

SECTION 6. MITIGATION STRATEGY

This section presents mitigation actions for Rockland County to reduce potential exposure and losses identified as concerns in the Risk Assessment portion of this plan. The Steering Committee reviewed the Risk Assessment to identify and develop these mitigation actions, which are presented herein.

This section includes:

1. Background and Past Mitigation Accomplishments
2. General Planning Approach
3. Review and Update of Mitigation Goals and Objectives
4. Capability Assessment
5. Mitigation Strategy Development

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.

6.1 Background and Past Mitigation Accomplishments

In accordance with the requirements of the Disaster Mitigation Act of 2000 (refer to page 1-1 for more detail on DMA 2000), 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 plan update. 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 hazards. Examples of previous and ongoing actions and projects include the following:

- The County facilitated the development of the 2010 “Rockland County Multi-Jurisdictional Natural Hazard Mitigation Plan”. The current planning process represents the regulatory five-year plan update process, which includes participation of all municipal governments in the County, along with key County and regional stakeholders.
- All municipalities participating in this HMP update participate in the National Flood Insurance Program (NFIP), which requires the adoption of FEMA floodplain mapping and certain minimum standards for building within the floodplain.
- The following Rockland County jurisdictions have passed the Climate Smart Communities Pledge via resolution: County of Rockland; Town of Clarkstown; Town of Orangetown; Village of Montebello; Village of Haverstraw; Village of Nyack; Village of Piermont.
- Working in coordination with the NYS DEC, the Rockland County Soil and Water Conservation District (RC SWCD) and the Lower Hudson Coalition of Conservation Districts are implementing a project to inventory culverts and bridges, evaluate their suitability for fish passage and flood risk, and developing strategies to address those most critical issues. The inventory is included in Appendix H and the implementation of projects in the Town of Stony Point’s mitigation action plan.
- In June 2013, Governor Cuomo, as a result of Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy, set out to centralize recovery and rebuilding efforts in impacted areas of New York State. As a result of Tropical Storm Irene, Rockland County received funding through the Governor’s Office of Storm Recovery. The Towns of Clarkstown and Stony Point and the Village of Suffern all completed NY Rising Community Reconstruction Plans that identified different projects and strategies to support local recovery and resiliency efforts.
- Rockland County, the Town and Village of Haverstraw and the Village of West Haverstraw participated in a Community Resilience Building Workshop led by The Nature Conservancy in May 2017 with the

goal to foster collaboration with and among community stakeholders that will advance actions to reduce risks and build resilience.

- In 2015, Rockland County formed the Rockland Codes Initiative to fairly and impartially enforce codes and other ordinances of the County.
- The County and municipalities have implemented mitigation actions to protect critical facilities and infrastructure throughout the planning area.
 - An emergency generator was installed at the Highway Department Stony Point yard.
 - On October 28, 2012, Superstorm Sandy created a storm surge of up to 14 feet in Hudson River at the location of Haverstraw Bay. The resulting storm surge caused wide spread damage to Haverstraw Bay County Park, which include the total destruction of the 180' long x 10' wide pedestrian footbridge which crossed a man-made inlet. FEMA mitigation funds were used to replace the bridge with a more hardened structure. This project was completed in 2015.
 - A stream crossing assessment is in progress by RC SWCD to assess every culvert in connection with the Hudson River; assessed for size, flood resiliency and flood passability.
 - The Ramapo River, considered a sole source aquifer, provides drinking water to over 81,000 residents of Rockland County and northern New Jersey. The Rockland County Task Force on Water Resources Management, has contracted with Rutgers University to complete a Watershed Assessment and Management Plan for this tri-county resource (Orange, Rockland, Bergen). The plan will include both the Ramapo and Mahwah Rivers watershed area. The final plan will include recommendations on source water protection and improve water qualities of these waterways. Refer to the updated mitigation strategy for additional details.
 - The County has five weather stations are in place in the County; most recent was a weather station installed at Haverstraw Middle School. Weather Stations also have a camera and situational awareness of weather around the County and networked together.
 - The Rockland County Office of Fire and Emergency Services formed a Certified Emergency Response Team (CERT) two years ago. The CERT meets regularly and is conducting flood preparedness training in June 2017.
 - The Rockland County Office of Fire and Emergency Services purchased generators with lighting attachments to provide adequate illumination and security to portions of our downtown areas as well as provide essential lighting at heavily congested intersections during power outages as needed. Further, the portable generators enable the County to provide temporary emergency power to facilities in need during/post-events such as dialysis facilities, healthcare clinics, and adult/group home locations.
 - The Rockland County Highway Department increased the capacity of the Hollow Road drainage infrastructure; historically two commercial downstream establishments also flooded due to the undersized infrastructure.
 - The New City Dam analysis was conducted by the County Drainage Agency.
- In May 2017, Rockland County signed an Executive Order that will prohibit County departments from issuing permits for developments that have not complied with General Municipal Law. This Executive Order is discussed further below.
- Municipalities have actively participated in available mitigation grant funding opportunities to implement mitigation projects, as identified in their jurisdictional annexes in Chapter 9.
- Numerous studies have been conducted by Federal, State, County and local agencies/entities to examine natural hazards affecting Rockland County, and have been reviewed and incorporated into this plan update as appropriate (see Section 3 and References).
- As part of Rockland County's continued commitment to support communities participating in the National Flood Insurance Program (NFIP), in February 2018, the Rockland County Office of Fire and Emergency Services distributed education and awareness materials to all communities. This

