



SECTION 6 MITIGATION STRATEGY

2016 Plan Update Changes

- An NJOEM/FEMA Region II mitigation strategy workshop was conducted for Cape May County and all plan participants as summarized in this section.
- For the 2016 HMP update, the capability assessment was expanded and presented in Section 6 (this section) and in the jurisdictional annexes in Section 9.
- The mitigation strategy evaluation and prioritization methodology was updated and expanded.

6.1 INTRODUCTION

This section presents mitigation actions for Cape May County to reduce potential exposure and losses identified as concerns in the Risk Assessment portion of this HMP update. The County and planning partnership reviewed the Risk Assessment to identify and develop these mitigation actions, which are presented herein.

This section includes:

- Background and Past Mitigation Accomplishments
- General Mitigation Planning Approach
- Review and Update of Mitigation Goals and Objectives
- Capability Assessment
- Mitigation Strategy Development and Update

Hazard mitigation reduces the potential impacts of, and costs associated with, emergency and disaster-related events. Mitigation actions address a range of impacts, including impacts on the population, property, the economy, and the environment.

Mitigation actions can include activities such as: revisions to land-use planning, training and education, and structural and nonstructural safety measures.

6.2 BACKGROUND AND PAST MITIGATION ACCOMPLISHMENTS

In accordance with DMA 2000 requirements, a discussion regarding past mitigation activities and an overview of past efforts is provided as a foundation for understanding the mitigation goals, objectives, and activities outlined in this HMP. The County, through previous and ongoing hazard mitigation activities, has demonstrated that it is pro-active in protecting its physical assets and citizens against losses from natural and human-caused hazards. Examples of previous and ongoing actions, projects and capabilities include the following:

- The County facilitated the development of the original 2010 Cape May County Multi-Jurisdictional All Hazards Mitigation Plan, which included the participation of all municipal governments in the County. The current planning process represents the regulatory five-year local plan update process.
- All 16 municipalities in Cape May County participate in the National Flood Insurance Program (NFIP), which requires the adoption of FEMA floodplain mapping and certain minimum construction standards for building within the floodplain.
- Currently, 10 of the 16 municipalities in Cape May County are participants in NFIP Community Rating System (CRS) program. During the 2016 HMP update, several communities are now considering joining or re-entering the CRS program.
- Many municipalities in Cape May County have adopted regulatory standards regarding land-use and zoning that exceed minimum requirements and provide the communities with greater capability to manage development without increasing hazard risk and vulnerability.
- Municipalities have actively participated in available mitigation grant funding opportunities to implement mitigation projects, including the Hazard Mitigation Grant Program funding available in the wake of Tropical Storm Irene and Super Storm Sandy.



- The County and municipalities have implemented mitigation actions to protect critical facilities and infrastructure throughout the planning area.

These past and ongoing activities have contributed to the County’s understanding of its hazard preparedness and future mitigation activity needs, costs, and benefits. These efforts provide an ongoing foundation for the planning partnership to use in developing this HMP update.

6.3 GENERAL MITIGATION PLANNING APPROACH

The overall approach used to update the County and local hazard mitigation strategies are based on FEMA and State of New Jersey regulations and guidance regarding local mitigation plan development, including:

- DMA 2000 regulations, specifically 44 CFR 201.6 (local mitigation planning)
- FEMA “Local Mitigation Planning Handbook”, March 2013
- FEMA Local Mitigation Plan Review Guide, October 1, 2011
- FEMA “Integrating Hazard Mitigation into Local Planning”, March 1, 2013
- FEMA “Plan Integration: Linking Local Planning Efforts”, July 2015
- FEMA Mitigation Planning How-To Guide #3, Identifying Mitigation Actions and Implementing Strategies (FEMA 386-3)
- FEMA “Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards”, January 2013

The mitigation strategy update approach includes the following steps that are further detailed in later sections of this section:

- Review and update mitigation goals and objectives.
- Identify mitigation capabilities, and evaluate their capacity and effectiveness to mitigate and manage hazard risk.
- Identify progress on previous county and local mitigation strategies.
- Develop updated county and local mitigation strategies.
- Prepare an implementation strategy, including the prioritization of projects and initiatives in the updated mitigation strategy.

6.4 REVIEW AND UPDATE OF MITIGATION GOALS AND OBJECTIVES

This section documents the efforts to update the guiding principle (mission statement), and hazard mitigation goals and objectives established to reduce or avoid long-term vulnerabilities to the identified hazards.

6.4.1 Goals and Objectives

According to CFR 201.6(c)(3)(i): “The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.” Further, FEMA mitigation planning guidance recommends establishing objectives to better tie mitigation goals to specific mitigation strategies (e.g. projects, activities, and initiatives).

FEMA defines **Goals** as general guidelines that explain what should be achieved. Goals are usually broad, long-term, policy statements, and represent a global vision.

FEMA defines **Objectives** as strategies or implementation steps to attain mitigation goals. Unlike goals, objectives are specific and measurable, where feasible.

FEMA defines **Mitigation Actions** as specific actions that help to achieve the mitigation goals and objectives.



The goals and objectives established in the 2010 plan were presented to the Steering Committee and planning partnership for review and amendment throughout the planning process. This review was made with consideration of the hazard events and losses since the 2010 plan, the updated hazard profiles and vulnerability assessment, and the goals and objectives established in the updated State HMP.

Most notably, a Goals Webinar was held in February 2016 specifically to review and receive input on the HMP Goals and Objectives. As a result of these efforts, Table 6-1 presents Cape May County’s updated goals and objectives for the 2016 Hazard Mitigation Plan update. Although an objective is listed with each goal, the objectives were developed to meet multiple goals as demonstrated in Table 6-2.

Table 6-1. Cape May County Hazard Mitigation Plan Goals and Objectives

2016 Goals and Objective
Goal 1: Protect Life and Property.
<i>Objective 1-1:</i> Protect critical facilities and infrastructure.
<i>Objective 1-2:</i> Address repetitive and severe repetitive loss properties.
<i>Objective 1-3:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
<i>Objective 1-4:</i> Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.
<i>Objective 1-5:</i> Identify and implement measures that enhance the capabilities of the County to better profile and assess exposure to natural and man-made hazards and develop appropriate risk reduction strategies.
<i>Objective 1-6:</i> Better characterize flood/stormwater hazard events by conducting additional hazard studies and identify inadequate stormwater facilities and poorly drained areas.
<i>Objective 1-7:</i> Develop, maintain, strengthen and promote enforcement of ordinances, regulations, plans and other mechanisms that facilitate hazard mitigation.
<i>Objective 1-8:</i> Integrate the recommendations of this plan into existing local programs.
<i>Objective 1-9:</i> Ensure that development is done according to modern and appropriate standards, including the consideration of natural hazard risk in land use planning and building design approval process.
<i>Objective 1-10:</i> Identify and pursue funding opportunities to address sea-level rise.
<i>Objective 1-11:</i> Identify and pursue funding opportunities to develop and implement local and county mitigation activities.
Goal 2: Increase Public Awareness and Preparedness of Natural and Man-Made Hazards and their Risks.
<i>Objective 2-1:</i> Develop and implement program(s) to better understand the public’s level of individual and household preparedness to natural and man-made hazards.
<i>Objective 2-2:</i> Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual preparedness activities.
<i>Objective 2-3:</i> Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).
<i>Objective 2-4:</i> Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards, including providing incentives to mitigate.
<i>Objective 2-5:</i> Provide information on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.
G-3: Promote Sustainability (and Continuity of Operations and Government)
<i>Objective 3-1:</i> Promote the development of government and business continuity plans.
<i>Objective 3-2:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
<i>Objective 3-3:</i> Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.
<i>Objective 3-4:</i> Develop and maintain adequate services and utilities to serve the County’s population, businesses, and tourism.
G-4: Enhance Disaster Preparedness, Response and Recovery
<i>Objective 4-1:</i> Reduce general public dependency on disaster response and recovery support services.
<i>Objective 4-2:</i> Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.



Table 6-1. Cape May County Hazard Mitigation Plan Goals and Objectives

2016 Goals and Objective
<i>Objective 4-3: Improve early detection, warning and emergency communication procedures and systems.</i>
<i>Objective 4-4: Maintain and update County and Local Emergency Management Plans to accommodate changes in the municipalities' development patterns and vulnerability to natural and man-made hazard risk.</i>
<i>Objective 4-5: Where appropriate, coordinate and integrate hazard mitigation actions with existing local emergency operations plans.</i>
<i>Objective 4-6: Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.</i>
<i>Objective 4-7: Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.</i>
<i>Objective 4-8: Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.</i>
<i>Objective 4-9: Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.</i>
<i>Objective 4-10: Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities.</i>
G-5: Protect Open Space, the Environment and Natural Resources
<i>Objective 5-1: Protect and preserve environmentally sensitive and critical areas.</i>
<i>Objective 5-2: Protect and restore natural lands and features that serve to mitigate losses (including beaches, dunes, wetlands, floodplains, stream corridors, marine tidal marshes, and the back bay areas). Such lands should be clearly mapped and identified for protection.</i>
<i>Objective 5-3: Continue to preserve, protect and acquire open space, particularly in high hazard areas. Include hazard considerations into the prioritization schema for land acquisition.</i>
<i>Objective 5-4: Incorporate coastal hazard considerations into land-use planning and natural resource management.</i>
<i>Objective 5-5: Promote sustainable land development practices.</i>
<i>Objective 5-6: Maintain National Historic Landmark status of municipalities within the County through preservation of historic and architecturally significant sites.</i>
G-6: Promote Partnerships
<i>Objective 6-1: Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.</i>
<i>Objective 6-2: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.</i>
<i>Objective 6-3: Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation actions more effectively.</i>



Table 6-2. Cape May County Hazard Mitigation Plan Objectives Meeting Multiple Goals

