



9.3 City of Cape May

This section presents the jurisdictional annex for the City of Cape May.

9.3.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Dr. Edward J. Mahaney, Jr., Mayor 643 Washington Street Cape May, NJ 08204-2397 (609) 425-1774 emahaney@capemaycity.com	Bruce A. MacLeod, City Manager 643 Washington Street Cape May, NJ 08204-2397 (609) 425-3546 bruceam@mapmaycity.com

9.3.2 Municipal 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 by portions of the Township of Lower and the Borough of Wildwood Crest, on the south by the Atlantic Ocean, and on the west by the Borough of West Cape May, the Township of Lower, the Borough of Cape May Point and the Delaware Bay. It is part of the Ocean City Metropolitan Statistical Area. Poverty Beach is an unincorporated community within the City.

The Cape May-Lewes Ferry provides transportation across the Delaware Bay to Lewes, Delaware. Cape May Harbor, which borders Lower Township and nearby Wildwood Crest allows fishing vessels to enter from the Atlantic Ocean.

According to the U.S. Census Bureau, the city had a total area of 2.7 square miles, including 2.4 square miles of land and 0.3 square miles of water (12.4 percent water). As of 2010 there were 3,607 year-round residents in the City.

Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in Section 9.3.8 of this annex, which illustrates the hazard areas along with the location of potential new development.

Table 9.3-1. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address	Block / Lot	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2010 to Present						
Cape May Marina/ Spicer’s Creek	Residential/ Commercial	36	Lafayette St (1200 Block)		Flood	Active
Known or Anticipated Development in the Next Five (5) Years						
DiDonato Tract	Residential	12 (+ -)	Pittsburgh & Missouri		Flood	Pending
Pela Development	Residential	15	New York Ave (1500 Block)		Flood	Approved



Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address	Block / Lot	Known Hazard Zone(s)	Description/Status of Development
Desalination Plant Expansion	Governmental	1	830 Canning House Lane		Flood	Planning & Permitting

* Only location-specific hazard zones or vulnerabilities identified.

9.3.3 Natural Hazard Event History Specific to the Municipality

Cape May County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2010 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.3-2. Hazard Event History

Date(s) of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
November 12-13, 2009	Severe Storms and Flooding associated with Tropical Depression Ida and a Nor'Easter	DR-1867	Yes	Flooding – Elmira Street
February 5-6, 2010	Severe Winter Storm and Snowstorm (blizzard)	DR-1889	Yes	Snow Plow operation for a 48 hour period. Police assistance for Fire/ EMT over 100 Calls during same period.
February 9-10, 2010	Winter Storm / Blizzard	No	N/A	Snow Plow operations performed over a 72 hour period. Police and Fire/ EMS responded to calls over the same period of the storm.
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	Snow removal Operations over a 48 hour period Assisted EMS with transport to local hospital.
August 27-28, 2011	Hurricane Irene	DR-4021	Yes	Heavy winds & rain causing severe beach erosion of 141,478 cu.yds., and 6,760 LF of Dune fence, street flooding, Police & Fire assisted with Evacuation of residents, Police Communication System Loss, P.W. Crews removed sand, debris, fallen trees, from streets during storm.
October 28, 2012	Hurricane Sandy	DR-4086	Yes	Severe Beach Erosion, Loss 14,000 LF. Dune fence loss, , Police & Fire assisted with Evacuation of residents, Street flooding, Road Closures, Tidal Surges, Power Outages, P.W. Crews cleared roads of sand and debris during and after storm
October 1-4, 2015	Hurricane Joaquin	No	N/A	Severe Beach Erosion, Street Flooding-Elmira, Bank, Venice Streets, Yacht Ave. during storm. Trees down, Drainage issues, Queen Street Outfall Pipe and Cradle Damage



9.3.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The risk ranking methodology is presented in Section 5.3. However, each municipality had the opportunity to adjust the final ranking based on municipal feedback. The following summarizes the hazard vulnerabilities and their ranking in the City of Cape May. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the City of Cape May.

Table 9.3-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Climate Change & Sea Level Rise	RCV in +3 feet: \$230,264,581	Frequent	18	Medium
Coastal Erosion	RCV in CEHA: \$14,491,249	Frequent	18	Medium
Flood	1% Annual Chance: \$1,873,594,978	Frequent	54	High
Hurricanes & Tropical Storms	Category 1 SLOSH: \$3,068,487,391 Category 2 SLOSH: \$3,622,346,056 Category 3 SLOSH: \$3,622,346,056 Category 4 SLOSH: \$3,622,346,056	Frequent	54	High
Nor'Easter	Damage estimate not available	Frequent	48	High
Severe Weather	100-Year MRP: \$9,020,527 500-year MRP: \$60,091,434 Annualized: \$743,107	Frequent	48	High
Severe Winter Weather	1% GBS: \$22,021,826 5% GBS: \$110,109,130	Frequent	51	High
Tsunami	Damage estimate not available	Rare	6	Low
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$556,459	Frequent	18	Medium

Notes: GBS = General building stock; MRP = Mean return period.

- a. The general building stock valuation is based on the custom inventory generated for the County utilizing improved value.
- b. High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20
- c. Refer to Section 5.1 for further details on the loss methodology. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the estimated value of contents. Loss estimates for the flood and earthquake hazards represent both structure and contents. Potential flood loss estimates were generated using Hazus-MH and the 2015 FEMA DFIRM for the 1-percent annual chance event. For the wildfire hazard, the improved value and estimated contents of buildings located within the identified hazard zones is provided.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the City of Cape May.





Table 9.3-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 1% Flood Boundary (3)
Cape May City	1,932	1,094	\$9,819,999	7	0	1,197

Source: FEMA, 2015

Note (1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA and are current as of July 31, 2015 and are summarized by Community Name. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents claims closed by 7/31/2015.

Note (2) Total building and content losses from the claims file provided by FEMA Region 2.

Note (3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Note (4) FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

Note (5) A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Critical Facilities

Table 9.3-5. Number of Critical Facilities Located in the 1-Percent Annual Chance Flood Zone

Municipality	Facility Types																	
	Airport	Communication	County Office	EMS	Emergency Operation Center	Ferry	Fire Station	Library	Marina	Military	Municipal Hall	Place of Interest	Police Station	School	Senior Facility	Wastewater Pump	Wastewater Treatment	Well
Cape May City	0	1	0	0	0	0	1	0	3	0	0	3	1	0	0	2	0	0

Source: Cape May County

Note: EMS – Emergency Medical Services

Other Vulnerabilities Identified by Municipality

Tidal Ocean flooding on 2.3 miles of engineered beaches and beachfront streets including Beach Ave., Wilmington, New Jersey, Pittsburgh, Trenton, Baltimore, and Brooklyn Aves., also caused private property damage as well as storm water management problems.