correspondence included a summary of the last Community Assistance Visits (CAV) conducted, and information regarding an upcoming webinar regarding NFIP requirements. All NFIP Floodplain Administrators and municipal staff that support NFIP compliance were encouraged to attend.

6.2 General Mitigation Planning Approach

The overall approach used to update the County and local hazard mitigation strategies are based on FEMA and NYS 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
- NYS DHSES Hazard Mitigation Planning Standards, June 2014
- NYS HMP, 2014

The mitigation strategy update approach includes the following steps that are further detailed in later subsections 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
- Prepare an implementation strategy, including:
 - Identification of progress on previous County and local mitigation strategies
 - Development of updated County and local mitigation strategies, and
 - Prioritization projects and initiatives in the updated mitigation strategy

6.3 Review and Update of Mitigation Goals and Objectives

This section documents the efforts to develop hazard mitigation goals and objectives established to reduce or avoid long-term vulnerabilities to the identified hazards.

6.3.1 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.” The mitigation goals have been developed based on the risk assessment results, discussions, research, and input from amongst the committee, existing authorities, polices, programs, resources, stakeholders and the public.

For the purposes of this plan, goals and objectives are defined as follows:

Goals are general guidelines that explain what is to be achieved. They are usually broad, long-term, policy-type statements and represent global visions. Goals help define the benefits that the plan is trying to achieve. The success of the plan, once implemented, should be measured by the degree to which its goals have been met (that is, by the actual benefits in terms of hazard mitigation).

Objectives are short-term aims which, when combined, form a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable.

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.

During the 2016/17 plan update process, the Steering Committee reviewed the goals and objectives established in the 2010 HMP. These goals and objectives were reviewed in consideration of the hazard events and losses since the 2010 plan, the updated hazard profiles and vulnerability assessment, the goals and objectives established in the New York State 2014 HMP, County and local risk management plans, as well as direct input on how the County and municipalities need to move forward to best manage their hazard risk.

As a result of this review process, the Goals and Objectives for the HMP update have been significantly amended, as presented below and in Table 6-1.

Goal 1. Protect Life (*New*).

Goal 2. Protect property, including public and private property, critical facilities and infrastructure. (*Modified from NYS 2014 HMP – Goal 2*)

Goal 3. Increase education and awareness, and promote relationships with stakeholders, citizens, government officials, and property owners to develop opportunities for mitigation of natural hazards. (*Modified from NYS 2014 HMP – Goal 3*)

Goal 4. Encourage the development and implementation of long-term, cost-effective, and resilient mitigation projects to preserve or restore the functions of natural systems. (*NYS 2014 HMP – Goal 4*)

Goal 5. Build regional, County and local mitigation and related emergency management capabilities. (*Modified from 2010 Rockland County HMP Goal #2*)

Goal 6. Promote Local and Regional Sustainability (*New*)

Goal 7. Support comprehensive County and local mitigation through the integration of hazard mitigation planning into related County and local plans and programs. (*Incorporates the intent of 2010 Rockland County HMP Goal #1*)