Objective Number/Statement	Goal 1 - Protect Life and Property	Goal 2 - Increase Public Awareness and Preparedness of Natural and Man-Made Hazards and their Risks	Goal 3 - Promote Sustainability (and Continuity of Operations and Government)	Goal 4 - Enhance Disaster Preparedness, Response and Recovery	Goal 5 - Protect Open Space, the Environment and Natural Resources	Goal 6 - Promote Partnerships
<i>Objective 1-1:</i> Protect critical facilities and infrastructure.	X		X	X		
<i>Objective 1-2:</i> Address repetitive and severe repetitive loss properties.	X	X		X		
<i>Objective 1-3:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	X		X	X		
<i>Objective 1-4:</i> Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.	X			X		X
<i>Objective 1-5:</i> Identify and implement measures that enhance the capabilities of the County to better profile and assess exposure to natural and man-made hazards and develop appropriate risk reduction strategies.	X	X	X	X	X	X
<i>Objective 1-6:</i> Better characterize flood/stormwater hazard events by conducting additional hazard studies and identify inadequate stormwater facilities and poorly drained areas.	X	X		X		
<i>Objective 1-7:</i> Develop, maintain, strengthen and promote enforcement of ordinances, regulations, plans and other mechanisms that facilitate hazard mitigation.	X	X		X	X	
<i>Objective 1-8:</i> Integrate the recommendations of this plan into existing local programs.	X	X	X	X	X	X
<i>Objective 1-9:</i> Ensure that development is done according to modern and appropriate standards, including the consideration of natural hazard risk in land use planning and building design approval process.	X	X			X	
<i>Objective 1-10:</i> Identify and pursue funding opportunities to address sea-level rise.	X		X	X	X	
<i>Objective 1-11:</i> Identify and pursue funding opportunities to develop and implement local and county mitigation activities.	X	X	X	X	X	X
<i>Objective 2-1:</i> Develop and implement program(s) to better understand the public’s level of individual and household preparedness to natural and man-made hazards.	X	X				X



Table 6-2. Cape May County Hazard Mitigation Plan Objectives Meeting Multiple Goals

Objective Number/Statement	Goal 1 - Protect Life and Property	Goal 2 - Increase Public Awareness and Preparedness of Natural and Man-Made Hazards and their Risks	Goal 3 - Promote Sustainability (and Continuity of Operations and Government)	Goal 4 - Enhance Disaster Preparedness, Response and Recovery	Goal 5 - Protect Open Space, the Environment and Natural Resources	Goal 6 - Promote Partnerships
<i>Objective 2-2:</i> Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual preparedness activities.		X		X		X
<i>Objective 2-3:</i> Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).	X	X		X		X
<i>Objective 2-4:</i> Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards, including providing incentives to mitigate.	X	X				X
<i>Objective 2-5:</i> Provide information on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.	X	X	X	X	X	X
<i>Objective 3-1:</i> Promote the development of government and business continuity plans.			X	X		X
<i>Objective 3-2:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	X		X	X		
<i>Objective 3-3:</i> Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.	X		X	X		X
<i>Objective 3-4:</i> Develop and maintain adequate services and utilities to serve the County’s population, businesses, and tourism.	X		X	X		
<i>Objective 4-1:</i> Reduce general public dependency on disaster response and recovery support services.			X	X		X
<i>Objective 4-2:</i> Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.			X	X		X
<i>Objective 4-3:</i> Improve early detection, warning and emergency communication procedures and systems.	X		X	X		



Table 6-2. Cape May County Hazard Mitigation Plan Objectives Meeting Multiple Goals

Objective Number/Statement	Goal 1 - Protect Life and Property	Goal 2 - Increase Public Awareness and Preparedness of Natural and Man-Made Hazards and their Risks	Goal 3 - Promote Sustainability (and Continuity of Operations and Government)	Goal 4 - Enhance Disaster Preparedness, Response and Recovery	Goal 5 - Protect Open Space, the Environment and Natural Resources	Goal 6 - Promote Partnerships
<i>Objective 4-4:</i> Maintain and update County and Local Emergency Management Plans to accommodate changes in the municipalities' development patterns and vulnerability to natural and man-made hazard risk.			X	X		X
<i>Objective 4-5:</i> Where appropriate, coordinate and integrate hazard mitigation actions with existing local emergency operations plans.			X	X		X
<i>Objective 4-6:</i> Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.	X		X	X		
<i>Objective 4-7:</i> Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.	X		X	X		X
<i>Objective 4-8:</i> Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.	X		X	X		X
<i>Objective 4-9:</i> Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	X		X	X		X
<i>Objective 4-10:</i> Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities.	X		X	X		
<i>Objective 5-1:</i> Protect and preserve environmentally sensitive and critical areas.					X	X
<i>Objective 5-2:</i> Protect and restore natural lands and features that serve to mitigate losses (including beaches, dunes, wetlands, floodplains, stream corridors, marine tidal marshes, and the back bay areas). Such lands should be clearly mapped and identified for protection.	X				X	
<i>Objective 5-3:</i> Continue to preserve, protect and acquire open space, particularly in high hazard areas. Include hazard considerations into the prioritization schema for land acquisition.					X	X
<i>Objective 5-4:</i> Incorporate coastal hazard considerations into land-use planning and natural resource management.	X				X	X



Table 6-2. Cape May County Hazard Mitigation Plan Objectives Meeting Multiple Goals

Objective Number/Statement	Goal 1 - Protect Life and Property	Goal 2 - Increase Public Awareness and Preparedness of Natural and Man- Made Hazards and their Risks	Goal 3 - Promote Sustainability (and Continuity of Operations and Government)	Goal 4 - Enhance Disaster Preparedness, Response and Recovery	Goal 5 - Protect Open Space, the Environment and Natural Resources	Goal 6 - Promote Partnerships
<i>Objective 5-5:</i> Promote sustainable land development practices.			X		X	X
<i>Objective 5-6:</i> Maintain National Historic Landmark status of municipalities within the County through preservation of historic and architecturally significant sites.	X				X	
<i>Objective 6-1:</i> Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.			X			X
<i>Objective 6-2:</i> Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.	X	X	X	X	X	X
<i>Objective 6-3:</i> Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation actions more effectively.	X	X	X	X	X	X



6.5 CAPABILITY ASSESSMENT

According to FEMA 386-3, a capability assessment is an inventory of a community’s missions, programs and policies; and an analysis of its capacity to carry them out. This assessment is an integral part of the planning process. The assessment process enables identification, review and analysis of local and state programs, policies, regulations, funding and practices currently in place that may either facilitate or hinder mitigation.

During the original planning process, the 2010 Planning Committee discussed their current capabilities to address potential hazard events. For the 2016 HMP update, the County and all municipalities identified and assessed their capabilities in the areas of planning and regulatory, administrative and technical, and fiscal. By completing this assessment, the County and each municipality learned how or whether they would be able to implement certain mitigation actions by determining the following:

- Limitations that may exist on undertaking actions;
- The range of local and/or state administrative, programmatic, regulatory, financial and technical resources available to assist in implementing their mitigation actions;
- Action is currently outside the scope of capabilities;
- Types of mitigation actions that may be technically, legally (regulatory) administratively, politically or fiscally challenging or infeasible;
- Opportunities to enhance local capabilities to support long term mitigation and risk reduction.

During the 2016 HMP update process, all participating jurisdictions were tasked with developing their capability assessment, paying particular attention to evaluating the effectiveness of these capabilities in supporting hazard mitigation, and identifying opportunities to enhance local capabilities. This purpose of this sub-section is to provide a summary of these capabilities for the purposes of mitigation and does not describe all responsibilities of each entity. More detailed county and municipal capabilities in the areas of planning and regulatory, administrative and technical, and fiscal may be found in the Capability Assessment section of their jurisdictional annexes in Section 9.

Further, within each annex participating jurisdictions have identified how they have integrated hazard risk management into their existing planning, regulatory and operational/administrative framework (“integration capabilities”), and how they intend to promote this integration (“integration actions”). A further summary of these continued efforts to develop and promote a comprehensive and holistic approach to hazard risk management and mitigation is presented in Section 7.

6.5.1 Planning and Regulatory Capability

According to the FEMA *Local Mitigation Handbook*, planning and regulatory capabilities are based on the implementation of ordinances, policies, local laws and State statutes, and plans and programs that relate to guiding and managing growth and development. Cape May County and its municipalities have various Federal, State, County and local policies, programs and plans available to promote and support mitigation and reduce future damages. Refer to Section 9 which summarizes the planning and regulatory capabilities per municipality.

Federal and State Planning and Regulatory Capability

State of New Jersey Hazard Mitigation Plan

The State of New Jersey HMP includes an evaluation of the state’s overall pre- and post-hazard mitigation policies, programs, and capabilities; the policies related to development in hazard-prone areas; and the state’s funding capabilities. The State of New Jersey HMP thoroughly describes the federal and state programs



available to Cape May County to promote mitigation. The State of New Jersey HMP (2014) was used as a resource in developing Cape May County's HMP update.

National Flood Insurance Program (NFIP)

The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968 (FEMA's 2002 National Flood Insurance Program (NFIP)). The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages.

There are three components to the NFIP: flood insurance, floodplain management and flood hazard mapping. Communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Community participation in the NFIP is voluntary. Flood insurance is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Flood damage in the U.S. is reduced by nearly \$1 billion each year through communities implementing sound floodplain management requirements and property owners purchasing flood insurance. Additionally, buildings constructed in compliance with NFIP building standards suffer approximately 80% less damage annually than those not built in compliance (FEMA, 2008).

As of May 2016, the regulatory (preliminary) NFIP flood mapping is dated January 2015, and the latest (preliminary) Flood Insurance Study (FIS) is dated June 30, 2014. As identified in the Cape May County Strategic Recovery Planning Report (Draft), dated November 3, 2015 (Maser Consulting P.A.), prior to Superstorm Sandy, FEMA had begun a coastal flood study to update Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) reports for portions of New Jersey using improved methods and data to better reflect coastal flood risk. After Sandy, FEMA released Advisory Base Flood Elevation (ABFE) maps for certain communities based on the partially completed FIS's, which were designed to help in rebuilding and recovery efforts. For Cape May County, the ABFE maps were released on January 28, 2013.

Subsequently, FEMA released preliminary work maps, which included the full results of the coastal flood study on June 18, 2013. FEMA's preliminary working maps are based on the same underlying data as the ABFE maps, but include the results of a more refined analysis of shoreline conditions, including the effects of erosion and wave run-up. Preliminary FIRMs and FIS reports for Cape May County were released January 30, 2015.

While the National Flood Insurance Program (NFIP) floodplain management regulations do not require communities to use flood hazard data from the advisory or preliminary flood data, in cases where BFEs have increased and/or a more restrictive flood zone has been established, communities have the responsibility to ensure that new or improved construction as well as the health and safety of citizens are protected.