Tidal Harbor and Back Bay flooding on Delaware, Yacht & Texas Ave., Harbor Ln., Washington & Lafayette Streets, Elmira, Venice, Bank Street, S. Jersey Ave., Perry, West Perry, Claghorn, Capehart, Congress, Windsor, & Grant Streets. Causing private property damages as well as storm water management problems.

Significant beach erosion of 2.3 miles of engineered beaches & property protection, also causing storm water management problems especially ocean front storm water outfall pipes being clogged with sand during storm causing street flooding.

Cape May Elementary School – Needs Emergency Generator and conversion to Warming Center status.

Cape May Convention Hall – Needs Emergency Generator

City is planning with New Jersey Board of Public Utilities (NJBP) and the Energy Resiliency Bank (ERB) to install Micro Grid for critical facilities in emergency situations.



9.3.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Education/Outreach and Community classification
- Self-Assessment of Capability
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the City of Cape May.

Table 9.3-6. Planning and Regulatory Tools

Tool/Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept./Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan	Yes 2-27-2009 Revised 3-13-2009	Local	Planning Board	Master Plan Reexamination
Capital Improvements Plan	No			
Floodplain Management/Basin Plan	Yes Updated annually	Local	Flood Plain Manager	Floodplain Management Plan
Stormwater Management Plan	Yes 10-18-2005	Local	City Engineer Supt. P.W.	Chapter 437 Storm water Management
Open Space Plan	Yes	Local	Engineer Planner Planning Bd. City Council	Master Plan Reexamination
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes	Local	City OEM County OEM	
Emergency Response Plan	Yes	Local	City OEM County OEM	
Post-Disaster Recovery Plan	Yes	Local	City OEM County OEM	
Transportation Plan	Yes	Local	Planning Board	Master Plan Reexamination
Strategic Recovery Planning Report	Yes	Federal (HUD); State (DCA); County; Local	CMC Board of Chosen Freeholders	CMC Strategic Recovery Planning Report – Draft, Nov. 2015 (Maser Consulting)
Other Plans:	Yes	Local	City	Plan Endorsement, Beach Management Plan, Affordable Housing, MPAP



Table 9.3-6. Planning and Regulatory Tools

Tool/Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept./Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Regulatory Capability				
Building Code	Yes	State & Local	Construction Official	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Planning Brd. Zoning Official Zoning B.A. City Council	Chapter 525 Zoning
Subdivision Ordinance	Yes	Local	Planning Brd. Const. Official Zoning Official Zoning B.A. City Council	Chapter 445 Subdivision of Land
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Const. Official Flood Plain Mgr. Planning Board Zoning B.A. City Council	Chapter 258 Flood Damage Prevention
NFIP: Cumulative Substantial Damages	Yes	Local	Const. Official Flood Plain Mgr.	Chapter 258 Flood Damage Prevention
NFIP: Freeboard	Yes	State, Local	Const. Official Flood Plain Mgr. City Council	Chapter 258 Flood Damage Prevention
Growth Management Ordinances	Yes	Local	Planning Brd. Const. Official Zoning B.A. City Council	Chapter 525 Zoning
Site Plan Review Requirements	Yes	Local	Const. Official Zoning Official Planning Brd. Zoning B.A.	Chapter 417 Site Plan Review
Stormwater Management Ordinance	Yes 10-18-2005	Local	City Engineer Supt. P.W. Planning Brd. Zoning B.A. City Council	Ord.# 48-2005 Chapter 437 Stormwater Management
Municipal Separate Storm Sewer System (MS4)	Yes	State, County Local	Department of Public Works	Chapter 437 Storm water Management
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	No			
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	Local	HPC Planning Brd. Zoning B.A. Const. Official City Council	Chapter 525-59 Design Standards



Administrative and Technical Capability

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

Table 9.3-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	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	
Maintenance Programs to Reduce Risk	Yes	City of Cape May - DPW, Water / Sewer Dept.
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		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Planning and Zoning Engineer/Planner & City Engineer
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Planning and Zoning Engineer/Planner & City Engineer
Planners or engineers with an understanding of natural hazards	Yes	Planning and Zoning Engineer/Planner & City Engineer
NFIP Floodplain Administrator	Yes	Flood Plain Mgr.
Surveyor(s)	Yes	City Engineer
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	Planning and Zoning Engineer/Planner & City Engineer
Scientist familiar with natural hazards	Yes	Consultants, Stockton College, & Others
Emergency Manager	Yes	City OEM Coordinator
Grant Writer(s)	Yes	Consultants & City of Cape May
Staff with expertise or training in benefit/cost analysis	Yes	Consultants & City of Cape May
Professionals trained in conducting damage assessments	Yes	Planning and Zoning Engineer/Planner & City Engineer

Fiscal Capability

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

Table 9.3-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
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
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No



Table 9.3-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	No
Open Space Acquisition Funding Programs	Yes
Other	No

Education/Outreach and Community Classifications

The table below summarizes education/outreach programs the community participates in and the classifications for community program available to the City of Cape May.

Table 9.3-9. Education/Outreach and Community Classifications

Program	Do you have/participate in this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	6	Oct. 1, 2013
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	May 2013
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	04	April 27, 2015
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A
Disaster/Safety Programs in/for Schools	Yes	-	-
Organizations with Mitigation Focus (advocacy group, non-government)	No	N/A	N/A
Public Education Program/Outreach (through website, social media)	Yes	-	-
Public-Private Partnerships	No	N/A	N/A

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery, and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The Community Rating System (CRS) class applies to flood insurance while the Building Code Effectiveness Grading Schedule (BCEGS) and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1,000 feet of a creditable fire hydrant and is within five road miles of a recognized fire station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule



- The ISO Mitigation online ISO’s Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of the City of Cape May’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

Table 9.3-10. Self-Assessment of Capability

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and Regulatory Capability			X
Administrative and Technical Capability			X
Fiscal Capability		X	
Community Political Capability			X
Community Resiliency Capability		X	
Capability to Integrate Mitigation into Municipal Processes and Activities			X

National Flood Insurance Program

NFIP Floodplain Administrator (FPA)

Jason Dilworth, Building Subcode Official/Flood Plain Manager, City of Cape May

Flood Vulnerability Summary

The City maintains a list of properties that have been flood damaged. This list indicates property owners interested in mitigation. The City makes Substantial Damage estimates.

