9.12 Township of Upper

This section presents the jurisdictional annex for the Township of Upper.

9.12.1 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
Scott Morgan 2100 Tuckahoe Road, Petersburg, NJ 08270 Mail: PO Box 205, Tuckahoe, NJ 08250 Phone: (609) 513-2740 Email: smorgan@uppertownship.com	Paul Dietrich 2100 Tuckahoe Road, Petersburg, NJ 08270 Mail: PO Box 205, Tuckahoe, NJ 08250 Phone : 609-628-2011 ext. 244 Email: Engineer@uppertownship.com

9.12.2 Municipal 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 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 Bureau, the township has a total area of 68.7 square miles, with 62.1 square miles of it land and 6.5 square miles of it (9.5-percent) water. As of July 1, 2014 there were estimated to be 12,113 people residing in the Township.

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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 9.2.8 of this annex, which illustrates the hazard areas along with the location of potential new development.

Table 9.12-1. 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						
Osprey Cove	Res.	110	2058 Rt-US9 So	BL 561 Lot 25	n/a	Mobile Home Park started construction 2015
Meghan Lane Extension	Res	23	Meghan Lane	BL 453 Lot 240	Fire Hazard	Residential subdivision
Known or Anticipated Development in the Next Five (5) Years						
Heritage Acres	Res	133	550 Tuckahoe Rd	BL 638 Lots 15.01 & 15.02	n/a	Mobile Home Park

** Only location-specific hazard zones or vulnerabilities identified.*

9.12.3 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 9.12-2. 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	Storm cleanup, $22,000 Beach damage rolled into DR-1954
February 5-6, 2010	Severe Winter Storm and Snowstorm (blizzard)	DR-1889	Yes	Snow Removal, $62,000 Debris Removal, $129,000
March/April 2010	Flooding	DR-1897	Yes	Debris Removal, $7,000 Beach Damage, rolled into DR-1954
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	Snow Removal, $47,000 Beach Damage, $3,430,000
August 27-28, 2011	Hurricane Irene	DR-4021	Yes	Debris Removal, $35,000 Emergency Prep, $7,000
October 28, 2012	Hurricane Sandy	DR-4086	Yes	Debris Removal, Emergency Prep., Emergency Shelter, Beach Damage, $3,000,000

9.12.4 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 Township of Upper. 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 Township of Upper.

Table 9.12-3. 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]

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Township of Upper.

Table 9.12-4. 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)
Upper Township	519	354	$8,712,666	17	2	337

Source: FEMA Region 2, 2015

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of July 31, 2015. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 7/31/15.

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

(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.

Notes: 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.
A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

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Critical Facilities

Table 9.12-5. 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
Upper Township	0	1	0	0	0	0	1	0	2	0	0	1	0	0	0	0	0	0

Source: Cape May County
EMS – Emergency Medical Services

Other Vulnerabilities Identified by Municipality

Sections of the Garden State Parkway, Tuckahoe Road (CR-631) @ Cedar Swamp Creek, Roosevelt Blvd. (CR-623) east of the Garden State Parkway and State Highway Rt-50 @ Cedar Swamp Creek flood and become impassable during severe flooding events and limit and/or prevent evacuation of the Township that are along the Rt-US9 corridor.

The New Jersey Beach Profile Network (NJBPN) was authorized by the New Jersey Department of Environmental Protection (NJDEP) and established by the Richard Stockton College Coastal Research Center (CRC) in 1986. The NJBPN monitors (by survey sites) the shoreline conditions along New Jersey's coast. In Cape May County, there are 31 survey sites, with one located in Upper Township. Each year, the NJBPN completes an annual report for the counties where survey sites are located. The reports provide a summary of beach changes, a review of any major beach restoration or hard structure projects, and a discussion of issues and pending project work in the County. For details regarding the annual reports for Cape May County and its municipalities, please refer to: http://intraweb.stockton.edu/eyos/page.cfm?siteID=149&pageID=9

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9.12.12 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 Township of Upper.