Further details on the County's flood vulnerability may be found in the flood hazard profile in Section 5.4.3.

NFIP Community Rating System (CRS)

As an additional component of the NFIP, the Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance (FEMA, 2012).

Currently, nine (9) communities in Cape May County are participants in CRS program, specifically Avalon Borough (Class 5), City of Cape May (Class 6), Cape May Point Borough (Class 6), City of North Wildwood



(Class 7), Ocean City (Class 6), Sea Isle City (Class 5), Stone Harbor Borough (Class 5), Upper Township (Class 6), and Wildwood Crest Borough (Class 6). West Wildwood Borough is currently identified as being in “Rescinded” status, however is actively working to re-instate their participation. During the 2016 HMP update, several communities are now considering joining or re-entering the CRS program.

Critical Area Protection Policy

The following NJDEP programs both protect critical natural resources, and provide funding for the State, municipalities, and counties to purchase land for open-space preservation and recreation, which may directly or indirectly support hazard mitigation efforts:

- Green Acres Program
- Blue Acres Program
- Historical Preservation Program
- Farmland Preservation
- Wetlands Act of 1970 (N.J.S.A. 13:9A)
- Soil and Erosion and Sediment Control Act (N.J.S.A. 4:24)
- Pinelands Protection Act (N.J.S.A. 13:18A-1 et. seq).

The Wetlands Act of 1970 (N.J.S.A. 13:9A) provide rules and regulations governing development in wetland areas of New Jersey. New Jersey has 15 soil conservation districts, following county boundaries that implement the New Jersey Soil Erosion and Sediment Control Act (N.J.S.A. 4:24), which governs certain aspects of new development. The Pinelands Protection Act regulates land use and development in the environmentally sensitive Pinelands district, through the Pinelands Comprehensive Management Plan.

Coastal Area Facility Review Act (CAFRA)

The NJDEP’s Division of Land Use Regulation regulates the use and development of coastal resources through CAFRA (N.J.S.A. 13:19-1 et seq.), the Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.), the Waterfront Development Law (N.J.S.A. 12:5-1 et seq.), and the Coastal Zone Management Rules at N.J.A.C. 7:7. The Division determines whether an activity is regulated based on the activity itself and its location within the coastal zone.

The Coastal Area Facility Review Act of 1973 established the CAFRA zone, as the bounds of CAFRA regulation in the State of New Jersey. It regulates, by the Division of Land Use Regulation, certain development activities including residential, commercial, public or industrial development within the defined CAFRA area. The CAFRA area extends from the southern limit of Middlesex County to the northern limit of Salem County within coastal areas. The Coastal Zone Management (N.J.A.C. 7:7) rules provides detailed descriptions of activities requiring a permit within the CAFRA zone as well as activities that are not regulated within the CAFRA zone.

Strategic Recovery Planning Report (SRPR)

The New Jersey Department of Community Affairs (NJDCA) has established a Post Sandy Planning Assistance Grant Program. The purpose of this program is to support long range planning for community redevelopment in the municipalities and counties sustaining damage from Superstorm Sandy. The Program provides grants to municipalities and counties to retain American Institute of Certified Planners/New Jersey Board of Professional Planners (AICP/PP) licensed planners to address conditions created or exacerbated by Superstorm Sandy, identify approaches to rebuilding that will be more resistant to damage from future storm events, and encourage sustainable economic growth.

The first step in the grant process is the preparation of a Strategic Recovery Planning Report (SRPR). This report must be completed for municipalities and counties to be eligible for additional Post Sandy planning



assistance. The purpose of the SRPR is to evaluate the impacts of the disaster on relevant community features. The evaluation can be broad or narrow but should focus on planning goals, strategies, and priorities leading to actions that are most urgently needed for public safety and economic recovery. The SRPR should serve as a guide for actions to not only recover from the effects of Superstorm Sandy but also to reduce vulnerabilities to future disasters.

Cape May County, with assistance from Maser Consulting P.A., is currently in the process of preparing a SRPR, with a draft prepared in November 2015. The 2010 Cape May County Hazard Mitigation Plan and the New Jersey State Hazard Mitigation Plan were used in the vulnerability assessment portion of the SRPR.

Getting to Resilience

The New Jersey Office of Coastal Management developed *Getting to Resilience: A Coastal Community Resilience Evaluation Tool*. This tool is a facilitated questionnaire that is designed to encourage ideas and collaboration among local decision makers. *Getting to Resilience* was developed as a non-regulatory tool to assist local decision-makers in the identification of planning, mitigation, and adaptation opportunities to reduce vulnerability to coastal storms and sea level rise and build capacity for coastal community resilience. For detailed information regarding this tool, refer to: <http://www.state.nj.us/dep/cmp/docs/gtr-resilience.pdf>

Through the Jacques Cousteau National Estuarine Research Reserve (JCNERR) - N.J. Agricultural Experiment Station – Rutgers University, coastal communities have access to direct support to perform this coastal resilience planning process and develop a *Getting to Resilience* plan. Upper Township conducted this process with JCNERR and has included their findings and recommendations in this plan update. JCNERR is currently (Spring 2016) involved in the Coastal Vulnerability Assessment (CVA) that Sustainable Jersey is facilitating for Cape May City.

County and Local Planning and Regulatory Capability

Land Use Planning Policy

State of New Jersey Municipal Land Use Law L.1975, c. 291, s. 1, eff. Aug. 1, 1976, is the legislative foundation for the land use process, including decisions by Planning Boards and Zoning Boards of Adjustment, in the State of New Jersey. It defines the powers and responsibilities of boards and is essential to their functions and decisions. It also provides the required components of a municipal Master Plan.

Every municipal agency shall adopt and may amend reasonable rules and regulations, not inconsistent with this act or with any applicable ordinance, for the administration of its functions, powers, and duties. These plans help jurisdictions review their land use plans and policies with public participation. The Municipal Land Use Law requires that each municipality prepare a comprehensive plan and update that plan every 6 years.

The following summaries of various planning documents and reports relevant to managing hazard risk within the County were provided in the Cape May County Strategic Recovery Planning Report (Draft), dated November 3, 2015 (Maser Consulting P.A.), and are presented here directly.

Cape May County Comprehensive Plan (2005)

The Cape May County Comprehensive Plan (“CMCCP”) was updated from 2002 to February 2005. It is the fifth edition of the CMCCP, which was first adopted in 1962. The current CMCCP addresses new issues and updated County planning policies.



The purpose of the CMCCP is to establish policies to guide future growth so that resources will be used wisely and efficiently. The CMCCP provides specific policy guidelines addressing each of the issue areas; however, the only direct link to storm mitigation policies is the expressed need to protect the causeways from development because this would create traffic hazards and interfere with speedy access to and evacuation from the island communities. In addition, it is noted that development in these areas encroaches on or directly promotes deterioration of the County's valuable wetlands.

The CMCCP does not include any other specific goals, objectives, or policies that would support County planning needs related to future storm mitigation or post storm recovery. These deficiencies should be remedied with updated policies and coordination with other County planning documents, such as the Multi-Jurisdictional All-Hazard Mitigation Plan.

Cape May County Open Space and Mitigation Plan

The Cape May County Open Space and Mitigation Plan (“OSMP”) adopted in 2005 was updated and readopted in 2007 as an element of the Cape May County Comprehensive Master Plan.

The OSMP does not include any specific goals, objectives, or policies that would support planning needs directly related to future storm mitigation or post storm recovery; but in a general sense it focuses on preservation and acquisition of open space. This plan should be updated to link to other recent planning efforts.

Cape May County Transportation Plan (2006)

The Cape May County Transportation Plan (“CMCTP”) highlights long and short-term strategies to address various transportation issues affecting the County. The purposes of the CMCTP are:

- To serve as the transportation component of the adopted Cape May County Comprehensive Plan,
- To satisfy Federal requirements of the Subregional Transportation Planning Work Program,
- To identify the adopted transportation policies, issues and objectives of the County Planning Board,
- To identify a plan for proposed County transportation improvements,
- To create and implement projects that will address air quality guidelines, and
- To manage growth by planning and coordinating transportation projects consistent with existing and projected land use.

The CMCTP does not include any goals, objectives, or policies that would support County planning needs related to future storm mitigation or post storm recovery with the exception of maintenance of evacuation routes being directly related to storm mitigation. This document needs to be updated and expanded related to storm mitigation policies and more recent traffic study findings and completed transportation improvements.

Cape May County Hurricane Evacuation and Elevation Study Extension (2007)

The objective of the Cape May County Hurricane Evacuation and Elevation Study Extension (“HEESE) prepared in 2007 was to expand on the work completed under the previous study, "Analysis and Modeling of Cape May County Roadway Elevations and Evacuation Routes", 2006. This earlier study was sponsored by the New Jersey Department of Transportation and the New Jersey State Police Office of Emergency Management.

This initial study contained two main areas of study as follows:

- Evacuation Simulation Modeling: Simulation analysis of evacuations of Cape May County traffic via the NJ 47/347 corridor was conducted. The research identified higher evacuation demands for the NJ 47/347 corridor which resulted in much higher total evacuation times than the scenarios tested in the



initial 2006 study. Three scenarios were studied: no change, original contraflow and extended contraflow. An extension of the lane reversal contraflow section between NJ 83 and NJ 55 to the planned southern terminus of NJ 83 was shown to be highly effective and could potentially shorten the worst case evacuation scenario times from 89 hours to 40 hours.

- Roadway Elevation Surveying: The HEESE surveyed additional County roads to determine their elevation and to assess under what category of storm the roadways would be inundated and impassable by either emergency response vehicles or by evacuees. The survey and analysis revealed that while the majority of the surveyed roadways will remain passable during a category 1 hurricane, there were occasions where each of the roadways would be flooded from a category 1 hurricane strike. The fact that all the surveyed roadways will be at least partially impassable during the peak levels of a storm surge from a category 1 hurricane indicated the importance of having an evacuation plan in place that allows enough time for evacuation before the maximum storm surge levels are reached.