One residential structure was damaged during Hurricane Sandy. This structure was substantially damaged and the property owner is interested in mitigation. FEMA grant funding will be the funding source for mitigation.

Resources

The Flood Damage Prevention Ordinance (FDPO) identifies the Building Subcode Official as the NFIP Floodplain Administrator. The floodplain administrator and his staff assume responsibilities for floodplain administration including, permit review, inspections, damage assessments, record keeping, GIS and education and outreach. Education and outreach activities include annual seminars and community outreach programs.

Currently, there are no identified barriers to running an effective mitigation program in the City. The floodplain administrator is adequately trained for floodplain management responsibilities, although additional training or opportunities for continuing education would be welcome.

Compliance History

The City is currently in good standing with the NFIP. The most recent Community Assistance Visit was in 2013.





As of August 31, 2015 there are 2,748 policies in force, insuring over \$680.5 million of property with total annual insurance premiums of over \$2.5 million. Since 1978, 1,094 claims have been paid totaling \$9,819,999 (1,338 claims total have been submitted; however, 244 claims were closed without pay).

Regulatory

The City of Cape May's floodplain regulations exceed the minimum State and FEMA requirements.

The City has a 2' foot Freeboard requirement which exceeds the States 1' foot Freeboard requirement.

The City has other local ordinances and plans and programs that support floodplain management such as the beach management program, beach vegetation management program, landscape management, Municipal Masterplan, State Planning Commission Plan Endorsement, Sustainable Jersey Getting to Resilience (GTR) Plan.

Community Rating System

The City of Cape May is currently a Class 6 community in the Community Rating System (CRS) program. The floodplain manager would attend a CRS seminar if offered locally.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

Planning

Land Use Planning: The City of Cape May has a Master Plan that was most recently revised in 2009. The Master Plan considers areas of natural hazard risk, but does not currently refer to the hazard mitigation plan. It will be referenced in the next update.

Stormwater Management: The City is a MS4 Regulated Community. The City has stormwater management plan that identifies projects, actions or initiatives to mitigate stormwater flooding.

Open Space: The City has an Open Space plan as an element in its Master Plan.

Beach Management Plan: The City's Beach Management Plan was developed in 2008 to provide a framework for cooperation among the City of Cape May (City) the New Jersey 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. Information related to natural hazard risk reduction is discussed including dune management activities.

Floodplain Management Plan: The City's Floodplain Management Plan, adopted in 2009 and updated most recently in 2012, was prepared to create a comprehensive strategy for implementing technically feasible flood mitigation activities for the City. The objectives of the floodplain management plan were developed to:

- Provide a comprehensive review of possible activities and mitigation measures so that the most appropriate solutions are used to address the hazards identified.



- Ensure that the recommended activities meet the goals and objectives of the community, do not create conflicts with other activities, and are coordinated with all to reduce the costs of implementing individual activities.
- Create easily accessible information to educate residents about the hazards, loss reduction measures, and the natural and beneficial functions of floodplains.
- Build public and political support for projects that prevent new problems, reduce losses, and protect the natural and beneficial functions of floodplains.
- Build a constituency that desires to see the plan's recommendations implemented.

The plan notes that the plan is to be coordinated with the hazard mitigation plan and that revisions to the plan may be necessary to provide consistency between the two documents.

Continuity of Operations: This information is contained as a component to the City of Cape May OEM Plan which is on file in City Hall and is available for review.

Comprehensive Emergency Management Plan: This information is contained as a component to the City of Cape May OEM Plan which is on file in City Hall and is available for review.

Post-Disaster Recovery Plan: Hazard Mitigation is addressed as an element of this plan.

Regulatory and Enforcement (Ordinances)

The City zoning and subdivision regulations consider natural hazard risk. The Planning Board and Zoning Board of Appeals have multiple sources of information available to assist in their decision-making process including the zoning code, MLUL, Floodplain Ordinance, Mater Plan and FEMA rules and regulations. The City has also adopted special land use controls designed to limit further encroachments in beach and dune areas.

Developers in the City are required to take additional actions to mitigate natural hazard risk at developments including following the City Flood Damage Assessment Ordinance.

The City's NFIP Flood Damage Prevention ordinance exceeds the minimum Federal and State NFIP regulatory requirements. The City has a 2' foot Freeboard requirement which exceeds the States 1' foot Freeboard requirement.

Operational and Administration

Land Use Planning: The City has a municipal planner responsible for preparing documents that address natural hazard risk reduction. The Planning and Zoning Board review applications to determine compliance with natural risk reduction related documents. The City's Environmental Commission also has functions related to managing natural hazard risk.

Stormwater Management: Stormwater Management functions in the community are performed by Joseph Picard, the Department of Public Works Superintendent.

Floodplain Management: Jason Dilworth, the Building Subcode Official and Floodplain Manager, performs the NFIP Floodplain Management functions.

Technical Resources: The City has staff and contracts with firms for Benefit-Cost analysis needs, Substantial Damage estimates, and grant application preparation. City staff receive training and education in support of natural hazard risk reduction; however, staff would benefit from additional training in shelter-in-place and evacuation procedures.



Other Programs: The City, in partnership with Atlantic City Electric, has vegetation management programs in place. The City has a 50-year contract commitment from the Federal Government to maintain the entire City of Cape May beachfront at least until the year 2040. The Emergency management coordinator and team have quarterly meetings to plan and discuss procedures for emergency evacuations. Drills are performed each year. The City has a Shade Tree Commission charged with the regulation, planting and care of shade and ornamental trees and shrubbery including the removal of trees or parts thereof that are dangerous to public safety. The City has a green building program for high performance buildings that may provide opportunities to coordinate with hazard mitigation efforts.

Administration: The OEM Director, Fire Chief, Police Chief and Beach Patrol Captain all have job descriptions that specifically include identifying and/or implementing efforts to reduce natural hazard risk. Staff participate in associations and organizations the support natural hazard risk reduction capabilities.

Funding

Operating Budget: The City’s operating budget contains line items for mitigation projects/activities.

Capital Improvements Budget: The City’s capital improvements budget contains mitigation-related projects.

Grants: The City has received grant funding for several projects including grants for back-up generators, an outdoor public announcement system, and purchase and relocation of vulnerable structures.

Other Funds: The City has an Open Space Fund that can be used to fiscally support hazard mitigation projects.