Table 9.12-6. 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	Local	Planning Board; Planning Office	Upper Township 2011 Master Plan Reexamination
Capital Improvements Plan	No	N/A	N/A	
Floodplain Management/Basin Plan	Yes	Federal, State, Local	Engineering	2010 Hazard Mitigation Plan
Stormwater Management Plan	Yes	Federal, State, Local	Engineering	Element in the 2005 Master Plan
Open Space Plan	Yes	Local	Department	Conservation Plan Element in 2011 Master Plan
Stream Corridor Management Plan	No	N/A	N/A	
Watershed Management or Protection Plan	No	N/A	N/A	
Economic Development Plan	No	N/A	N/A	
Comprehensive Emergency Management Plan	No	N/A	N/A	
Emergency Operations Plan	Yes	State, County, Local	OEM	Emergency Operations Plan
Post-Disaster Recovery Plan	No	N/A	N/A	
Transportation Plan	Yes	State, County, Local	Public Works	Element in 1993 Master Plan; Route 9 Transportation Study
Strategic Recovery Planning Report	No	N/A	N/A	
Other Plans:	Yes	State, Local	Engineering	Upper Township "Getting to Resilience" Recommendations Report
Regulatory Capability				
Building Code	Yes	State, Local	Construction	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Township Committee; Planning Office	Chapter 20: Zoning of Revised General Ordinance
Subdivision Ordinance	Yes	Local	Township Committee; Planning Office	Chapter 19: Land Subdivision and Site Plan of Revised General Ordinance
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Engineering; Township Committee	Chapter 18: Flood Damage Control of Revised General Ordinance
NFIP: Cumulative Substantial Damages	Yes	Local	Engineering/ Construction?	Chapter 18: Flood Damage Control of Revised General Ordinance
NFIP: Freeboard	Yes	State, Local	Engineering/ Construction	Chapter 18: Flood Damage Control of Revised General Ordinance; State mandated BFE+1 foot
Growth Management Ordinances	No	N/A	N/A	

Table 9.12-6. 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.)
Site Plan Review Requirements	Yes	Local	Planning Board; Zoning Board; Planning Office	Chapter 19: Land Subdivision and Site Plan of Revised General Ordinance
Stormwater Management Ordinance	Yes	Local	Engineering	Chapter 19: Land Subdivision and Site Plan of Revised General Ordinance
Municipal Separate Storm Sewer System (MS4)	Yes	Federal, State, Local	Public Works, Engineering	Chapter 24: Solid Waste and Recyclables of Revised General Ordinance; Chapter 14: Water and Sewer of Revised General Ordinance
Natural Hazard Ordinance	No	N/A	N/A	
Post-Disaster Recovery Ordinance	No	N/A	N/A	
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	Local	Township Committee	Chapter 3.4 Dune Regulations Revised General Chapter 17: Construction of Bulkheads of Revised General Ordinances

Administrative and Technical Capability

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

Table 9.12-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	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	
Maintenance Programs to Reduce Risk	Yes	Public Works/Engineering
Mutual Aid Agreements	Yes	Ocean City
Technical/Staffing Capability		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Planning Office/Public Works
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Construction/Engineering/Public Works
Planners or engineers with an understanding of natural hazards	Yes	Engineering
NFIP Floodplain Administrator	Yes	Engineering & Construction Official

Table 9.12-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/Agency/Position
Surveyor(s)	No	
Personnel skilled or trained in GIS and/or Hazus-MH applications	Yes	Engineering
Scientist familiar with natural hazards	Yes	Consultant – Stockton Coastal Resource Center
Emergency Manager	Yes	OEM
Grant Writer(s)	No	
Staff with expertise or training in benefit/cost analysis	No	
Professionals trained in conducting damage assessments	Yes	Engineering

Fiscal Capability

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

Table 9.12-8. 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	No
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	Yes
Open Space Acquisition Funding Programs	Yes – County Program
Other	

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 Township of Upper.