The HEESE evaluated storm surge elevations for different hurricane categories were based on the Hurricane Evacuation Study map (June 2006 version) produced by the Philadelphia District of the U.S. Army Corps of Engineers. This analysis may need to be updated based upon more current data, if available. Also the results of this analysis should be coordinated with road improvement project planning on affected low-lying road corridors.

Cape May County Smart Growth Strategic Plan Transfer of Development Rights Feasibility Study

The Cape May County Smart Growth Strategic Plan Transfer of Development Rights Feasibility Study (“TDRFS”) was prepared by Maser Consulting, P.A. for the Cape May County Board of Chosen Freeholders. The purpose was to evaluate, through a cooperative planning process with the 16 Cape May County municipalities, the feasibility of using transfer of development rights (“TDR”) tools to provide for smart growth. The goals were:

- To assess development strategies that would preserve the unique ecosystems of the county,
- To evaluate the potential of establishing a TDR program either countywide, inter-municipal or intra-municipal,
- To identify special resource areas in the need of preservation and assess their feasibility as TDR sending areas,
- To identify vacant or underutilized properties and assess their suitability for added density, and
- To provide valuable information for use in the preparation of other county and local planning studies.

An Issues Profile provided a summary of thirteen planning factors to be considered in evaluating and ranking lands for preservation and protection. These included: population, employment, land use, housing, environmental resources, conservation, open space and recreation, economic development, historic properties, transportation, infrastructure, other planning considerations and inter-municipal cooperation. Specifically directed to future storm mitigation efforts, the environmental resources and conservation, open space and recreation sections provided timely baseline data. The infrastructure section also identified the need to tie future development to water and wastewater infrastructure system capacities. The TDRFS noted that drainage and flooding issues will be exacerbated by global warming and that protection of the most flood prone areas should be considered.

Profiles were prepared for each Cape May County municipality which included detailed maps of man-made and natural resources and infrastructure. A list of potential TDR sending and receiving areas was compiled. Related to future storm mitigation the use of high velocity flood areas and extant environmental resources along the coast were identified as possible sending areas.



The TDRFS provided comprehensive resources to begin an evaluation of environmental conditions related to future storm mitigation and post storm relief. Because the TDRFS was prepared in 2009, it should be updated especially with amended FEMA and storm surge data

Site Plan and Subdivision Resolution of Cape May County New Jersey (June 2011)

This Resolution provides procedures, rules, regulations, and standards for review and approval of site plans and subdivisions for land development in Cape May County to promote the public health, safety, convenience, and general welfare of the County. The County legal control is limited to all subdivisions and to site plans involving commercial, industrial, multi-family structures containing five or more units, any land development requiring off-street parking areas or off-street standing areas for an excess of five vehicles or any property having frontage on a County road. The County review focuses on drainage, storm water management, traffic and access related to the County road network.

Directly affecting storm mitigation information would be storm water management design criteria in the Regulations. The design criteria should be reviewed and updated to ensure that the most current storm data (FEMA elevations, storm surge data and climate impact elevation data) are included and addressed in all development applications.

Continuity of Operations Plan (COOP)

Continuity of Operations (COOP) planning is essential to ensure that the County can continue to function and provide services to its citizens following an emergency, disaster, or incident that disrupts the County's normal operations. Cape May County is in need of the development of a single, County-level COOP Plan that prioritizes the County's critical functions and provides strategies for carrying these out during periods of disruption. While individual departments have identified some level of planning, the county as a whole has not coordinated any of their plan development horizontally or vertically to ensure compliance with supporting agencies.

Disaster Debris Management Plan (DDMP)

Cape May County is currently in need of an update to the County's existing Disaster Debris Management Plan (DDMP) to ensure the County can continue to function and provide services to its citizens following a debris generating event that disrupts the County's normal operations. The county will need to develop a County-specific DDMP update that provides a coordinated response blueprint for debris removal management and processing following a disaster. A well-developed, County-specific DDMP update will provide the framework for streamlining public health and safety efforts following a disaster and prioritizes debris removal management operations to make the County less vulnerable to the effects of a disaster.

Floodplain Management Policy

New Jersey State Law Flood Hazard Area Control Act (NJSA 58:16A-52): The Act and regulations attempts to minimize damage to life and property from flooding caused by development within fluvial and tidal flood hazard areas, to preserve the quality of surface waters, and to protect the wildlife and vegetation that exist within and depend upon such areas for sustenance and habitat. While it does not require local adoption, as it is enforced by the NJDEP, the floodplain ordinances of each municipality need to be reviewed to be in compliance with this new regulation.

All municipalities participate in the NFIP and have a Floodplain Ordinance. Communities are encouraged to adopt standards which exceed NFIP requirements.



Building Codes Policy

Uniform Construction Code (Uniform Construction Code Act of 1975 [UCC]) requires all jurisdictions to have current land use master plans, zoning, and other land development ordinances. The UCC adopts up-to-date building codes as its Building Subcode and One- and Two-Family Subcode. These Subcodes contain requirements that address construction in both A and V flood zones.

Building codes mandate best practices and technology, much of which is designed to reduce or prevent damage from occurring when structures are under stress. New Jersey State Law requires that all municipalities adopt ordinances that follow the UCC. In January 2013, the State established by emergency rule the best available data from FEMA’s latest flood maps, plus one foot of freeboard, as the general rebuilding standard to adapt to changing flood hazard risks and corresponding federal flood insurance rates. All municipalities in Cape May County have an active building code.

Emergency Management Plan

According to State Police Directive 101, each County and municipality shall prepare, adopt and maintain an Emergency Operation Plan that meets the requirements of the State Emergency Operations Plan guidelines and checklist. The plan describes the hazards faced by the jurisdiction as well as the jurisdictions capabilities, needs, demands and emergency management structure. Cape May County and each municipality have an Emergency Operations Plan.

U.S. Army Corps of Engineers

The following information provides U.S. Army Corps of Engineers (USACE) programs and projects that are occurring within Cape May County.

Beach Nourishment Programs

See NJDEP Bureau of Coastal Engineering - Beach Nourishment in subsequent sections.

U.S. Army Corps of Engineers Dam Safety Program

The U.S. Army Corps of Engineers (USACE) is responsible for safety inspections of some federal and non-federal dams in the United States that meet the size and storage limitations specified in the National Dam Safety Act. USACE has inventoried dams and has surveyed each state and federal agency’s capabilities, practices, and regulations regarding design, construction, operation, and maintenance of the dams. USACE has also developed guidelines for inspection and evaluation of dam safety (USACE 1997).

6.5.2 Administrative and Technical Capabilities

According to the FEMA Local Mitigation Handbook, administrative and technical capability refers to a community’s staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. It also refers to the ability to access and coordinate these resources effectively. Local mitigation is further supported by county, regional, state and federal administrative and technical capabilities.

The following summarizes the administrative and technical capabilities available in Cape May County. Based upon the capability assessment conducted, municipal administrative and technical capabilities vary across the County. Refer to Section 9 which describes each municipality’s administrative and technical capabilities.

Federal and State Administrative and Technical Capabilities



New Jersey State Police – Office of Emergency Management (NJOEM)

The Governor of New Jersey has the overall responsibility for Emergency Management activities in the State. The Superintendent of the New Jersey State Police is the State Director of the New Jersey Office of Emergency Management (NJOEM). On behalf of the Governor, all activities and departments are coordinated, directed, and controlled from the NJOEM, Emergency Operations Center.

The State Director of Emergency Management supervises, directs, and appoints deputies and/or assistants to control the daily activities of NJOEM. The function and staffing of NJOEM is with the approval of the Attorney General. The State Hazard Mitigation Officer is the representative of State government acting as the primary point of contact with FEMA, other federal agencies, and county and local units of government in the planning and implementation of pre- and post-disaster mitigation programs and activities required under the Stafford Act. Currently, the New Jersey State Hazard Mitigation Officer is Acting Sergeant First Class Michael Gallagher of NJOEM.

Recovery Bureau

The Chief of the Recovery Bureau supervises the Mitigation, Public Assistance, and Finance Units. The Mitigation Unit undertakes hazard mitigation planning and the review of mitigation projects in advance of potential disasters, and is also activated during and immediately after disasters to evaluate existing and proposed mitigation measures in the affected areas.

The Public Assistance Unit accepts and reviews applications for funds for emergency work submitted by local individuals, households, and businesses, as well as from local governments during and immediately after a disaster. The 2013 reorganization of the Bureau added a dedicated Finance Unit to support the fiscal functions of both the Public Assistance and Mitigation Units. The Finance Unit ensures timely reimbursements and fiduciary responsibility.

Mitigation Unit

The Mitigation Unit, within the Emergency Management Section, has the mission of enhancing State, county, and municipal risk reduction through the development and implementation of mitigation strategies. Hazard mitigation, by definition, is any sustained action that prevents or reduces the loss of property or human life from recurring hazards. The Mitigation Unit accomplishes this task by implementing and administering several grant-based programs in conjunction with FEMA.

Preparedness Bureau

The Preparedness Unit in the Preparedness Bureau is responsible for disseminating preparedness information in advance of a disaster or potential disaster. The Preparedness Unit maintains an extensive library of natural disaster preparedness and recovery information on its Family and Community Emergency Preparedness website, accessible at www.nj.gov/njoem or www.njsp.org/njoem. The disaster preparedness and recovery information featured prominently on the New Jersey State Police and NJOEM website home pages is a critical part of New Jersey's efforts to protect public health and safety and to minimize loss of life and property in the event of a disaster.

Hazard Mitigation Administrative Plan

In the event that an active disaster declaration has necessitated a FEMA-approved HMGP Administrative Plan, the plan is reviewed to ensure compliance with the prevailing guidance and to set forth the administrative procedures, organization, and requirements for administering the HMGP in New Jersey. The HMGP Administrative Plan details the process for prioritizing post-disaster mitigation funding of local mitigation projects.



New Jersey Department of Environmental Protection

Bureau of Dam Safety & Flood Control

The Bureau of Dam Safety & Flood Control leads the State's efforts as the State NFIP Coordinator and Community Rating System (CRS) support. In addition, the section's responsibilities include the funding of construction and operation of federal-state-local flood control mitigation projects throughout the state. The section has also taken a lead role on the development and adoption of NJ Flood Hazard Area mapping, as well as an active partnership with FEMA on their FEMA Map Modernization Program efforts. The Bureau provides assistance to communities participating in the NFIP and interested in joining CRS thru the NJDEP Community Assistance Program Unit.