Education and Outreach

Citizens are informed on natural hazards through community outreach meetings presented by FEMA, NJDEP, NJ SeaGrant, and Stevens Institute of Technology, Richard Stockton University, and National Flood Insurance Program. Enhancements that would promote further public outreach education include opportunities for one-on-one consultation for property owners and government officials with federal and state hazard mitigation professionals and presentations and exhibits by private sector vendors of products that will mitigate damages from storm and natural hazard events.

9.3.6 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2010 Plan. 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 may also be found under ‘Capability Assessment’ presented previously in this annex.



Table 9.3-11. Past Mitigation Initiative Status

Initiative Number	2011 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2016 HMP Update or Discontinue)	Describe Next Step 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
CCM-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. 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.	County Engineering with support of City of Cape May where it intersects City lands	In Progress	1. Evaluated municipal properties and determined that no facilities are likely candidates for acquisition or relocation as this time. 2. 3.	Include in 2016 HMP Update	1. 2.
CCM-1b	Where appropriate, support 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. Identify facilities that are viable candidates for relocation based on cost-effectiveness versus retrofitting. Where relocation is determined to be a viable option, consider implementation of that action based on available funding.	City DPW and engineering	In Progress	1. On-going – Block 1061 Lots 52-53 2. 3. Green Acres/Blue Acres Grant(s) and local share Open Space Fund	Include in 2016 HMP Update	1. 2.
CCM-2	Continue active participation in CRS.	ACOE and NJDEP; support from City	In Progress	1. On-going – date classified by CRS was October 2013 2. 3. Local Budget	Include in 2016 HMP Update	1. Expand to include current activities to improve CRS Classification. 2.
CCM-3	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	County Engineering with City of Cape May	In Progress	1. On-going 2. 3. Local Budget	Discontinue	1. 2. This initiative is being removed from the updated mitigation strategy as it refers to activities that are a now an ongoing and normal part of municipal operations.



<u>Initiative Number</u>	<u>2011 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status (In progress, No progress, Complete)</u>	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<u>Next Step (Include in 2016 HMP Update or Discontinue)</u>	<u>Describe Next Step</u> 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
CCM-4	Strive to maintain compliance with, and good-standing in the National Flood Insurance program.	City DPW and Engineering	In Progress	1. On-going 2. 3. Local Budget	Discontinue	1. 2. This initiative is being removed from the updated mitigation strategy as it refers to activities that are a now an ongoing and normal part of municipal operations.
CCM-5	Continue to develop, enhance, and implement existing emergency plans.	City DPW and Engineering with County GIS	In Progress	1. On-going 2. 3. Local Budget	Discontinue	1. 2. This initiative is being removed from the updated mitigation strategy as it refers to activities that are a now an ongoing and normal part of municipal operations.
CCM-6	Create/enhance/ maintain mutual aid agreements with neighboring communities.	City DPW and Engineering with USACE and NJDEP	In Progress	1. On-going 2. 3. Local Budget	Discontinue	1. 2. This initiative is being removed from the updated mitigation strategy as it refers to activities that are a now an ongoing and normal part of municipal operations.
CCM-7	Support County-wide initiatives identified in Section 9.1 of the County Annex.	City DPW and Engineering	In Progress	1. On-going 2. 3. Local Budget	Include in 2016 HMP Update	1. 2.
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 ACOE and NJDEP on this previously.	County Engineering, with City of Cape May, Lower Township and City of West Cape May	In Progress	1. 5% complete – Feasibility Study authorized by USACE 2. 3. USACE and County of Cape May	Include in 2016 HMP Update	1. Eliminate Lower Township and West Cape May under the “Responsible Agency” column 2.
CCM-9 (CMC-8)	Elevate ~1.5 miles of CR-606 (Sunset Boulevard) through the South Cape May Meadows (also involves Lower Township and West Cape May).	County Engineering with the City of Cape May	No Progress	1. 2. 3.	Discontinue	1. 2. This project does not include the City of Cape May.
CCM-10	Install a cap on the existing seawall from Madison Avenue to Jackson	County Engineering with the City of Cape May	In Progress	1. 25% complete – Feasibility Study to be completed in the summer 2016. 2. 3. USACE and City of Cape May	Include in 2016 HMP Update	1. Madison Avenue to Wilmington Avenue. 2.



<u>Initiative Number</u>	<u>2011 Mitigation Action</u>	<u>Responsible Party</u>	<u>Status (In progress, No progress, Complete)</u>	<u>Describe Status</u> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g, FEMA HMGP grant, local budget)?	<u>Next Step (Include in 2016 HMP Update or Discontinue)</u>	<u>Describe Next Step</u> 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
CCM-11	Seawall repair / replacement - please see the interim initiative following	City DPW and Engineering	In Progress	1. 5% complete – Seawall improvements are on-going; 2. 3. County and City budgets.	Include in 2016 HMP Update	1. Include the County of Cape May as a “Responsible Agency.” 2.
CCM-12 (CMC-32)	Install backup power to two stormwater pump stations at Madison Avenue and Grant Street 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. Madison Avenue can be powered with a generator located at Benton Avenue. The location for a generator for Grant Street has yet to be determined.	City OEM, Police, Fire; Verizon Communications	No progress.	0% complete – County project. No plans developed for project.	Include in 2016 HMP Update	1. The responsible agency is the County of Cape May and the City of Cape May. 2.
CCM-13	Upgrade Venice Avenue pump station (increased capacity, backup power)	City along with USFW and NJDEP, Cape May Point	No progress.	0% complete. No funding for project.	Include in 2016 HMP Update	1. 2.
CCM-14	Work with County GIS to leverage recent LIDAR elevation data to identify areas that need to be bermed to prevent back bay flooding	County Engineering with municipal support	In progress.	On-going – updated 2013, next update scheduled for 2016. None County of Cape May.	Include in 2016 HMP Update.	1. 2.
CCM-15	Based on findings of previous initiative, develop and implement a program to install dikes/barriers to protect from back bay flooding	City of Cape May	In progress.	10% complete – Habor Lane bulkhead installed to FEMA levels (2014) None City Budget.	Include in 2016 HMP Update	1. 2.
CCM-16	Dune Enhancement – Continue ongoing programs of annual planting and installation of new fence	City of Cape May	In progress	On-going = community educational programs and project development with NJSea Grants and Stevens Institute. None City Budget.	Include in 2016 HMP Update	1. 2.
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.	County of Cape May and Borough of Cape May Point	No progress.	0% complete. The City of Cape May has not been invited to participate in the decisions pertaining to the controlled flooding of the meadows.	Include in 2016 HMP Update	1. 2.