Table 6-1. Rockland County Hazard Mitigation Plan Objectives

Obj. #	Objective Statement	Goal 1 - Protect Life	Goal 2 - Protect Property	Goal 3 - Increase Education/Awareness	Goal 4 - Preserve/Restore Natural Systems	Goal 5 - Build EM Capabilities	Goal 6 - Promote Sustainability	Goal 7 - Integration of HMP
O-1	Enhance early notification systems and communication infrastructure to provide adequate warning and information regarding all hazards.	X	X	X		X		
O-2	Review, strengthen and enforce existing building codes, ordinances and safety procedures to increase the resilience of construction to the impacts of hazards.	X	X	X		X	X	X
O-3	Identify and implement cost-effective structural and property protection projects to reduce the impacts from flooding including acquisition, elevation and relocation projects.	X	X	X	X	X	X	X
O-4	Develop and distribute public awareness materials about natural hazard risks, preparedness, and mitigation.	X	X	X	X	X	X	X
O-5	Ensure continuity of government operations, emergency services, and essential facilities and adequate supplies for emergency response services at the local level during and immediately after hazard events.	X	X	X		X	X	X
O-6	Strengthen communication and cooperation between public agencies, citizens, non-profit groups, and businesses to implement mitigation activities effectively.	X	X	X		X	X	X
O-7	Maintain and encourage ongoing relationships between state agencies and partners to play an active and vital role in preservation and restoration of vulnerable natural systems.	X	X	X	X		X	X
O-8	Pursue mitigation actions that will preserve or restore the environment's natural abilities to absorb the impacts of natural and man-made hazards.	X	X	X	X		X	X
O-9	Encourage smart growth, neighborhood revitalization and economic development with an awareness of the existence and location of natural hazard areas to mitigate impacts of hazards on life, property and the economy, while exploring sustainable development measures and preserving quality of life and existing community and neighborhood character.	X	X	X	X		X	X
O-10	Improve hazard data through participation in studies, research, and mapping to enhance information related to the impacts of hazards and related risks, vulnerability, and losses.	X	X			X	X	X
O-11	Continue to participate in state, regional and local programs and efforts that focus on practices that support or enhance resiliency.	X	X	X	X	X	X	X

Note: Goals are summarized in the table heading; refer to previous page for full mitigation goal. EM = Emergency Management

6.4 Capability Assessment

According to FEMA Mitigation Planning How-To Guide #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 County and participating municipalities identified and assessed their capabilities in the areas of: Planning and Regulatory, Administrative and Technical, and Fiscal. By completing this assessment, each jurisdiction 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;
- Actions deemed infeasible as they are 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 plan update process, all participating jurisdictions were tasked with developing or updating their capability assessment, paying particular attention to evaluating the effectiveness of these capabilities in supporting hazard mitigation, and identifying opportunities to enhance local capabilities.

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. Within each annex, participating jurisdictions 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.

A summary of the various federal, state, County and local planning and regulatory, administrative and technical, and fiscal programs available to promote and support mitigation and risk reduction in Rockland County are presented below.

6.4.1 Planning and Regulatory Capabilities - County and Local

Municipal Land Use Planning and Regulatory Authority

The County and municipalities have various land use planning mechanisms that can be leveraged to mitigate flooding and support natural hazard risk reduction. Specific County and local planning and regulatory capabilities are identified in their jurisdictional annexes in Section 9. The Rockland County Planning Department, Rockland Codes Initiative and Rockland Planning Federation all provide local land use planning support to the municipalities (see Section 6.4.3). The Rockland County Planning Department remains available to provide courtesy reviews and input to local Comprehensive Plan updates to ensure that they incorporate the information, findings and recommendations of this HMP as appropriate.

A primary function of the Planning Department is the review of site plans, subdivisions, variances, zone changes, zoning code amendments, special permits and other land use, zoning or environmental actions under the State mandated General Municipal Law (GML) application process. Planners also offer recommendations and guidance on local master plans and ordinance updates. The department performs a variety of tasks, focusing on topics related to housing, environmental and natural issues, historic and cultural resources, recreation and open space, and infrastructure.

