodbine-003	Become a Firewise Community	Problem: The Borough has wildfire risk but is not a member of the Firewise Community. Solution: The Borough will enroll in the Firewise program.	New and Existing	Wildfire	2, 4, 5	Administration	Borough budget	Increase wildfire capabilities	Staff time	Within 5 years	High	LPR, EAP	PR, PI
2021-Woodbine-004	Community Forestry Management Plan	Problem: The purpose of the Community Forestry Management Plan is to continue to promote a safe, manageable, and productive community forest and shade tree resource for	N/A	Drought, Wildfire	2, 5	Administration	Borough budget	Updated planning and	Staff time	Within 2 year	High	LPR, NSP	NR



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		the Borough of Woodbine, continuing the efforts of the first five-year plan. However, the plan is 15 years out of date. Solution: The Borough will update the Community Forestry Management Plan, including the identification of mitigation actions to protect from the impacts of drought and wildfire.						identified actions					
2021-Woodbine-005	Backup Power	Problem: Backup power sources are necessary to maintain critical services for critical facilities. The Borough has facilities that lack backup power including the school (ARC-designated shelter), airport, municipal building, EOC/ambulance facility, and water pumping station. Solution: The Engineer will research what size generator is needed to power each facility. The Borough will then purchase and install the selected generators and necessary electrical components to supply backup power to each facility.	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 3, 4	Engineer, Municipal Emergency Manager with support from County OEM and NJOEM	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of critical facilities	\$50,000 per generator	Within 5 years	High	SIP	ES

Notes:

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
BRIC	Building Resilient Infrastructure and Communities Program

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- **Local Plans and Regulations (LPR)** – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- **Structure and Infrastructure Project (SIP)** - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- **Natural Systems Protection (NSP)** – These are actions that minimize damage and losses and preserve or restore the functions of natural systems.





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

CRS Category:

- *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. 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. 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. Structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.



Table 9.17-16. Summary of Prioritization of Actions

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2021-Woodbine-001	Clay, Heilprin & Webster Stormwater Extension	0	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High ⚠
2021-Woodbine-002	Harden Critical Facilities	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Woodbine-003	Become a Firewise Community	1	1	1	1	1	1	1	1	1	1	0	0	1	1	12	High
2021-Woodbine-004	Community Forestry Management Plan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Woodbine-005	Backup Power	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High

Notes: Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions.
Low (0-4), Medium (5-8), High (9-14).



This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



Table 9.17-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Climate Change and Sea Level Rise								
Coastal Erosion								
Disease Outbreak (new)								
Drought (new)				X			X	X
Flood						X		
Hurricane		X			X			
Nor'Easter		X			X			
Severe Weather		X			X	X		
Severe Winter Weather		X			X			
Tsunami								
Wildfire	X		X	X			X	X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