Initiative Number	2011 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2016 HMP Update or Discontinue)	Describe Next Step 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
CCM-18	Encourage and work with County to install duckbill valves on County stormwater outfalls (some 9+ county owned and the City Pumping facilities on Queen Street).	County of Cape May and City of Cape May	In progress	100% complete – City outfall pipes located at Queen Street; 95% complete – County finished a \$1.3 million improvement to outfall pipes located in the City during 2015 None City budget and County Budget	Include in 2016 HMP Update	1. 2.
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 (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.	County of Cape May	In progress	10% complete – outfall pipe removed at Wilmington Avenue and piping redirected to Brooklyn Avenue None County Budget	Include in 2016 HMP Update	1. 2.
CCM-20	Elevation of roadways – determine elevations and causes of flooding on Elmira Street and Yacht Avenue and address	City of Cape May	In progress	50% complete – Yacht Avenue was raised in 2010/2011. None City Budget	Include in 2016 HMP Update	1. Remove Yacht Avenue 2.
CCM-21	Implement a reverse 911 system in the City	City of Cape May	Complete	100% complete None City Budget	Include in 2016 HMP Update	Maintain for future
CCM-22	Continue to maintain the City of Cape May Beach Management Plan for the Protection of Federally and State-Listed Species (March 2008). All of the aforementioned beach-related projects have bearing on this Beach Management Plan. Work with Cape May Point who has a similar Plan.	City of Cape May, NJDEP, and USFW	100% complete	100% complete – City adopted an updated Beach Management Plan in 2008 None City Budget	Include in 2016 HMP Update	Maintain for future
CCM-23 (CMC-57)	Upgrade stormwater drains and outfalls along Beach Drive (CR603) in Cape May City	City of Cape May and County of Cape May	In progress	On-going – stormwater drains and pipes are upgraded during street and utility improvement projects – 1300 Block of Beach Avenue (2014) and from Howard Street to Ocean Street (2012), and Gurney Street (2014); Queen Street outfall pipes were replaced in (2012), and the County	Include in 2016 HMP Update	Maintain for future



Initiative Number	2011 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2016 HMP Update or Discontinue)	Describe Next Step 1. If including action in the 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
				replaced/repared seven (7) outfall pipes (2015) None City budget and County Budget		
CCM-24	Installation of back-up generators – water wells 5 and 7.	City of Cape May		1.USDA Grant/Loan and City of Cape May 2.100% complete.	Discontinue	
CCM-25	Installation of a back-up generator for the Cape May City Elementary School.	City of Cape May		1.FEMA OEM Grant and City of Cape May 2.15% complete – planning and design	Include in 2016 HMP Update	
CCM-26	Installation of a new water well (#8) and back-up generator.	City of Cape May		1.City of Cape May and NJEIT Grant/Loan applied for 2.20% complete – design and permitting	Include in 2016 HMP Update	
CCM-27	CHP Micro Grid for critical City facilities.	City of Cape May		1.City of Cape May and the NJBPU Resiliency Bank 2.10% complete - planning	Include in 2016 HMP Update	Note: On May 2016 meeting agenda with NJBPU for project approval. This project is designed to protect critical City facilities and critical private facilities including the Victorian Towers Senior Citizen Apartments facility, Cape May Housing Authority and Cape May Elementary School.
CCM-28	Siren Warning System	City of Cape May		1.City of Cape May 2.Two of five have been replaced (2015)	Include in 2016 HMP Update	
CCM-29	Outdoor public announcement system on beachfront.	City of Cape May		1. City of Cape May and FEMA Grant 2.100% complete, on-going maintenance	Discontinue	



Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The City has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 Plan:

1. USACE 7 NJDEP Oceanfront Beach Replenishment in 2011, 2012 and 2014
2. 10- Oceanfront Outfall Pipes & Cradles were repaired, replaced and extended with more durable materials in 2015-2015
3. Installed Emergency Public Address System on 2.3 Miles of oceanfront in 2013-2016.
4. Purchased low lying commercial and residential properties in flood prone area on Lafayette Street for open space in 2013.
5. Installed generator on Wells #5 & #6 for City Water System in 2015.

Proposed Hazard Mitigation Initiatives for the Plan Update

The City participated in a mitigation action workshop in February 2016 and was provided 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).

Table 9.3-12 summarizes the comprehensive-range of specific mitigation initiatives the City would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six 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, fourteen 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 your actions as ‘High,’ ‘Medium,’ or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.3-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.3-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures (Note 1)	Hazard(s) Mitigated (Note 2)	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
CCM-1a (former CCM-11)	<p>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 acquisition or relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.</p> <p>The City has done extensive public education and outreach regarding available mitigation opportunities, including informing Cape May City RL/SRL property owners of workshops on April 9, 2016 (in Ocean City) and again on April 16, 2016 (in Wildwood) to learn more about current and future opportunities to mitigate their flood-prone properties. The City has formally been an active participant in the “Enhanced RL/SRL Initiative” within this plan update process, as described further in Section 6.</p> <p>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.</p>											
	See above.	Existing	Coastal Storm, Flood, Severe Weather	1, 2, 4, 6	City DPW and Engineering	High	High	See above.	Long-term DOF	Medium-High*	EAP, SIP	PI, PP
CCM-1b (former CCM-1b)	<p>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. Identify facilities that are viable candidates for acquisition/relocation based on cost-effectiveness versus retrofitting. Where acquisition/relocation is determined to be a viable option, consider implementation of that action based on available funding.</p> <p>The City has done extensive public education and outreach regarding available mitigation opportunities, including informing Cape May City RL/SRL property owners of workshops on April 9, 2016 (in Ocean City) and again on April 16, 2016 (in Wildwood) to learn more about current and future opportunities to mitigate their flood-prone properties. The City has formally been an active participant in the “Enhanced RL/SRL Initiative” within this plan update process, as described further in Section 6.</p> <p>Funding sources: Green Acres/Blue Acres Grant(s) and local share Open Space Fund; 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.</p>											
	See above.	Existing	Coastal Storm, Flood, Severe Weather	1, 2, 4, 6	City DPW and engineering	High	High	See above.	Long-term DOF	Medium-High*	SIP	SP
CCM-2 (former CCM-2)	<p>Continue active participation in CRS and work to improve CRS Classification through the following activities:</p> <ul style="list-style-type: none"> • Program for Public Information (PPI) – working with Atlantic Cape Coastal Coalition • Atlantic Cape Coastal Coalition Watershed Management Plan (subsequent to approval of Sea Isle City Watershed Management Plan) • Website Enhancements • Capital Hazard Mitigation Projects (e.g. seawall elevation, rip-rap on harbor front) • Private property owner mitigation support (Enhanced RL/SRL Initiative) • Periodic beach replenishment projects 											
	See above.	New & Existing	Flood	1, 2, 6	ACOE and NJDEP; support from City	Medium	Low - Medium	Local Budget	Short	High	LPR	PR