In May 2017, Rockland County signed an Executive Order that will prohibit County departments from issuing permits for developments that have not complied with General Municipal Law. General Municipal Law requires towns and villages comply with the findings of the County Planning Commissioner or file a reason why a decision has not been made to comply. Failure to do so will result in the County not issuing permits for such uses as water and sewer connections, well permits, rooming house permits, drainage permits, road opening permits, issuance of new addresses and others.

Emergency and Evacuation Plans

The Rockland County Office of Fire & Emergency Services (OFES) plays a lead role in planning, mitigation, coordination, response and recovery for natural disasters, such as hurricanes, floods, and winter-weather storm events. The OFES maintains the Rockland County Comprehensive Emergency Management Plan (CEMP) that is reviewed bi-annually. The County CEMP contains Hurricane/Coastal Storm and Winter Storm annexes. Four of the five Towns have CEMPs (updated within the year); 6 of the 19 Villages have CEMPs and some Villages defer to the Town's plan. The OFES also maintains the Rockland County Continuity of Operations Plan (COOP).

Specific evacuation plans are identified in the Rockland County CEMP Hurricane/Coastal Storm Annex and Dam Safety Plans (Emergency Action Plans), as well within plans to evacuate portions of the County in the event of a radiological release at the Indian Point Nuclear Power Plant in Buchanan (Westchester County).

Local Waterfront Revitalization Program

The Waterfront Revitalization of Coastal Areas and Inland Waterways Act offers local governments the opportunity to participate in the State's Coastal Management Program (CMP), on a voluntary basis, by preparing and adopting a Local Waterfront Revitalization Program (LWRP), providing more detailed implementation of the State's CMP through use of such existing broad powers as zoning and site plan review (NYS Department of State 2017).

When an LWRP is approved by the New York State Secretary of State, State agency actions are required to be consistent with the approved LWRP to the maximum extent practicable. When the federal government concurs with the incorporation of an LWRP into the CMP, federal agency actions must be consistent with the approved addition to the CMP. Title 19 of NYCRR Part 600, 601, 602, and 603 provide the rules and regulations that implement each of the provisions of the Waterfront Revitalization of Coastal Areas and Inland Waterways Act including but not limited to the required content of an LWRP, the processes of review and approval of an LWRP, and LWRP amendments (NYS Department of State 2017).

A LWRP is both a plan and a program. It refers to both a planning document prepared by a municipality, as well as a program established to implement the plan. The LWRP may be comprehensive and address all issues that affect a community's entire waterfront or it may address the most critical issues facing a specific portion of its waterfront (NYS Department of State 2017).

A LWRP follows a step-by-step process by which a community can advance community planning from a vision to implementation. NYS Department of State developed two documents to assist communities in preparing their

LWRP plan. The documents can be found here: <https://www.dos.ny.gov/opd/programs/WFRevitalization/LWRP.html#approved>

In addition to landward development, water uses are subject to an ever-increasing array of use conflicts. These include conflicts between passive and active types of recreation, between commercial and recreational uses, and between all uses and the natural resources of a harbor. Increases in recreational boating, changes in waterfront uses, coastal hazards what to do with dredged materials, competition for space, climate change, and multiple regulating authorities, all make effective harbor management complex. These conflicts and a lack of clear authority to solve them have resulted in degraded natural and cultural characteristics of many harbors, and their ability to support a range of appropriate uses. As part of an LWRP, a harbor management plan can be used to analyze and resolve these conflicts and issues (NYS Department of State 2017).

An adopted and approved LWRP provides several benefits to communities:

- Clear direction – a LWRP reflects community consensus. It can significantly increase a community’s ability to attract appropriate development that will respect its unique cultural and natural characteristics.
- Technical assistance – a LWRP establishes a long-term partnership among local government, community-based organizations, and NYS. This provides a source of technical assistance to prepare and implement the community’s LWRP.
- State and federal consistency – state permitting, funding and direct actions must be consistent, to the maximum extent practicable, with an approved LWRP. Within federally defined coastal areas, federal agencies activities are also required to be consistent with an approved LWRP. This “consistency” provision is a strong tool that helps ensure all government levels work in unison to build a stronger economy and a healthier environment.
- Financial assistance – a LWRP presents a unified vision; it increases a community’s chance to obtain public and private funding for projects. Funding for both the development and implementation of LWRPs is available through grants from the NYS Environmental protection Fund, among other sources (NYS Department of State 2017).