Table 9.12-9. 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	10/1/13
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	4 Residence 3 Commercial	3/25/14
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	District 1 – 6 District 2 – 8B-10 District 3 – 3/3Y District 4 – 5/5Y	

Table 9.12-9. Education/Outreach and Community Classifications

Program	Do you have/participate in this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Storm Ready	No	N/A	Application in process
Firewise	No	N/A	N/A
Disaster/Safety Programs in/for Schools	No	-	-
Organizations with Mitigation Focus (advocacy group, non-government)	No	-	-
Public Education Program/Outreach (through website, social media)	Yes	-	-
Public-Private Partnerships	No		

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/

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Self-Assessment of Capability

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

Table 9.12-10. **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	Limited staff		
Fiscal Capability			X
Community Political Capability			X
Community Resiliency Capability		X	

Table 9.12-10. **Self-Assessment of Capability**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Capability to Integrate Mitigation into Municipal Processes and Activities		X	

National Flood Insurance Program

NFIP Floodplain Administrator (FPA)

Paul Dietrich, Municipal Engineer & CRS Coordinator

Flood Vulnerability Summary

Approximately 50 percent of the Township's lands are in the floodplain.

The Township does not maintain a list of flood damaged properties. The total number of properties damaged during Hurricane Sandy is unknown, however there were 32 properties that were determined to be substantially damaged. Between one and fifteen of the property owners are working with ICC Funds or the REM program. Many of the remaining properties are ineligible for these funds as they are second homes.

Resources

The Flood Damage Prevention Ordinance (FDPO) identifies the Municipal Engineer as the NFIP Floodplain Admistrator. The floodplain administrator is the sole person assuming repsonsibilities for floodplain admististration including, permit review, inspections, damage assessments, record-keeping, GIS, education and outreach. Additionally, the Township performs site inspections to assist property owners with localized drainage issues and flood map ID, and printing services.

As part of the Township's education and outreach annual mailings are sent to properties in the special flood hazard areas and repetive loss areas. Additional information is also avaialble on the Township website. The public library in Petersburg and Strathmere maintain FEMA publications regarding flood protection. When people call or email the Township information is provided to them on their FIRM zone and requirements for flood insurance.

The Township's floodplain management program would benefit from additional staffing and training in benefit-cost analysis. The floodplain administrtator would welcome additional training opportunities.

Compliance History

The Township is currently in good standing with the NFIP. The most recent Community Assistance Visit was in June of 2010 and the next visit is scheduled for March 16, 2016.

Regulatory

The Township of Upper's floodplain regulations exceed the minimum State and FEMA requirements. The Township's NFIP FDPO exceed the minimum requirements through a lower cumulative substantial damage and substantial improvements threshold (40 percent) and a provision requiring one foot of freeboard measured to the lowest horizontal structural member in A and V zones (provides two feet of freeboard in A-zones).

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Community Rating System

The Township of Upper is currently a Class 6 community in the Community Rating System (CRS) program.

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 Township of Upper has a Master Plan that was most recently revised in 2011. The Master Plan does not consider areas of natural hazard risk, nor does it refer to the hazard mitigation plan.

Stormwater Management: The Township is a MS4 Regulated Community, but does not have a stormwater management plan that identifies projects, actions or initiatives to mitigate stormwater flooding.

Continuity of Operations: The Township has a Continuity of Operations Plan that will serve to protect the local government and operations from natural hazard disruptions

Comprehensive Emergency Management Plan: The Township has Comprehensive Emergency Management Plan.

Getting to Resilience: This questionnaire is broken into five sections: risk and vulnerability assessments, public engagement, planning integration, disaster preparedness and recovery, and hazard mitigation implementation. The questionnaire was answered by a wide array of municipal officials and supplemented by in-person discussions. From this information, a series of recommendations to increase resiliency were offered.