Table 9.3-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures (Note 1)	Hazard(s) Mitigated (Note 2)	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
CCM-3 (former CCM-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex.	New & Existing	All Hazards	1 through 6	City DPW and Engineering	Medium-High	Low - High	Existing programs and grant funding where applicable	Ongoing – Long-term depending on initiative	Medium-High (dependent)	LPR, EAP	PR, PP, PI, NR, ES, SP
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 ACOE and NJDEP on this previously.	Existing	Coastal Flooding, Coastal Erosion	1, 3, 4, 5, 6	County Engineering, with City of Cape May	High	High	ACOE, State	Long-term DOF; Feasibility Study authorized by USACE	Medium	SIP, NSP	PP, NR, SP
CCM-5 (former CCM-10)	Install a cap on the existing seawall from Madison Avenue to Wilmington Avenue.	Existing	Coastal Storms, Coastal Erosion, Severe Weather, Flooding, Tsunami	1, 3, 4, 5	County Engineering with the City of Cape May	High	Medium - High	Local funding (request to City Council upcoming)	Short-term DOF; 25% complete – Feasibility Study to be completed in summer 2016	High	SIP	SP
CCM-6 (former CCM-11)	Seawall repair / replacement - please see the interim initiative following	Existing	Coastal Storms, Coastal Erosion, Severe Weather, Flooding, Tsunami	1, 3, 4, 5	City DPW and Engineering, County of Cape May	High	High	USACE, NJDEP, HMA Grant Funding with local funding	Long-term DOF	Medium	SIP	SP
CCM-7 (former CCM-12 (CMC-32)	Install backup power to two stormwater pump stations at Madison Avenue and Grant Street in Cape May City – County led project. 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. Madison Avenue can be powered with a generator located at Benton Avenue. The location for a generator for Grant Street has yet to be determined.											
	See above.	Existing	Coastal Storms, Severe Weather, Flooding	1, 3, 4, 6	County of Cape May, as supported by the City	High	Low (for City)	County Funded	Long-term DOF	High	SIP	PR, PP
CCM-8 (former	Upgrade Venice Avenue pump station (increased capacity, backup power)	Existing	Coastal Storms, Severe	1, 3, 4	City along with USFW and NJDEP,	High	High	Local Budgets with HMA grants	Long-term DOF	Medium	SIP	PP



Table 9.3-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures (Note 1)	Hazard(s) Mitigated (Note 2)	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
CCM-13)			Weather, Flooding		Cape May Point			where applicable				
CCM-9 (former CCM-14)	Work with County GIS to leverage recent LIDAR elevation data to identify areas that need to be bermed to prevent back bay flooding	N/A	Coastal Storms, Severe Weather, Flooding	1, 3, 4, 6	County Engineering with municipal support	Medium	Low - Medium	Local and County budgets	Ongoing – updated 2013; next updated scheduled for 2016	High	SIP	PR
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	N/A	Coastal Storms, Coastal Erosion, Severe Weather, Flooding, Tsunami	1, 4	City of Cape May	High	High	Local budgets with USACE, NJDEP and HMA grants as applicable	Ongoing; Long-term DOF. Harbor Lane bulkheaded 2014.	Medium	SIP	SP
CCM-11 (former CCM-16)	Dune Enhancement – Continue ongoing programs of annual planting and installation of new fence	Existing	Coastal Storms, Coastal Erosion, Severe Weather, Flooding	1, 3, 5	City of Cape May	Medium	Low - Medium	Local Budgets	Ongoing - community educational programs and project development with NJSea Grants and Stevens Institute.	High	NSP, EAP	NR, PI
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. To date, the City of Cape May has not been invited to participate in the decisions pertaining to the controlled flooding of the meadows.											
	See above.	N/A	Coastal Storms, Severe Weather, Flooding	1, 3, 4, 6	County of Cape May and Borough of Cape May Point	High	High	County and local budgets with HMA grants as applicable	Short-term DOF	Medium	SIP	PP
CCM-13 (former CCM-18)	Continue to encourage and work with County to install duckbill valves on County stormwater outfalls (some 9+ county owned and the City Pumping facilities on Queen Street).	Existing	Coastal Storms, Severe Weather, Flooding	1, 3, 4, 6	County of Cape May and City of Cape May	High	High	County and local budgets with HMA grants as applicable	Ongoing; Short-term DOF	Medium	SIP	PP



Table 9.3-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures (Note 1)	Hazard(s) Mitigated (Note 2)	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
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 (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.											
	See above.	Existing	Coastal Storms, Severe Weather, Flooding	1, 3, 5	County of Cape May	High	High	County and local budgets with HMA grants as applicable	Short-term DOF; 10% complete	Medium	SIP	PR, PP
CCM-15 (former CCM-20)	Roadway Elevation -- determine elevation and causes of flooding on Elmira Street and address	Existing	Coastal Storms, Coastal Erosion, Severe Weather, Flooding	1, 3, 4, 6	City of Cape May	High	High	County and local budgets with HMA funding	Long-term DOF	Medium	SIP	SP
CCM-16 (former CCM-21)	Maintain the reverse 911 system in the City	N/A	All Hazards	1, 3, 4, 5	City of Cape May	High	Medium (in 2009 City Budget)	Local Budgets	Ongoing for maintenance of system	High	EAP	ES
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). All of the aforementioned beach-related projects have bearing on this Beach Management Plan. Continue to work with Cape May Point who has a similar Plan.											
	See above.	N/A	All Hazards	1, 5, 6	City of Cape May, NJDEP, and USFW	High	High	Local along with NJDEP	Ongoing	High	NSP	NR
CCM-18 (former CCM-23 (CMC-57)	Maintain stormwater drains and outfalls along Beach Drive (CR603) in Cape May City	Existing	Coastal Storms, Severe Weather, Flooding	1, 3, 4	City of Cape May and County of Cape May	High	High	HMA Grants, County and Local Funding	Short-term	High	SIP	PP, SP
CCM-19 (former CCM-24)	Installation of back-up generators – water wells 5 and 7	Existing	All Hazards	1, 3, 4	City of Cape May	High	High	Local	Short	High	SIP	ES
CCM-20 (former CCM-25)	Installation of a back-up generator for the Cape May City Elementary School.	New	All	1, 3, 4, 6	City of Cape May	High	~\$300K	NJBPU (Energy Savings Improvement Program); FEMA Sandy HMGP	Ongoing-15% complete (planning and design)	High	SIP	ES