RED high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard



Figure 9.17-1. Borough of Woodbine Hazard Area Extent and Location Map 1

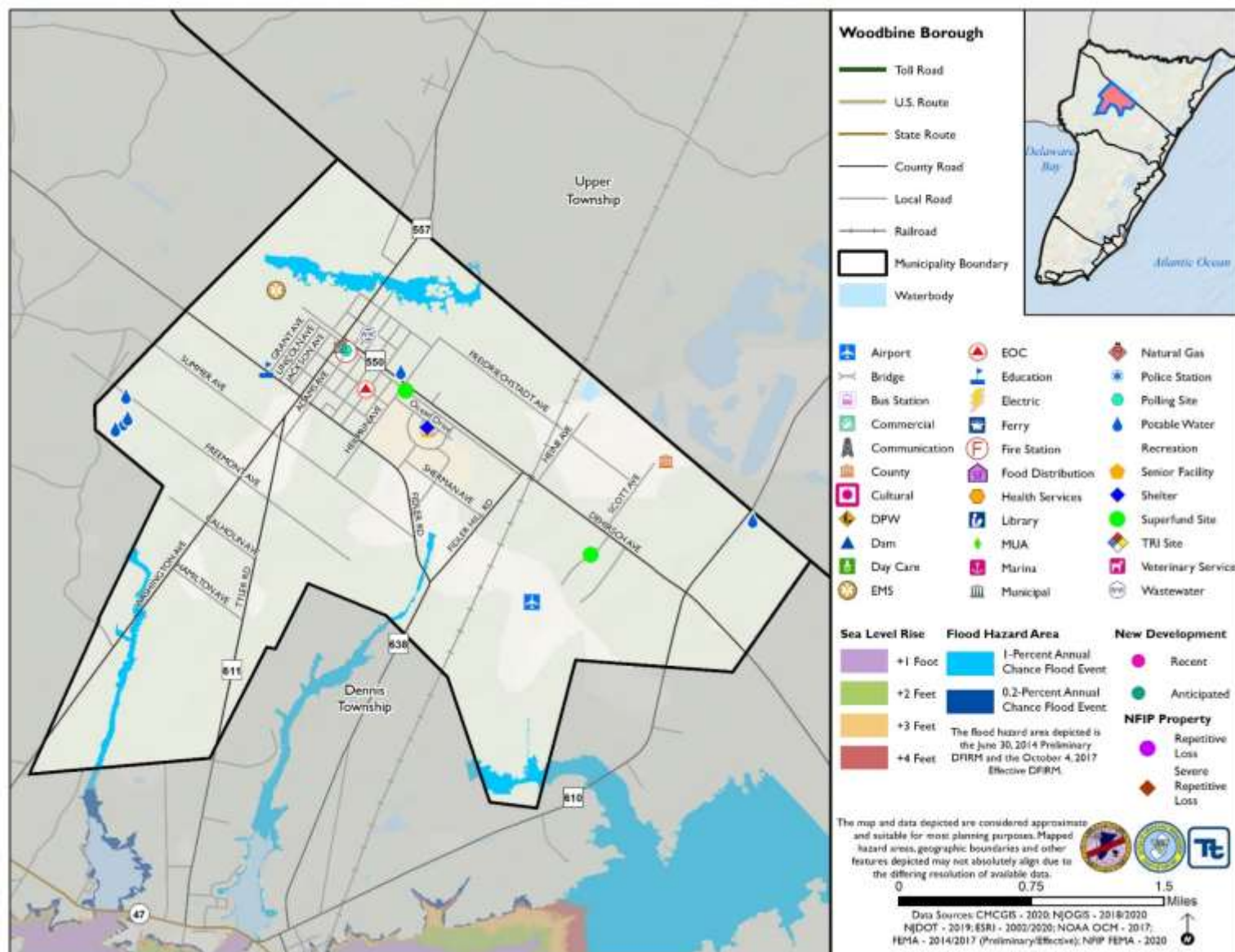