NJDEP Dam Safety Section

The NJDEP Dam Safety Section under the Bureau of Dam Safety and Flood Control has responsibility for overseeing dam safety in the State. In 1912, the New Jersey legislature passed a series of safety regulations related to the construction, repair, and inspection of existing and proposed dams in the State. In 1981, the law was amended and became the Safe Dam Act, N.J.S.A. 58:4. Eventually in 1985, the Dam Safety Standards, N.J.A.C. 7:20 regulations were passed eventually leading to the Dam Safety Section.

The primary goal of the program is to ensure the safety and integrity of dams in New Jersey and, thereby, protect people and property from the consequences of dam failures. The Section also coordinates with the Division of State Police, local and county emergency management officials in the preparations and approval of Emergency Action Plans.

The Dam Safety Section reviews plans and specifications for the construction of new dams or for the alternation, repair, or removal of existing dams and must grant approval before the owner can proceed with construction. Engineers from the Section evaluate each project, investigate site conditions, and check recommended construction materials. During construction, engineers identify conditions that may require design changes, check for compliance with approved plans and specifications, and approve foundations before material is placed.

Existing dams are periodically inspected to assure that they are adequately maintained and owners are directed to correct any deficiencies found. The regulations require the owner to obtain a professional engineer to inspect their dams on a regular basis. These investigations include a comprehensive review of all pertinent material contained in the Department's files, a visual inspection, technical studies when necessary, and the preparation of a comprehensive report (NJDEP 2012a).

The owners or operators of all dams which raise the waters of any stream more than 70 feet above its usual mean low-water height or which impound more than 10,000 acre-feet of water shall have a regular inspection performed annually and formal inspections performed every three years by a New Jersey licensed professional engineer obtained by the owner. In addition, these inspections must be attended by a professional engineer assigned from the NJDEP.

Division of Water Supply and Geoscience

The Division of Water Supply and Geoscience (Water Supply) works to ensure adequate, reliable and safe water supply is available for the future. This goal is accomplished through the regulation of ground and surface water diversions, permitting of wells, permitting of drinking water infrastructure, monitoring of drinking water quality and technical support for water systems to achieve compliance with all Federal and State standards. In addition, Water Supply staff act in a support role during an emergency situation to provide technical assistance, as needed to re-establish safe and adequate public water supplies.



Water Supply staff provides technical assistance to assist water systems during water supply emergencies and to address routine non-compliance from significant deficiencies or poor water quality test results. The Drinking Water State Revolving Fund (DWSRF) program assists water systems in financing the cost of infrastructure through the use of federal and New Jersey Infrastructure Trust funds. Additionally, Water Supply provides operator licensing and training support as well as financial assistance through the DWSRF program.

Water Resource Management

The Water Pollution Management Element is responsible for protecting New Jersey's surface and ground waters from pollution caused by improperly treated wastewater and its residuals. This is accomplished primarily through the implementation of the New Jersey Pollutant Discharge Elimination System (NJPDES) permit program. This includes publicly owned treatment facilities (e.g. sanitary sewerage plants) and privately owned facilities (e.g. industrial facilities) as well as facilities that discharge stormwater (e.g. municipalities and highway agencies) and stormwater related to development. The NJPDES program also regulates discharges to ground water (e.g. septic systems) and the proper management of any residuals that are generated as part of the treatment process. The varied ownership of infrastructure components is often a complicating factor in the regulation of these entities (e.g. ownership of a treatment facility by a public entity and sewer mains by a different municipal entity). The total universe of NJPDES permits includes over 7500 permits. The Programs engineering and environmental specialist staff provide technical assistance in the development, interpretation and implementation of permit conditions.

New Jersey Department of the State - Office of Planning Advocacy (OPA) – Business Action Center

Supports and coordinates planning throughout NJ to protect the environment, mitigate development hazards and guide future growth into compact, mixed use development and redevelopment while fostering a robust long-term economy. The Office implements the goals of the State Development and Redevelopment Plan to achieve comprehensive, long term planning; and integrates that planning with programmatic and regulatory land use decisions at all levels of government and the private sector.

New Jersey Geological and Water Survey

Evaluates geologic, hydrogeologic and water quality data to manage and protect water resources, to identify natural hazards and contaminants, and to provide mineral resources including offshore sands for beach nourishment. Information provided by the survey includes GIS data and maps of geology, topography, groundwater and aquifer recharge. In addition the data tracks wellhead protection areas, aquifer thicknesses, properties and depths, groundwater quality, drought, geologic resources, and hazards such as earthquakes, abandoned mines, karst-influenced sinkholes and landslides. Equivalent of three work days is available to counties and/or municipalities upon written or electronic request to the State Geologist.

Rutgers University

Office of the New Jersey's State Climatologist

The ONJSC generates and archives climate data. Generated data are from the NJ Weather and Climate Network (NJWxNet), an assemblage of 55 automated weather stations situated throughout New Jersey. A decade or more of hourly observations are available from some of the stations, while others have shorter records. Since fall 2012 observations are available on a five-minute basis.

Along with these records, ONJSC archives or has ready access to National Weather Service (NWS) Cooperative Weather Station data. These are daily observations from several dozen stations at any given time over the past century plus. Individual stations have as many as 120 years of data; others have come and gone since the late 19th century. Another source of generated data is the Community Collaborative Rain, Hail and Snow Network



(CoCoRaHS), which includes daily observations of rain and snow from as many as several hundred volunteers throughout NJ.

New Jersey Climate Adaptation Alliance

The New Jersey Climate Adaptation Alliance was formed in response to a diverse group of stakeholders who came together on November 29, 2011 at Rutgers University to participate in the conference “Preparing NJ for Climate Change: A Workshop for Decision-Makers”.

The Alliance focuses on climate change preparedness for New Jersey in key impact sectors (public health; watersheds, rivers and coastal communities; built infrastructure; agriculture; and natural resources) through:

- Conducting outreach and education of the general public and targeted sectoral leaders;
- Developing recommendations for state and local actions through collaboration with policymakers at the state, federal and local levels;
- Undertaking demonstration and pilot projects in partnership with the private sector, local governments, non-governmental organizations, and others;
- Identifying science, research and data needs; and
- Developing capacity for implementation of preparedness measures and documentation of best practices (Rutgers University 2014).

NJADAPT is a collaborative effort of scientists and data managers in academia, government, the private sector and NGO community who have developed a strategic plan for a New Jersey platform to host and apply climate science impacts and data. NJADAPT includes a flood exposure profile for community discussions about hazard impacts; NJ Flood Mapper which is a tool for flooding hazards and sea level rise; and Getting to Resilience, a tool used to help communities reduce vulnerability and increase preparedness. NJADAPT can be accessed at <http://www.njadapt.org/>

County and Local Administrative and Technical Capabilities

Cape May County Office of Emergency Management

The Cape May County Office of Emergency Management (CMCOEM) coordinates multi-agency responses to emergencies and disasters within Cape May County. It is responsible for alerting and notifying appropriate agencies when disaster strikes; coordinating all agencies that respond; ensuring resources are available and mobilized in times of disaster; developing preparedness plans and procedures for response to and recovery from disasters; and developing and providing materials for the public.

The mission of the CMCOEM is to support the countywide emergency response partners and provide critical incident management support by delivering professional and exemplary service. CMCOEM accomplishes this support by:

- Providing a comprehensive and integrated emergency management system that coordinates and supports community resources to protect lives, property and the environment through mitigation, preparedness, response and recovery from all natural and man-made hazards, disasters, and national security crises that may impact Cape May County;
- Providing effective and professional assistance to other county departments and all Cape May County Municipalities by providing guidance with emergency planning and preparation;
- Providing the highest level of emergency service(s) support to all of the emergency response disciplines;



- Providing specialized emergency medical response for our law enforcement, EMS, Fire and Hazardous Materials Response Team (HAZMAT); and,
- Providing quality educational and training programs as well as maintaining an effective Public/Private Partnership which supports a “whole community approach.”

The CMCOEM staffs the Emergency Operations Center (EOC) which is a facility that provides coordinated emergency response, and also acts as staff to the liaison to the New Jersey Office of Emergency Management. They provide support for local emergency management, emergency medical services, law enforcement, and fire agencies. Additionally, the CMCOEM is responsible for the following:

- Alerting and notifying appropriate agencies during emergencies and disasters.
- Ensuring resources are available and mobilized during large scale incidents.
- Developing preparedness plans and procedures for response to and recovery from emergencies and disasters.
- Developing and providing preparedness materials for the public.
- Management and oversight of the Cape May County Emergency Operations Center (a facility which manages and coordinates emergency response for significant incidents.)
- Partnership with the New Jersey Office of Emergency Management.

Cape May County Planning Department

The Cape May County Planning Department is the professional arm of the Cape May County Planning Board. The department is responsible for the day to day operations that carry out the functions of the Planning Board.

The Planning Department and Planning Board is responsible for developing and maintaining the County Comprehensive Plan, the most current version of which is dated February 2005.

The Planning Department occasionally assists municipal planning boards and other bodies such as Environmental Commissions in their planning efforts. In the past, the department has assisted local bodies by providing information on such diverse issues as:

- Land use trends
- New Jersey State Development and Redevelopment Plan
- Population
- Zoning practices

The County Planning Department houses and provides primary assistance to the County's Watershed Management Planning program. This 4-year program is funded by the New Jersey Department of Environmental Protection and tasks the citizens and interested groups within the County to create a Watershed Management Plan for the Cape May Watershed.

6.5.3 Fiscal Capabilities

Mitigation projects and initiatives are largely or entirely dependent on available funding. Cape May County, and its municipalities, are able to fund mitigation projects through existing local budgets, local appropriations (including referendums and bonding), and through a range of Federal and State loan and grant programs. Additional information on funding sources may be found in the 2014 New Jersey State Hazard Mitigation Plan.

Federal and State Fiscal Capabilities



Federal Hazard Mitigation Funding Opportunities

Federal mitigation grant funding is available to all communities with a current hazard mitigation plan (this plan); however most of these grants require a “local share” in the range of 10-25% of the total grant amount. The FEMA mitigation grant programs are described below.