Table 9.3-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures (Note 1)	Hazard(s) Mitigated (Note 2)	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
								Grant (\$100K), Local				
CCM-21 (former CCM-26)	Installation of a new water well (#8) and back-up generator	New	All	1, 3, 4	City of Cape May	High	High	City of Cape May and NJEIT Grant/Loan applied for	Ongoing-20% complete (design and permitting)	High	SIP	ES
CCM-22 (former CCM-27)	CHP Micro Grid Project to protect critical City facilities and critical private facilities including the Victorian Towers Senior Citizen Apartments facility, Cape May Housing Authority and Cape May Elementary School.	New	All	1, 3, 4, 6	City of Cape May, BPU	High	High	NJBPU, Energy Resiliency Bank, Local	Ongoing-10% complete (planning); on May 2016 meeting agenda with NJBPU for project approval.	High	SIP	PP, ES
CCM-23 (former CCM-28)	Siren Warning System	Existing	Flooding	1, 2	City of Cape May	Medium	Medium	City of Cape May	Ongoing – 2 of 5 have been replaced	Medium	EAP	ES, PI
CCM-24	Continue to maintain the outdoor public announcement system on beachfront.	Existing	Storms, Flooding	1, 2	City of Cape May	Medium	Medium	City of Cape May and FEMA Grant	Installation of system complete; ongoing maintenance	Medium	EAP	ES, PI
CCM-25	Integrate the Hazard Mitigation Plan with the Master Plan.	New & Existing	All Hazards	All Goals	Cape May City Planning Board	High	Medium	Local, Grant	Short	High	LPR EAP	PR PI
CCM-26	Acquire Sewell Point wetlands (from Mater Plan)	Existing	Flooding	5	City of Cape May, DEP, ALS	High	High	Federal, State, County, Local	Long	High	LPR NSP	PR PP NR
CCM-27	Maintain current beach replenishment and dune erosion protection measures as they are essential to safeguard oceanfront and harbor front	New & Existing	All Hazards	1, 5	City of Cape May, ACE, DEP	High	High	Local, ACE, DEP	High	High	SIP NSP	PR PP NR SP PI





Table 9.3-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures (Note 1)	Hazard(s) Mitigated (Note 2)	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	land uses (from Master Plan)											
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)	New & Existing	Flood	5	City of Cape May, NJDEP, JCPL, NJEPA	High	High	City of Cape May, NJDEP, EPA, County, JCPL	Short	High	LPR NSP EAP	PR PP PI NR SP
CCM-29	Continue to perform storm drain maintenance twice a year (from Floodplain Management Plan)	Existing	Flooding, Storms	1, 4	City of Cape May, County	High	Low	City of Cape May, County	Ongoing	High	LPR EAP	PR PI
CCM-30	Continue quarterly emergency management team meetings and perform annual drills.	Existing	All Hazards	4	City of Cape May, County	High	Low	City of Cape May, State	Ongoing	High	LPR EAP	PR PI ES
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.	Existing	All hazards resulting in loss of electricity	1, 3, 4	City of Cape May	High	High	NJBPU, FEMA, Local	Long Term DOF	High	EM*	ES

Notes:

Not all acronyms and abbreviations defined below are included in the table.

(1) Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

(2) While Climate Change and Sea Level rise are not specifically identified as “hazards mitigated” in this table, it is recognized that climate change and sea level rise may exacerbate/amplify the risk of the following identified hazards: Climate Change – Coastal Erosion, Flood Coastal Storms (hurricane, tropical storms, Nor’Easters), Severe Weather, Severe Winter Weather, Wildfire; Sea Level Rise – Coastal Erosion, Flood Coastal Storms (hurricane, tropical storms, Nor’Easters), Tsunami.

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
 PDM Pre-Disaster Mitigation Grant Program

Timeline:

Short 1 to 5 years
 Long Term 5 years or greater
 OG On-going program





Acronyms and Abbreviations:

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:

RFC	Repetitive Flood Claims Grant Program (discontinued)
SRL	Severe Repetitive Loss Grant Program (discontinued)

Timeline:

DOF Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

- Low Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
- Medium Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- High Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

- Low Long-term benefits of the project are difficult to quantify in the short term.
- Medium Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
- High Project will have an immediate impact on the reduction of risk exposure to life and property.

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 also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities
- Emergency Management (EM) – These actions are identified as an emergency management activity; however, they are not necessarily “mitigation”

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. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.





Table 9.3-13. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	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
CCM-1a (former CCM-11)	Property Mitigation Support – Retrofit	1	1	1	1	1	0	0	0	1	1	1	1	1	0	10	Medium-High*
CCM-1b (former CCM-1b)	Property Mitigation Support – Acquisition/Relocation	1	1	1	1	0	0	0	0	1	1	1	1	1	0	9	Medium-High*
CCM-2 (former CCM-2)	Continue and enhance participation in CRS.	1	1	1	1	1	0	0	1	1	0	1	1	1	1	11	High
CCM-3 (former CCM-7)	Support County-wide initiatives identified in Section 9.1 of the County Annex.	1	1	0	1	0	1	0	0	1	0	1	1	1	1	9	Medium-High (dependent)
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 ACOE and NJDEP on this previously.	1	1	1	0	1	0	0	0	1	1	1	0	1	1	9	Medium
CCM-5 (former CCM-10)	Install a cap on the existing seawall from Madison Avenue to Wilmington Avenue	1	1	1	0	1	1	0	0	1	1	1	0	1	1	10	High
CCM-6 (former CCM-11)	Seawall repair / replacement - please see the interim initiative following	0	1	1	0	1	1	0	0	1	1	1	0	1	1	9	Medium
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.	0	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
CCM-8 (former CCM-13)	Upgrade Venice Avenue pump station (increased capacity, backup power)	0	1	0	1	1	1	0	0	1	1	1	1	1	1	10	Medium
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	0	1	1	1	1	1	1	0	1	1	1	1	1	1	12	High
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	0	1	1	1	1	0	0	0	1	1	1	1	1	1	10	Medium
CCM-11 (former CCM-16)	Dune Enhancement – Continue ongoing programs of annual planting and installation of new fence	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High