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Regulatory and Enforcement (Ordinances)

The Township has multiple chapters pertaining to the mitigation of hazards. These ordinances include the Flood Damage Prevention Chapter, Stormwater Management, Building Code and others. The Planning and Zoning Board uses the flood area designations to guide their decisions with respect to natural risk management. Site plan reviews and subdivisions in the Township are required to underground utilities and reduce stormwater runoff.

Operational and Administration

Land Use Planning: The Planning Board and Zoning Board of Appeals review projects for compliance with flood hazard and stormwater ordinances.

Stormwater Management: Stormwater Management functions in the community are performed by the Municipal Engineer.

Floodplain Management: The Municipal Engineer performs the NFIP Floodplain Management functions.

Technical Resources: The Municipal Engineer is able to perform Substantial Damage estimates. Some staff have experience in preparing applications for mitigation projects, but additional training and technical support is needed. The Municipal Engineer receives training and education in support of natural hazard risk reduction.

Other Programs: The Township is in the process of developing a Forestry Management Plan.

Administration: The Municipal Engineer participate in associations and organizations the support natural hazard risk reduction capabilities including the Coastal Coalition and the New Jersey Association of Floodplain Managers.

Funding

Operating Budget: The Township's operating budget does not contain line items for mitigation projects/activities.

Capital Improvements Budget: The Township's capital improvements budget does not include mitigation-related projects.

Grants: The Township has received grant funding for projects including a hazard mitigation grant for $100K for emergency generators for EMS building.

Other Funds: The Township is able to adopt capital improvement bonds and has access to a County-run open space fund/

Education and Outreach

The Township website has information on flood hazards and stormwater management. Messages on these topics are also sent to property owners. OEM provides training for Community Emergency Response Teams.

9.12.13 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.

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Table 9.12-11. Past Mitigation Initiative Status

Initiative Number	2010 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 2015 HMP? 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.
TU-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.	Township (likely through NFIP Floodplain Administrator)	No Progress	1. No prospective homeowners at this time to relocate or purchase their home and funding.	Include in 2015 HMP	1. No change 2.
TU-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.	Township	No Progress	1. No prospective homeowners at this time to relocate or purchase their home and funding.	Include in 2015 HMP	1. No change. 2.

Initiative Number	2010 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 2015 HMP? 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.
TU-2 (CMC-2)	Consider participation in incentive-based program CRS.	Township	In Progress	1. We have applied to CRS program and are rated Class 6. 2. 3.	Include in 2015 HMP	1. Work on submitting documentation to achieve Class 5 2.
TU-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)	In Progress	1. We will continue to support the implementation and updating of the All-Hazard Plan. 2. 3.	Include in 2015 HMP	1. 2.
TU-4	Strive to maintain compliance with, and good-standing in the National Flood Insurance program.	Municipality (likely through NFIP Floodplain Administrator)	In Progress	1. We are meeting NFIP requirements. We will continue to maintain compliance and good-standing in the NFIP. 2. 3.	Include in 2015 HMP	1. No change. 2.
TU-5	Continue to develop, enhance, and implement existing emergency plans.	Municipal Emergency Manager with support from County OEM and NJ OEM	In Progress	1. We will continue to develop, enhance and implement existing emergency plans. 2. 3.	Include in 2015 HMP	1. No change. 2.
TU-6	Create/enhance/ maintain mutual aid agreements with neighboring communities.	Township	In Progress	1. We will continue to maintain mutual aid agreements with neighboring communities. 2. 3.	Include in 2015 HMP	1. No change. 2.