Figure 9.17-2. Borough of Woodbine Hazard Area Extent and Location Map 2

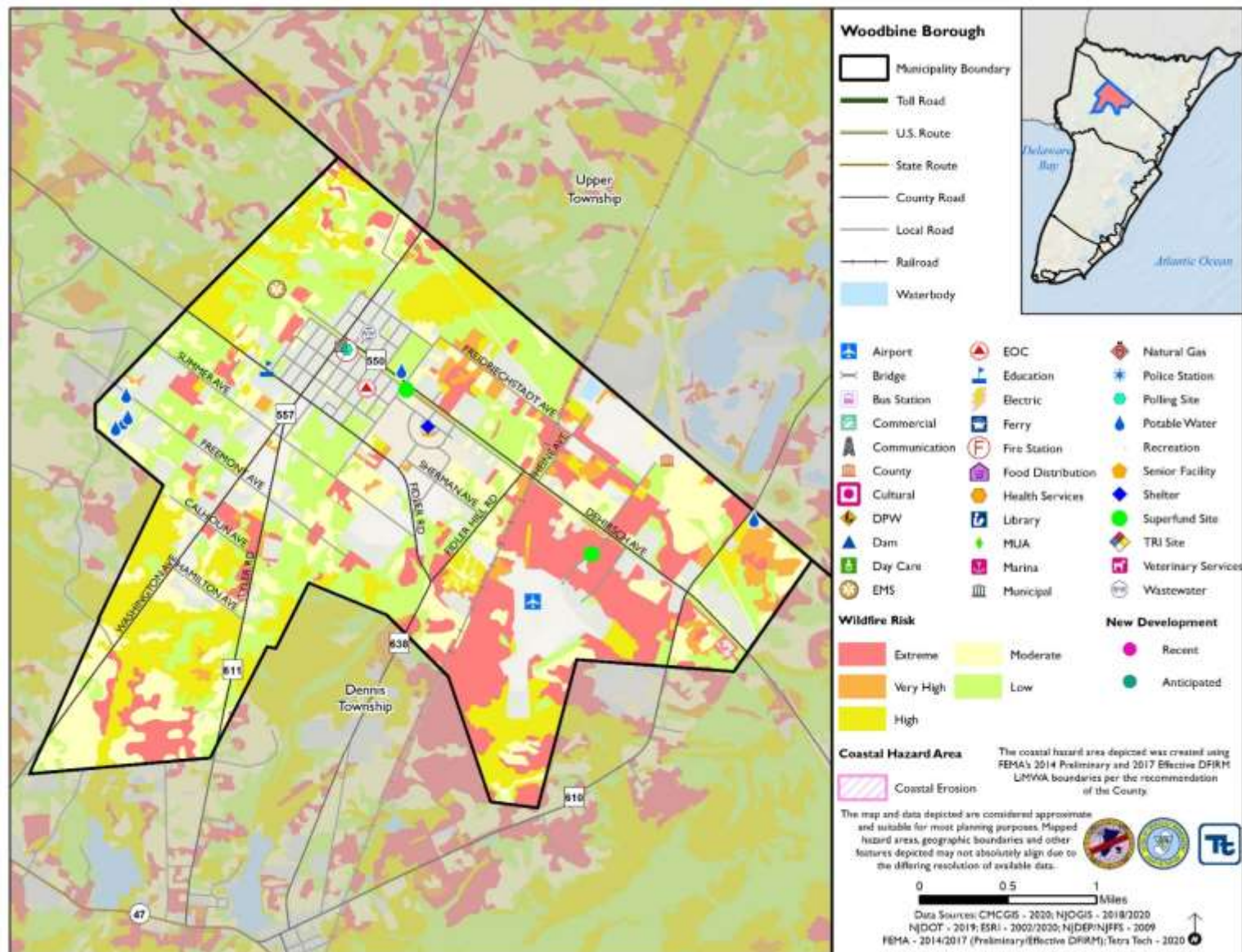
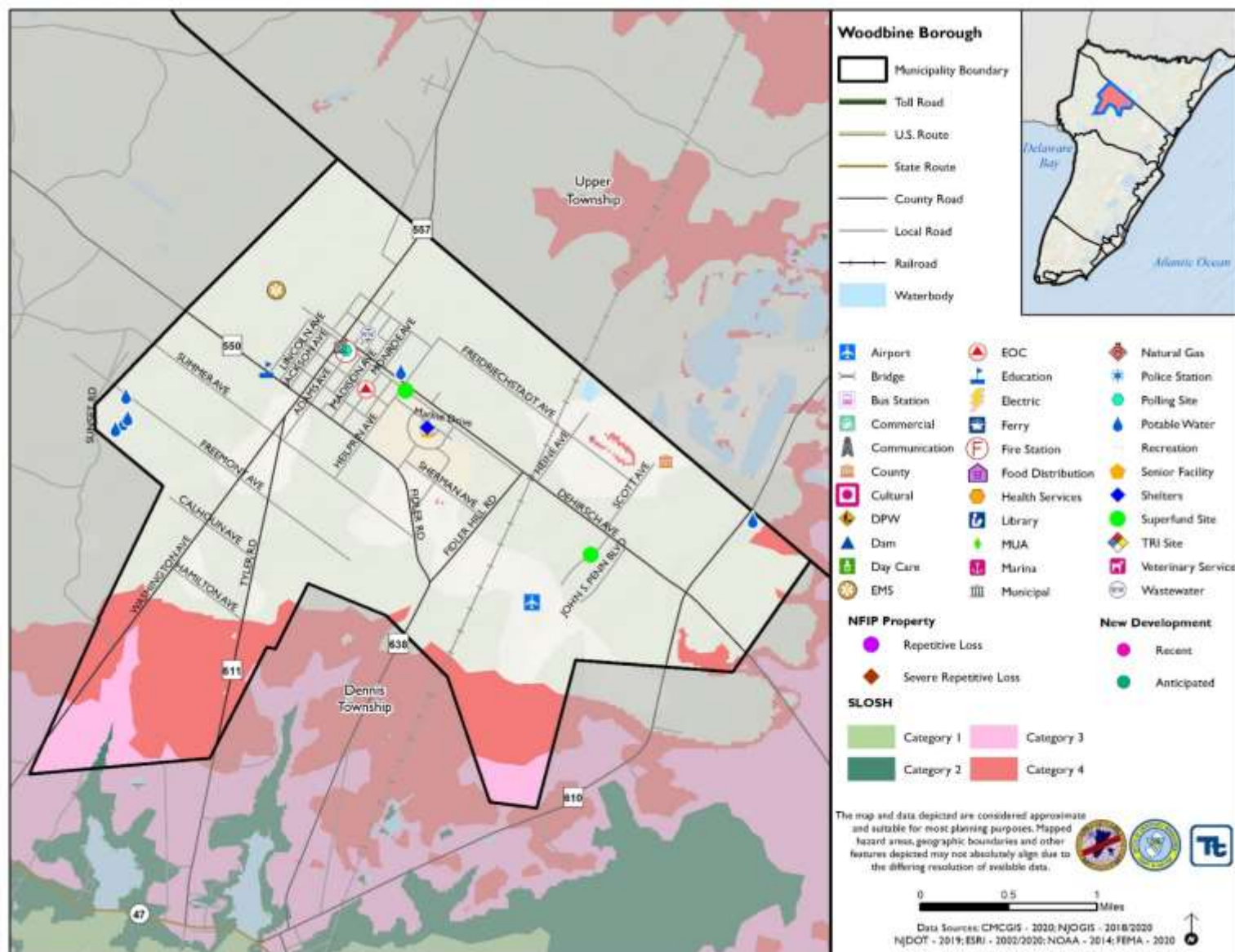