Hazard Mitigation Grant Program (HMGP)

The HMGP is a post-disaster mitigation program. It is made available to states by FEMA after each Federal disaster declaration. The HMGP can provide up to 75% funding for hazard mitigation measures. The HMGP can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration or that will reduce the likely damage from future disasters. Examples of projects include acquisition and demolition of structures in hazard prone areas, flood-proofing or elevation to reduce future damage, minor structural improvements and development of state or local standards. Projects must fit into an overall mitigation strategy for the area identified as part of a local planning effort. All applicants must have a FEMA-approved Hazard Mitigation Plan (this plan).

Applicants who are eligible for the HMGP are state and local governments, certain nonprofit organizations or institutions that perform essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for the HMGP; a local government must apply on their behalf. Applications are submitted to NJOEM and placed in rank order for available funding and submitted to FEMA for final approval. Eligible projects not selected for funding are placed in an inactive status and may be considered as additional HMGP funding becomes available.

Flood Mitigation Assistance (FMA) Program

The FMA combines the previous Repetitive Flood Claims and Severe Repetitive Loss Grants into one grant program. FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. The FMA is funded annually; no federal disaster declaration is required. Only NFIP insured homes and businesses are eligible for mitigation in this program. Funding for FMA is very limited and, as with the HMGP, individuals cannot apply directly for the program. Applications must come from local governments or other eligible organizations. The federal cost share for an FMA project is 75%. At least 25% of the total eligible costs must be provided by a non-federal source. Of this 25%, no more than half can be provided as in-kind contributions from third parties. At minimum, a FEMA-approved local flood mitigation plan is required before a project can be approved. FMA funds are distributed from FEMA to the state. NJOEM serves as the grantee and program administrator for FMA.

Pre-Disaster Mitigation (PDM) Program

The PDM program is an annually funded, nationwide, competitive grant program. No disaster declaration is required. Federal funds will cover 75% of a project’s cost up to \$3 million. As with the HMGP and FMA, a FEMA-approved local Hazard Mitigation Plan is required to be approved for funding under the PDM program.

Federal and State Disaster and Recovery Assistance Programs

Following a disaster, various types of assistance may be made available by local, state and federal governments. The types and levels of disaster assistance depend on the severity of the damage and the declarations that result from the disaster event. Among the general types of assistance that may be provided should the President of the United States declare the event a major disaster are the following:



Individual Assistance (IA)

IA provides help for homeowners, renters, businesses and some non-profit entities after disasters occur. This program is largely funded by the U.S. Small Business Administration. For homeowners and renters, those who suffered uninsured or underinsured losses may be eligible for a Home Disaster Loan to repair or replace damaged real estate or personal property. Renters are eligible for loans to cover personal property losses. Individuals may borrow up to \$200,000 to repair or replace real estate, \$40,000 to cover losses to personal property and an additional 20% for mitigation. For businesses, loans may be made to repair or replace disaster damages to property owned by the business, including real estate, machinery and equipment, inventory and supplies. Businesses of any size are eligible. Non-profit organizations such as charities, churches, private universities, etc. are also eligible. An Economic Injury Disaster Loan provides necessary working capital until normal operations resume after a physical disaster. These loans are restricted, by law, to small businesses only.

Public Assistance (PA)

PA provides cost reimbursement aid to local governments (state, county, local, municipal authorities and school districts) and certain non-profit agencies that were involved in disaster response and recovery programs or that suffered loss or damage to facilities or property used to deliver government-like services. This program is largely funded by FEMA with both local and state matching contributions required.

Small-Business Administration (SBA) Loans

Small Business Administration (SBA) provides low-interest disaster loans to homeowners, renters, business of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.

Homeowners may apply for up to \$200,000 to replace or repair their primary residence. Renters and homeowners may borrow up to \$40,000 to replace or repair personal property-such as clothing, furniture, cars, and appliances – damaged or destroyed in a disaster. Physical disaster loans of up to \$2 million are available to qualified businesses or most private nonprofit organizations.

Department of Homeland Security

The Homeland Security Grant Program (HSGP) plays an important role in the implementation of the National Preparedness System by supporting the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient nation. The FY 2013 HSGP supports core capabilities across the five mission area of Prevention, Protection, Mitigation, Response, and Recovery based on allowable cost. HSGP is comprised of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and the Operation Stonegarden (OPSG). Together, these grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration.

Community Development Block Grants (CDBG)

CDBG are federal funds intended to provide low and moderate-income households with viable communities, including decent housing, as suitable living environment, and expanded economic opportunities. Eligible activities include community facilities and improvements, roads and infrastructure, housing rehabilitation and preservation, development activities, public services, economic development, planning, and administration. Public improvements may include flood and drainage improvements. In limited instances, and during the times of “urgent need” (e.g. post disaster) as defined by the CDBG National Objectives, CDBG funding may be used to acquire a property located in a floodplain that was severely damaged by a recent flood, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event.



Community Development Block Grants (CDBG)-DR

The National Disaster Resilience Competition will make \$1 billion available to communities that have been struck by natural disasters in recent years. The competition will promote risk assessment and planning and will fund the implementation of innovative resilience projects to better prepare communities for future storms and other extreme events. Funding for the competition is from the Community Development Block Grant disaster recovery (CDBG-DR) appropriation provided by the Disaster Relief Appropriations Act, 2013 (PL 113-2).

Federal Highway Administration - Emergency Relief

The Federal Highway Administration Emergency Relief is a grant program that may be used for repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of a disaster.

Federal Transit Administration - Emergency Relief

The Federal Transit Authority Emergency Relief is a grant program that funds capital projects to protect, repair, reconstruct, or replace equipment and facilities of public transportation systems. Administered by the Federal Transit Authority at the U.S. Department of Transportation and directly allocated to MTA and Port Authority. This transportation-specific fund was created as an alternative to FEMA PA.

Homeownership Repair and Rebuilding Fund

The Homeownership Repair and Rebuilding Fund provides grants of up to an additional \$10,000 to eligible homeowners who have already qualified for FEMA housing assistance's maximum grant (\$31,900) and will not receive other assistance from private insurance or government agencies that would duplicate the grant's funding.

New Jersey Environmental Infrastructure Trust

The New Jersey Environmental Infrastructure Trust (NJEIT) is an independent State financing authority that provides low-interest rate loans to qualified borrowers in New Jersey for water quality and infrastructure projects. The NJEIT, partnering with NJDEP, offers short-term financing (bridge loans) and long-term disaster-recovery loan assistance.

New Jersey Economic Development Authority

The New Jersey Economic Development Authority (NJEDA) is an independent State agency that provides tax incentives to foster development and employment growth and retention, financing for small and mid-sized businesses, revitalizes communities through redevelopment initiatives, and supports entrepreneurial development by providing access to training and mentoring programs. With its large portfolio of some 30 varied programs and services, NJEDA can assist businesses, non-profits and developers to access capital, including tax-exempt and taxable bond financing, loans, loan guarantees, and business and tax incentives.

New Jersey Redevelopment Authority

The New Jersey Redevelopment Authority (NJRA) is an independent State financing authority committed exclusively to the redevelopment of New Jersey's urban areas. NJRA offers several financing resources including site acquisition funding, predevelopment assistance, several development assistance resources and technical assistance.

New Jersey Housing and Mortgage Finance Agency

The New Jersey Housing and Mortgage Finance Agency (NJHMFA) is an independent State financing authority that provides affordable home ownership and housing opportunities for New Jersey residents by funding affordable home mortgages for first-time home buyers, promoting construction and rehabilitation of rental



housing, and encouraging mixed-income owner-occupied housing growth. HMFA provides low-interest financing and administers Low Income Housing Tax Credits for the State of New Jersey's low and moderate income communities.

New Jersey Department of Community Affairs

The New Jersey Department of Community Affairs (NJCA) is a State agency created to provide administrative guidance, financial support and technical assistance to local governments, community development organizations, businesses and individuals to improve the quality of life in New Jersey. NJCA offers a wide range of programs, funding and services that respond to issues of public concern including fire and building safety, housing production, community planning and development, and local government management and finance. Among other funding sources, NJCA administers CDBG funding and is typically the CDBG-DR funding recipient for the State of New Jersey.

Rehabilitation, Reconstruction, Elevation and Mitigation (RREM) Program

As a result of the damages brought on by Superstorm Sandy, the State of New Jersey has allocated \$1.1 billion in federal funds to help eligible homeowners repair or rebuild their Sandy-impacted homes. The New Jersey Department of Community Affairs (NJCA) administers the RREM Program with federal funding provided through Community Disaster Block Grant Disaster Recovery (CDBG-DR) funds allocated to New Jersey by the U.S. Department of Housing and Urban Development.

The RREM Program provides grant awards to the primary residences of homeowners for activities necessary to restore their homes damaged by storms, including reconstruction, rehabilitation, elevation, and/or other mitigation activities. The RREM Program ensures that homeowners participating in the program are able to comply with federal elevation requirements for structures located in floodplains.

The RREM Program provides eligible homeowners with grants up to \$150,000. The program is intended to "fill the gap" between the cost of repairs and other funds the owner has received to repair the structure. The calculation of RREM assistance takes into consideration the cost of repairs and amounts the homeowner has received from other sources (FEMA, SBA, and non-profit organizations).

The RREM Program provides the homeowner with a Housing Advisor and a RREM Project Manager, assisting the homeowner through the grant process. The Housing Advisor guides the homeowner through the RREM Program and assists with eligibility determination, application processing and execution of grant awards. The Project Manager works with the homeowner to provide details and offer technical assistance for the completion of the homeowner's scope of work to make sure it complies with the construction standards of the Program. The Project Manager also inspects the construction while it is in progress and approves payment requests as construction is completed.

Low-to-Moderate (LMI) Income Homeowners Rebuilding Program

The LMI Income Homeowners Rebuilding Program was funded with \$40 million in U.S. Department of Housing and Urban Development CDBG-DR funds. Of the \$40 million, \$10 million was earmarked for substantially damaged manufactured homes. When the application period ended (March 20, 2015), a computer randomization determined priority of grant eligibility. Homes that were substantially damaged during Superstorm Sandy, more than 50% of the pre-storm value of the home, were given priority.