Initiative Number	2010 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 2015 HMP? 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.
TU-7	Support County-wide initiatives identified in Section 9.1 of the County Annex.	Local departments (as applicable for specific initiative)	In Progress	1. We will continue to support County-wide initiatives 2. 3.	Include in 2015 HMP	1. No change. 2.
TU-8	Continue to conduct beach replenishment to maintain minimum beach profile for storm protection (maintain their Engineered Beach)	Town, with support from NJDEP	In Progress	1.Township completed projects in 2009 & 2012 in partnership with NJDEP BCE 2.USACE project in 2015 completed 3.	Include in 2015 HMP	1. Continue to work with USACE to maintain the beach and request replenishment from USACE 2.
TU-9	Reconstruct Bayview Drive in Strathmere for drainage improvements	Township	In Progress	1. Completed 4 blocks of reconstruction in 2015. 2. 3.	Include in 2015 HMP	1. Continue to apply for funding 2.
TU-10	Develop a local bulkhead ordinance as used in other Cape May communities	Township	Complete	1. Adopted Revised General Ordinance 17 in March 2015. 2. 3.	Discontinue	1. Project completed. 2.
TU-11	Conduct a study of bulkhead to determine substandard (lower than 7.5') or non-existent bulkheads	Township	No Progress	1. 2. Funding 3.	Include in 2015 HMP	1. No change. 2.
TU-12	Develop and implement projects to install and/or upgrade bulkheads, based on the results of the TU-11 study	Township	No Progress	1. 2. Funding and NJDEP permitting	Include in 2015 HMP	1. No change. 2.

Initiative Number	2010 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 2015 HMP? 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.
				3.		
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	In Progress	1 .USACE installed beachfill in 2015 2. 3.	Include in 2015 HMP	1. No change. 2.
TU-14 (CMC-29, 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	In Progress	1.See county for update info. County lead project – no action. 2. 3.	Include in 2015 HMP	1. No Change 2.
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	In Progress	1. See county for update info. County is designing drainage improvements. 2. 3.	Include in 2015 HMP	1. No Change 2.
TU-16 (CMC-31)	Elevate Roosevelt Boulevard (CR-623) from the Parkway into Ocean City proper.	County Engineering	No Progress	1. See county for update info. County lead project – no action. 2.	Choose an item.	1. 2.

Initiative Number	2010 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 2015 HMP? 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.
				3.		
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	In Progress	1. See county for update info. County Lead - Conceptual plan is done, awaiting funding. 2. 3.	Include in 2015 HMP	1. No change. 2.
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	No Progress	1. See county for update info 2. 3.	Choose an item.	1. No Change 2.
TU-19 (CMC-35)	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	In Progress	1. See county for update info. County has completed design. The County will be applying for permits and anticipates Spring 2016 construction. 2. 3.	Include in 2015 HMP	1. No Change 2.
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	Complete	1. See county for update info. County has completed project in Spring 2015. 2. 3.	Discontinue	1. 2. Project is complete.
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	1. 2. See county for update info. Lead County Chiefs Assoc. -No Action	Include in 2015 HMP	1. No change. 2.

Initiative Number	2010 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 2015 HMP? 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.
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	Choose an item.	1. 2. See county for update info 3.	Choose an item.	1. 2.
TU-23	Construction of storm sewer system to alleviate flooding on Dennisville – Petersburg Road (CR610) from White Pine Lane to Old Tuckahoe Road in Upper Township	County Engineering with municipal support	Complete	1. See county for update info 2. 3.	Discontinue	1. 2. Project complete.
~~TU-24~~	~~Construction of additional storm sewer infiltration system to minimize flooding on Hope Corson Road (CR671) from Route NJ 50 to Stagecoach Road in Upper Township~~	~~County Engineering with municipal support~~	~~Choose an item.~~	~~1.~~ ~~2.~~ ~~See TU-19 duplication???~~ ~~3.~~	~~Choose an item.~~	~~1.~~ ~~2.~~
TU-25 (CMC-69)	Become a National Fire Protection Association (NFPA) "Firewise" community. Participation in the NFPA "Firewise" program shall be supported by countywide and regional resources including the Cape May County Fire Chiefs Association and the New Jersey State Forest Fire Service (Firewise Community Liaison) by providing information on	Local Fire Chiefs working with County Fire Coordinator	No Progress	1. No Change 2. 3.	Include in 2015 HMP	1. No change. 2.