Table 9.3-13. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	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
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.	0	1	1	1	1	-1	1	1	1	0	1	0	1	1	9	Medium
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).	0	1	1	1	1	0	1	0	1	1	1	0	1	1	10	Medium
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.	0	1	1	1	1	0	1	0	1	1	1	0	1	1	10	Medium
CCM-15 (former CCM-20)	Elevation of roadways – determine elevations and causes of flooding on Elmira Street	0	1	0	0	1	1	1	1	1	1	1	1	1	1	11	Medium
CCM-16 (former CCM-21)	Maintain the reverse 911 system in the City	1	0	1	1	1	1	1	0	1	1	1	1	1	1	12	High
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).	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
CCM-18 (former CCM-23 (CMC-57)	Maintain storm water drains and outfalls along Beach Drive (CR603) in Cape May City	1	1	1	0	1	0	0	1	1	1	1	0	1	1	10	High
CCM-19 (former CCM-24)	Installation of back-up generators – water wells 5 and 7	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
CCM-20 (former CCM-25)	Installation of a back-up generator for the Cape May City Elementary School	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
CCM-21 (former CCM-26)	Installation of a new water well (#8) and back-up generator	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
CCM-22 (former CCM-27)	CHP Micro Grid for critical City facilities	1	1	0	0	1	1	1	0	1	1	1	1	1	1	11	High
CCM-23 (former CCM-28)	Siren Warning System	1	0	1	1	1	1	0	0	1	1	1	1	1	1	11	Medium
CCM-24	Outdoor public announcement system on beachfront	1	0	1	1	1	1	0	0	1	1	1	1	1	1	11	Medium
CCM-25	Integrate the Hazard Mitigation Plan with the Master Plan.	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13	High



Table 9.3-13. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	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
CCM-26	Acquire Sewell Point wetlands (from Mater Plan)	0	1	1	1	1	0	0	1	1	1	1	1	1	1	11	High
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)	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
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)	0	1	1	1	1	0	1	1	1	1	1	1	1	1	12	High
CCM-29	Continue to perform storm drain maintenance twice a year (from Floodplain Management Plan)	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
CCM-30	Continue quarterly emergency management team meetings and perform annual drills.	1	0	1	1	1	1	1	0	1	1	1	1	1	1	12	High
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.	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions. Where the community has determined that the original priority ranking for “carry forward” initiatives remains valid, the earlier priority ranking is indicated on the prioritization table, however the 2016 criteria ratings are indicated with a null “-” marking.

* The municipality recognizes that the mitigation of RL/SRL priorities is a Federal and State priority despite the fact that limited local resources and authority limit the municipality’s ability to implement this project.



9.3.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.3.8 Hazard Area Extent and Location

Hazard area extent and location maps have been 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 considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the City of Cape May has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.3.9 Additional Comments

None at this time.



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

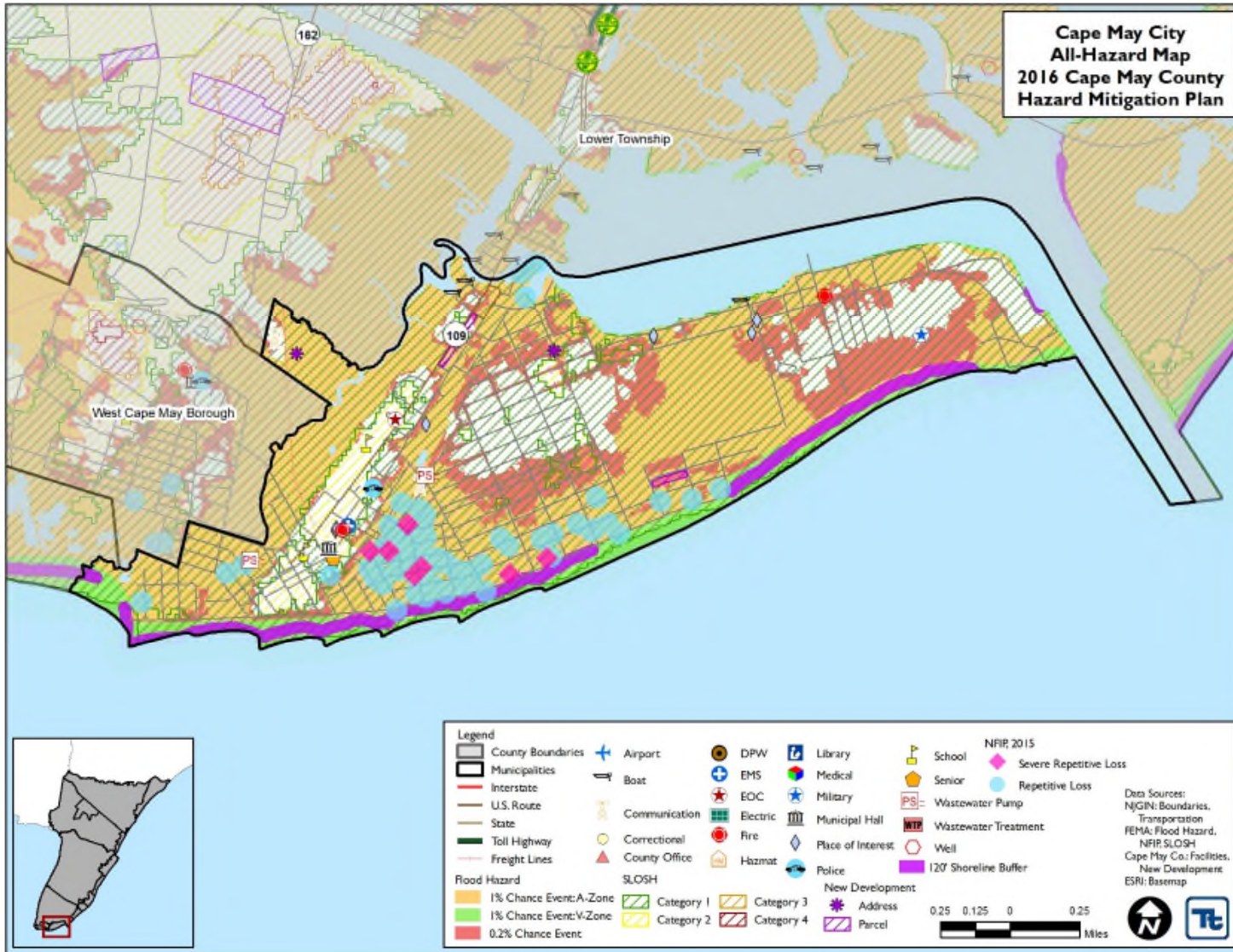




Figure 9.3-2. City of Cape May Hazard Area Extent and Location Map 2