The LMI Income Program was designed to provide reconstruction, rehabilitation and elevation assistance to homeowners of low-to-moderate income who were impacted by Superstorm Sandy and whose damaged primary residence is located in one of the nine impacted counties. The program is also designed to serve LMI homeowners of Limited English Proficiency and owners of Manufactured Housing Units, as well as those LMI



homeowners who did not apply for the RREM Program. LMI Program eligibility requirements include the following:

- Homeowner must have registered with FEMA.
- Homeowner must have owned and occupied the damaged home at the time of the storm.
- The damaged home must have served as the homeowner's primary residence.
- The damaged home must be located in one of the nine most impacted counties of Atlantic, Bergen, Cape May, Essex, Hudson, Middlesex, Monmouth, Ocean, or Union.
- The damaged home must have sustained Sandy-related damage of at least \$8,000 or had more than one foot of water on the first floor.
- Homeowner who received federal disaster recovery assistance for a previous federally declared flood disaster by law must have continuously maintained flood insurance since receiving the federal disaster recovery assistance.
- Homeowner must qualify as low- to moderate-income based on household adjusted gross annual income at the time application was submitted. Adherence to income limits is required for eligibility for the duration of the program.

NJDEP Bureau of Coastal Engineering Beach Nourishment

The Bureau of Coastal Engineering, in cooperation with the U.S. Army Corps of Engineers, provides beach nourishment and re-nourishment projects for the purpose of restoring New Jersey's beaches along our coastline. Depending on the purpose and location of the project, funding may be available from several sources. For federal beachfill projects, the federal government contributes 65% of the project cost while the remaining 35% is divided into a cost-share, with the state contributing 75% and the local governments contributing the remaining 25%. Non-federal beachfill projects are funded through a state/local cost-share, with the state contributing 75% and the local governments contributing 25%. All funding is provided through the Shore Protection Fund (N.J.S.A. 13:19-16 et seq.), which ensures the critical funding needed annually to continue the beach nourishment program and protect New Jersey's coastal communities. (<http://www.nj.gov/dep/shoreprotection/nourishment.htm>)

County and Local Fiscal Capabilities

Cape May County Open Space Funding

On November 9th, 1989, the voters of Cape May County approved by a 2 - 1 margin a ballot question endorsing the establishment of a trust fund to preserve open space and agricultural land. The trust is funded by a County property tax of 1 cent per 100 dollars of assessed valuation and currently generates approximately \$1.3 million a year. Since its inception, the program has preserved approximately 4,000 acres of open space and farmland (almost 5 square miles). From 1989 to 2015, the County was successful in purchasing 1,251 acres of open space (\$27,050,304 spent) and deed restricting 3,163 acres of farmland (\$35,147,903 spent). This has resulted in the permanent preservation of 4,414 acres through the utilization of nearly \$62 million of Trust Fund dollars.

Capital Improvement Plans

Capital Improvement Plans outline capital spending and investments necessary for public improvements. Many municipalities in Cape May County have Capital Improvement Plans. These plans and budgets have been and may continue to be used to fund mitigation projects and demonstrate integration into daily operations. Refer to the jurisdictional annexes in Section 9 for further details.



6.6 MITIGATION STRATEGY DEVELOPMENT AND UPDATE

As required by FEMA, the County and participating municipalities completed a comprehensive evaluation of the mitigation strategies and actions from the 2010 HMP and reported on the status of each. Their update may be found in each jurisdictional annex (Section 9). In addition, the County and participating municipalities were provided the opportunity to include new strategies or actions to include in the 2016 HMP Update. New actions were prioritized to ensure they are cost-effective, environmentally sound, and technically feasible using the methodology outlined below.

6.6.1 Update of Municipal Mitigation Strategies

To evaluate progress on local mitigation actions, each municipality was tasked to review and provide the status of their local mitigation strategy in the 2010 FEMA-approved Cape May County HMP, via a Mitigation Action Plan Review Worksheet. Each worksheet was pre-populated with those actions identified for their jurisdiction in the prior plan. For each action, municipalities were asked to indicate the status of each action (“No Progress/Unknown,” “In Progress/Not Yet Complete,” “Continuous,” “Completed,” “Discontinued”), and provide review comments on each. Municipalities were requested to quantify the extent of progress, and provide reasons for the level progress or why actions were discontinued. Each jurisdictional annex provides a table identifying their prior mitigation strategy, the status of those actions and initiatives, and their disposition within their updated strategy.

Local mitigation actions identified as “Complete” and those actions identified as “Discontinued,” have been removed from the updated strategies. Those local actions that municipalities identified as “No Progress/Unknown,” “In Progress/Not Yet Complete,” as well as certain actions/initiatives identified as “Continuous,” have been carried forward in their local updated mitigation strategies. Municipalities were asked to provide further details on these projects to help better define the projects, identify benefits and costs, and improve implementation.

Certain continuous or ongoing strategies represent programs that are, or since the 2010 plan have become, fully integrated into the normal operational and administrative framework of the community. Such programs and initiatives have been identified within the Capabilities section of each annex, and removed from the updated mitigation strategy.

In February 2016, NJOEM and FEMA Region II provided the planning partnership with a mitigation strategy development workshop. The purpose of this workshop was to 1) evaluate progress on previously identified mitigation actions from the 2010 HMP; 2) review and evaluate a comprehensive range of mitigation strategies for consideration; 3) provide the tools and guide the municipalities on identifying and prioritizing selected mitigation actions and 4) discuss integration of mitigation activities into daily operations.

All participating municipalities were provided capture tools (“Mitigation Action Worksheet”) to further assist in assessing the risk, evaluating potential actions/projects (qualitative alternatives analysis), and identifying actions for implementation.

The County and municipalities identified projects that have been submitted to NJOEM for grant funding, including projects for which Letters of Intent (LOI) and grant applications have been submitted under the Hurricane Sandy Hazard Mitigation Grant Program. In general, LOI/application-based projects submitted directly by the communities are identified within their updated mitigation strategies. Communities may also have included other LOI/application-based projects submitted by special-purpose districts (e.g. fire or school districts), local utilities, and hospitals and health care entities.



Throughout the planning process, members of the Steering Committee and the planning consultant worked directly with each community (phone, email, local support meetings) to assist with the development and update of their annex and include mitigation strategies, focusing on identifying well-defined, implementable projects with a careful consideration of benefits (risk reduction, losses avoided), costs, and possible funding sources (including mitigation grant programs).

As new additional potential mitigation actions, projects or initiatives became evident during the plan update process, including as part of the risk assessment update and as identified through the public and stakeholder outreach process (see Section 3), communities were made aware of these either through direct communication (local meetings, email, phone) or via their draft municipal annexes.

To help support the selection of an appropriate, risk-based mitigation strategy, each annex provides a summary of hazard vulnerabilities identified during the plan update process, either directly by municipal representatives, through review of available county and local plans and reports, and through the hazard profiling and vulnerability assessment process.

Concerted efforts were made to assure that municipalities develop updated mitigation strategies that included activities and initiatives covering the range of mitigation action types described in recent FEMA planning guidance (FEMA “Local Mitigation Planning Handbook” March 2013), specifically:

- **Local Plans and Regulations** - These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- **Structure and Infrastructure Projects** - 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** - These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- **Education and Awareness Programs** - 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 the National Flood Insurance Program and Community Rating System, StormReady (NOAA) and Firewise (NFPA) Communities.

In consideration of federal and state mitigation guidance, the Steering Committee recognized that all municipalities would benefit from the inclusion of certain mitigation initiatives. These include initiatives to address vulnerable public and private properties, including RL and SRL properties; initiatives to support continued and enhanced participation in the NFIP; improved public education and awareness programs; and initiatives to support countywide and regional efforts to build greater local mitigation capabilities.

Overall, the following significant modifications to the mitigation strategy identification, update and documentation process were made:

- An overarching effort has been made to better focus local mitigation strategies to clearly defined, readily actionable projects and initiatives that meet the definition or characteristics of mitigation.
- Per NJOEM’s advice, broadly-defined mitigation objectives were maintained if the community felt it were appropriate to ensure eligibility in the future. For example, if a community has numerous repetitive loss properties however specific projects/property-owner interest is not solidified at this time, a general action was maintained to ensure future eligibility.



- Certain continuous or ongoing strategies that represent programs that are, or since the 2010 plan have become, fully integrated into the normal operational and administrative framework of the community have been identified within the Capabilities section of each annex, and removed from the updated mitigation strategy.

Overall a comprehensive range of specific mitigation initiatives were considered by each plan participant 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. Table 6-3 lists the common mitigation actions identified across a majority of the communities.



Table 6-3. Comprehensive Range of Mitigation Actions

Municipality	Acquisitions & Elevations	Drainage / Stormwater	Education & Awareness	Generators	Natural Systems Protection	Structure & Infrastructure	Local Plans & Regulations
Cape May County	X	X	X	X	X	X	X
Avalon Borough	X	X	X	X	X	X	X
Cape May City	X	X	X	X	X	X	X
Cape May Point Borough	X	X	X		X		X
Dennis Township	X	X	X	X	X	X	X
Lower Township	X	X	X		X	X	X
Middle Township	X	X	X	X		X	X
North Wildwood City	X	X	X		X	X	X
Ocean City	X	X	X		X	X	X
Sea Isle City	X	X	X		X	X	X
Stone Harbor Borough	X	X	X	X	X	X	X
Upper Township	X	X	X	X	X	X	X
West Cape May Borough	X	X	X	X	X	X	X
West Wildwood Borough	X	X	X	X		X	X
Wildwood City	X	X	X	X		X	X
Wildwood Crest Borough	X	X	X	X	X	X	X
Woodbine Borough	X	X	X	X		X	X



6.6.2 Update of County Mitigation Strategies

The update of the county-level mitigation strategies was very similar to the municipal update. It included a review of progress on the actions/initiatives identified in the 2010 HMP, using a process similar to that used to review municipal mitigation strategy progress. The County, through their various department representatives, was provided with a Mitigation Action Plan Review Worksheet identifying all of the county-level actions/initiatives from the 2010 plan. For each action, relevant county representatives were asked to indicate the status of each action (“No Progress/Unknown,” “In Progress/Not Yet Complete,” “Continuous,” “Completed,” “Discontinued”), and provide review comments on each.