Initiative Number	2010 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 2015 HMP? 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.
	the "Firewise" program, facilitating public outreach and awareness programs, and supporting community fire risk reduction activities as appropriate (see County Initiative CMC-69).					
TU-26	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	Local Fire Chiefs	In Progress	1. No Change 2. 3.	Include in 2015 HMP	1. No changes 2.

Initiative Number	2010 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 2015 HMP? 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.
	agencies, as resources permit.					

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Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The Township 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:

- The Township has received a Hazard Mitigation Grant to install an emergency generator at the Township's EMS Building and quick disconnects for a fire pump at Amanada's Field and for a stormwater pump in Strathmere on Seacliff Ave & Strathmere Bay.
- There are have been several beach nourishment projects completed in the Township through federal, state and local programs. For details regarding these projects, refer to the NJBPN annual reports for Cape May County: http://intraweb.stockton.edu/eyos/page.cfm?siteID=149&pageID=9

Proposed Hazard Mitigation Initiatives for the Plan Update

Table 9.25-11 summarizes the comprehensive-range of specific mitigation initiatives the Township 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 9.25-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

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Table 9.12-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
TU-27	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.	Existing			Township	Medium	Medium	FEMA Mitigation Grant Programs and local budget for cost share	Short	High	SIP	ES
TU-28	The Garden State Parkway should be elevated 1' above the base flood elevation.	Existing			Garden State Parkway	High	High	FEMA Mitigation Grant Programs and Garden State Parkway	Longterm	Medium	SIP	SP
TU-29	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.	Existing			Garden State Parkway	High	Medium	FEMA Mitigation Grant Programs and Garden State Parkway	Longterm	Low - Medium	SIP	SP
TU-30	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.	Existing			Township	High	Medium	Mitigation Grant Programs and local budget for cost share	Longterm	Medium	LPR/ SIP	ES

Table 9.12-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
TU-31	Extend outfall pipe at Seacliff Ave & Strathmere Bay	Existing			Township	Medium	Medium	Mitigation Grant Programs and local budget for cost share	Short	High	SIP	SP
TU-32	Identify flood preparedness activities for the Township's CRS program.	New & Existing			Township	Medium	low		Short	Medium	LPR	PI/ PR
TU-33	Develop a Program for Public Information.	n/a			Township & Coastal Coalition	Medium	low		Ongoing	High	LPR	PI
TU-34	Flood warning system	New			Township	High	Medium	Mitigation Grant Programs and local budget for cost share	Short	High	EAP	PI/ PP
TU-35	Implement the recommendations of the Getting to Resilience report.	n/a			Township	Medium	Medium		Longterm	Medium	LPR/ SIP	PI/ PR

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

Acronyms and Abbreviations:

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*
NJDEP	*New Jersey Department of Environmental Protection*
NJOEM	*New Jersey Office of Emergency Management*
OEM	*Office of Emergency Management*

Potential FEMA HMA Funding Sources:

FMA	*Flood Mitigation Assistance Grant Program*
HMGP	*Hazard Mitigation Grant Program*
PDM	*Pre-Disaster Mitigation Grant Program*
HMA	*Hazard Mitigation Assistance Program*

Timeline:

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

CRS Category:

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- *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*

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Table 9.12-13. 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

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.

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9.12.14 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.12.15 Hazard Area Extent and Location

Hazard area extent and location maps have been 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 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 Township of Upper has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.12.16 Additional Comments

Figure 9.12-1. Township of Upper Hazard Area Extent and Location Map 1

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Action Number:
Mitigation Action/Initiative:

Assessing the Risk	
Hazard(s) addressed:	
Specific problem being mitigated:	
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1.
	2.
	3.
Action/Project Intended for Implementation	
Description of Selected Action/Project	
Action/Project Category	
Goals Met	
Applies to existing and or new development, or not applicable	
Benefits (losses avoided)	
Estimated Cost	
Priority*	
Plan for Implementation	
Responsible Organization	
Local Planning Mechanism	
Potential Funding Sources	
Timeline for Completion	
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

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