Figure 9.17-3. Borough of Woodbine Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Clay, Heilprin & Webster Stormwater Extension		
Project Number:	2021-Woodbine-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Stormwater flooding impacts a critical facility (Woodbine Developmental Center) and affects various homes in the location.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough Engineer will design the necessary stormwater improvements. The Borough will then complete construction of a one block extension of the existing stormwater pipe.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	TBD by design specifications	Estimated Benefits (losses avoided):	Will provide a risk reduction to protect the critical facility's water main and equipment and prevent flooding of homes in the location
Useful Life:	20 years	Goals Met:	1
Estimated Cost:	High	Mitigation Action Type:	Hazard mitigation, Stormwater management
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, BRIC, Borough budget
Responsible Organization:	Borough Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Enlarge water basin	\$75,000-100,000	Little to no impact
	Change road elevation	\$500,000	Not feasible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Clay, Heilprin & Webster Stormwater Extension	
Project Number:	2021-Woodbine-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Properties protected from flooding
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Borough has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
Timeline	1	1 year
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Harden Critical Facilities		
Project Number:	2021-Woodbine-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane		
Description of the Problem:	Borough facilities that may be used for sheltering include the school, airport, municipal building, and EOC/ambulance facility. These facilities require retrofit to ensure they are protected from severe weather events.		
Action or Project Intended for Implementation			
Description of the Solution:	The Borough will retrofit (harden) Borough facilities that may be used to support sheltering and staging operations. Retrofitting will include ensuring buildings are protected from wind and storm damages.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	500-year storm event	Estimated Benefits (losses avoided):	Ensures continuity of operations
Useful Life:	TBD by feasibility assessment	Goals Met:	1, 3
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Borough Budget
Responsible Organization:	Engineer, Municipal Emergency Manager	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Rebuild facilities to new standards	High	Costly and not necessary
	Build secondary facilities protected to new standards	High	Costly and not necessary
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Harden Critical Facilities	
Project Number:	2021-Woodbine-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of Borough facilities
Property Protection	1	Project will protect Borough facilities from storm damage.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Nor'Easter, Hurricane
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Municipal Emergency Manager
Other Community Objectives	1	Protection of critical services
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power		
Project Number:	2021-Woodbine-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. The Borough has facilities that lack backup power including the school (ARC-designated shelter), airport, municipal building, EOC/ambulance facility, and water pumping station.		
Action or Project Intended for Implementation			
Description of the Solution:	The Engineer will research what size generator is needed to power each facility. The Borough will then purchase and install the selected generators and necessary electrical components to supply backup power to each facility.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of critical facilities
Useful Life:	20 years	Goals Met:	1, 3, 4
Estimated Cost:	\$50,000 per generator	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Municipal Emergency Manager	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power	
Project Number:	2021-Woodbine-005	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of critical facilities
Property Protection	1	Project will protect facilities from power loss.
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The Borough has the legal authority to complete the project.
Fiscal	0	Project requires funding support.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Municipal Emergency Manager
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	