Projects/initiatives identified as “Complete,” as well as though actions identified as “Discontinued,” have been removed from this HMP update. Those actions the county has identified as “No Progress/Unknown,” “In Progress/Not Yet Complete,” or “Continuous” have been carried forward in the County’s updated mitigation strategy.

Throughout the course of the HMP update process, additional regional and county-level mitigation actions have been identified. These were identified through:

- Review of the results and findings of the updated risk assessment;
- Review of available regional and county plans, reports and studies;
- Direct input from county departments;
- Direct input from regional, county and local stakeholders.

6.6.3 Enhanced Mitigation Strategy

Concurrent with the 2016 HMP update, Cape May County initiated a regional approach to develop an enhanced RL/SRL mitigation strategy. The overall goal was to generate progress and move towards implementation of previously identified county and municipal 2010 actions to mitigate flood-vulnerable properties by: 1) educating municipalities and RL/SRL property owners on potential mitigation project alternatives; and 2) gage RL/SRL property-owner interest in participating in a FEMA FMA acquisition grant application. The following outlines the enhanced mitigation strategy development process.

Outreach

Cape May County collected data, conducted outreach, gained political support, and determined property-owner interest and provided their most severely-floodprone residents options to be relieved of inevitable future flood losses.

As part of the data gathering process, Cape May County requested updated RL and SRL property statistics from NJOEM and FEMA Region 2 with the Biggert-Waters 2012 definition for FMA grant opportunities applied. Many of these properties are located within close proximity to the Atlantic Ocean or its bay and have experienced flood losses as a result of the recent 1998, 2011 and 2012 events. This list was used as a basis to conduct outreach at the municipal level, followed by outreach to individual property owners.

Municipal Outreach

As discussed in Section 3 of this HMP update, in April 2016, the County conducted two municipal meetings to discuss the upcoming FEMA HMA grant opportunity, including FMA grant-eligible projects and the responsibilities of the municipalities and homeowners regarding elevation projects (refer to Table 3-3 for further details on these meetings and their participants).



If a community had an RL or SRL property, Cape May County OEM sent a letter directly to their elected officials to formally announce the FEMA grant opportunity and to solicit their interest. The letter indicated that Cape May County would lead the outreach to the identified RL and SRL property owners and, should there be sufficient property-owner interest, manage the grant application development with limited municipal responsibilities. The County communicated that if the project is awarded by FEMA, the County will continue to manage the project.

Each municipality that supported the elevation of RL and SRL properties and wanted to participate in a county-wide FEMA FMA grant application, was requested to submit a municipal agreement letter. This letter documents their intent to participate and grants the county authorization to proceed with the grant opportunity. The letter also documents the municipality’s agreement to provide municipal-data and information as needed (e.g., tax assessor data, historic flood loss data), include the activity as a new action in their jurisdictional annex of the HMP update, and if awarded, maintain any acquired open space in perpetuity.

Mr. Martin Pagliughi, Cape May County OEM Director, reached out to each municipality individually to solicit interest and answer questions. As a result of this outreach effort, five municipalities submitted letters of intent to participate in a FEMA FMA grant application. The municipalities included:

- City of Cape May
- North Wildwood
- Ocean City
- Sea Isle City
- Stone Harbor

Property-Owner Outreach

Once municipal authorization was received, the five municipalities provided direct U.S. Mail outreach to each RL and SRL property owner, using the community’s best available property owner contact information (e.g. the latest address the community uses for providing critical legal information such as tax assessment information). The letter described the mitigation alternative acquisition, the upcoming FEMA FMA funding opportunity, and announced two informational meetings being held to obtain further information. In total, two homeowner meetings were conducted in April 2016 as summarized in Table 6-4.

The RL/SRL-property owner informational meetings included a discussion of the FEMA FMA grant opportunity and the priorities identified by FEMA. It also covered the property elevation process and the required documentation needed to participate in an application. Refer to the meeting agendas in Appendix B.

Overall, over 50 RL, SRL and non-RL property owners expressed interest in being elevated, completed the Notice of Voluntary Interest form, had current NFIP-flood insurance, and would be willing to be a part of a FEMA FMA grant application. This information was provided back to the municipalities to consider during the update of their mitigation strategy and to support potential mitigation actions.

Table 6-4. Summary of the Enhanced RL/SRL Mitigation Strategy Outreach

Date	Activity/ DMA 2000 Requirement	Key Outcomes/Purpose	Participants
April 9, 2016	1b, 2, 4b, 5b, 5c	Municipal outreach to FMA RL/SRL property owners – Venue: Ocean City	See Appendix D
April 16, 2016	1b, 2, 4b, 5b, 5c	Municipal outreach to FMA RL/SRL property owners – Venue: City of Wildwood	See Appendix D



Note: FMA = Flood Mitigation Assistance; HC = Hunterdon County; WC = Warren County
Each number in column 2 identifies specific DMA 2000 requirements, as follows:

- 1b – Public Participation
- 2 – Planning Process – Documentation of the Planning Process
- 4b – Mitigation Strategy – Identification and Analysis of Mitigation Measures
- 5b – Plan Maintenance Procedures – Implementation through Existing Programs
- 5c – Plan Maintenance Procedures – Continued Public Involvement

6.6.4 Mitigation Strategy Evaluation and Prioritization

Section 201.c.3.iii of 44 CFR requires an action plan describing how the actions identified will be prioritized. Recent FEMA planning guidance (March 2013) identifies a modified STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) mitigation action evaluation methodology that uses a set of 10 evaluation criteria suited to the purposes of hazard mitigation strategy evaluation. This method provides a systematic approach that considers the opportunities and constraints of implementing a particular mitigation action.

Based on this guidance, the Steering Committee has adopted and applied an action evaluation and prioritization methodology which includes an expanded set of 14 criteria to include the consideration of cost-effectiveness, availability of funding, anticipated timeline, and if the action addresses multiple hazards.

The 14 evaluation/prioritization criteria used in the 2016 update process are:

- 1) Life Safety – How effective will the action be at protecting lives and preventing injuries?
- 2) Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
- 3) Cost-Effectiveness – Are the costs to implement the project or initiative commensurate with the benefits achieved?
- 4) Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.
- 5) Political – Is there overall public support for the mitigation action? Is there the political will to support it?
- 6) Legal – Does the municipality have the authority to implement the action?
- 7) Fiscal - Can the project be funded under existing program budgets (i.e., is this initiative currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?
- 8) Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?
- 9) Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
- 10) Administrative – Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?
- 11) Multi-hazard – Does the action reduce the risk to multiple hazards?
- 12) Timeline - Can the action be completed in less than 5 years (within our planning horizon)?
- 13) Local Champion – Is there a strong advocate for the action or project among the jurisdiction’s staff, governing body, or committees that will support the action’s implementation?
- 14) Other Local Objectives – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?



Participating jurisdictions were asked to use these criteria to assist them in evaluating and prioritizing all mitigation actions identified in the 2016 update (previously identified actions that were carried forward and new mitigation actions). Specifically, for each mitigation action, the jurisdictions were asked to assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria, defined as follows:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Further, jurisdictions were asked to provide a brief summary of the rationale behind the numeric rankings assigned, as applicable. The numerical results of this exercise were then used by each jurisdiction to help prioritize the action or strategy as “Low”, “Medium,” or “High.” While this provided a consistent, systematic methodology to support the evaluation and prioritization of mitigation actions, jurisdictions may have additional considerations that could influence their overall prioritization of mitigation actions.

For the 2016 HMP update there has been an effort to develop more clearly defined and action-oriented mitigation strategies. These local strategies include projects and initiatives that have been well-vetted, and are seen by the community as the most effective approaches to advance their local mitigation goals and objectives within their capabilities. As such, many of the initiatives in the updated mitigation strategy were ranked as “High” or “Medium” priority, as reflective of the community’s clear intent to implement, available resources notwithstanding. In general, initiatives that would have had “low” priority rankings were appropriately screened out during the local action evaluation process.

6.6.5 Benefit/Cost Review

Section 201.6.c.3iii of 44CFR requires the prioritization of the action plan to emphasize the extent to which benefits are maximized according to a cost/benefit review of the proposed projects and their associated costs. Stated otherwise, cost-effectiveness is one of the criteria that must be applied during the evaluation and prioritization of all actions comprising the overall mitigation strategy.

The benefit/cost review applied in for the evaluation and prioritization of projects and initiatives in this HMP update process was qualitative; that is, it does not include the level of detail required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) and Pre-Disaster Mitigation (PDM) grant programs. For all actions identified in the local strategies, jurisdictions have identified both the costs and benefits associated with project, action or initiative.

Costs are the total cost for the action or project, and may include administrative costs, construction costs (including engineering, design and permitting), and maintenance costs.

Benefits are the savings from losses avoided attributed to the implementation of the project, and may include life-safety, structure and infrastructure damages, loss of service or function, and economic and environmental damage and losses.

When available, jurisdictions were asked to identify the actual or estimated dollar value for project costs and associated benefits. Having defined costs and benefits allows a direct comparison of benefits versus costs, and a quantitative evaluation of project cost-effectiveness. Often, however, numerical costs and/or benefits have not been identified, or may be impossible to quantitatively assess.



For the purposes of this planning process, jurisdictions were tasked with evaluating project cost-effectiveness with both costs and benefits assigned to “High”, “Medium” and “Low” ratings. Where quantitative estimates of costs and benefits were available, ratings/ranges were defined as:

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

Where quantitative estimates of costs and/or benefits were not available, qualitative ratings using the following definitions were used:

Table 6-5. Qualitative Cost and Benefit Ratings

Costs	
High	Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (e.g., bonds, grants, and fee increases).
Medium	The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
Low	The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing program.
Benefits	
High	Project will have an immediate impact on the reduction of risk exposure to life and property.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
Low	Long-term benefits of the project are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

For some of the Cape May County initiatives identified, the planning partnership may seek financial assistance under FEMA’s HMGP or Hazard Mitigation Assistance (HMA) programs. These programs require detailed benefit/cost analysis as part of the application process. These analyses will be performed when funding applications are prepared, using the FEMA BCA model process. The planning partnership is committed to implementing mitigation strategies with benefits that exceed costs. For projects not seeking financial assistance from grant programs that require this sort of analysis, the planning partnership reserves the right to define “benefits” according to parameters that meet its needs and the goals and objectives of this HMP.