After a draft LWRP is accepted by the community and DOS as complete, a formal review of the document is initiated by DOS to potentially affected State, federal, and local agencies. After the review process, reviews are made, if necessary, and then prepared for final approval. The approval of a LWRP is a three tier process involving adoption by the municipality, approval by the Secretary of State, pursuant to the Waterfront Revitalization of Coastal Areas and Inland Waterways Act, and, for municipalities within the state’s coastal area, concurrence by OCRM on its incorporation into the CMP (NYS Department of State 2017).

Any village, town or city can prepare a LWRP; however, only communities located along a designated waterway are eligible for grants from the Environmental Protection Fund Local Waterfront Revitalization program for its preparation and implementation. On an annual basis, the Department of State solicits grant applications from local governments for matching grants from the New York State Environmental Protection Fund's Local Waterfront Revitalization Program. Communities receive grant funding, through this program, for economic development (redevelopment, revitalization, etc.), updates of existing LWRPs, update of local codes and ordinances, and educational and outreach programs (NYS Department of State 2017).

Several Rockland County communities (Villages of Haverstraw, Nyack and Piermont) have LWRPs as identified within the Capability Assessment section of the municipal annexes (Section 9).

6.4.2 Planning and Regulatory Capabilities – State and Federal

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): Program Description). 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. Please refer to the Flood Hazard Profile in Section 5.4 for information on recent legislation related to reforms to the NFIP.

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).

All municipalities, except for the Village of New Square, actively participate in the NFIP. As of June 30, 2016, there were 1,656 NFIP policies in Rockland County. There have been 2,459 claims made, totaling approximately \$38.7 million for damages to structures and contents. There are 85 NFIP Repetitive Loss (RL) properties and 20 Severe Repetitive Loss (SRL) properties in the County. Further details on the County's flood vulnerability may be found in the flood hazard profile in Section 5.4.4.

Each jurisdictional annex (Section 9) summarizes each community's NFIP statistics, discusses their flood damage prevention ordinance, and lists the last Community Assistance Visit date (as per NYS DHSES). During the HMP update, we informed each community who their NFIP Floodplain Administrator (FPA) is as identified in their flood ordinance. We also conducted an interview with each NFIP FPA via in person, over the telephone, or through a questionnaire to gather the following information: flood vulnerability; resources; compliance history and regulatory information. The information received is summarized in each annex (Section 9).

Municipal participation in and compliance with the NFIP is supported at the federal level by FEMA Region II and the Insurance Services Organization (ISO), at the state-level by the New York State Division of Homeland Safety and Emergency Services (NYS DHSES). Additional information on the NFIP program and its implementation throughout the county may be found in the flood hazard profile (Section 5).

The state and municipalities within it may adopt higher regulatory standards when implementing the provisions of the NFIP. Specifically identified are the following:

Freeboard: By law, NYS requires Base Flood Elevation plus 2 feet (BFE+2) for all single- and two-family residential construction, and BFE+1 for all other types of construction. Communities may go beyond this requirement, providing for additional freeboard or requiring BFE+2 for all types of construction.

Cumulative Substantial Improvements/Damages: The NFIP allows improvements valued at up to 50% of the building's pre-improvement value to be permitted without meeting the flood protection requirements. Over the years, a community may issue a succession of permits for different repairs or improvement to the same structures. This can greatly increase the overall flood damage potential for structures within a community. The

community may wish to deem “substantial improvement” cumulatively so that once a threshold of improvement within a certain length of time is reached, the structure is considered to be substantially improved and must meet prevailing flood protection requirements.

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). Municipalities and the County as a whole could expect significant cost savings on premiums if enrolled in the CRS program.

Currently, no municipalities in Rockland County participate in the CRS program; however, several municipalities identified mitigation strategies to consider joining the CRS (refer to Section 9).

New York State Floodplain Management

There are two departments that have statutory authorities and programs that affect floodplain management at the local jurisdiction level in New York State: the New York State Department of Environmental Conservation (NYSDEC) and the Department of State’s Division of Code Enforcement and Administration (DCEA).

The NYSDEC is charged with conserving, improving, and protecting the state’s natural resources and environment, and preventing, abating, and controlling water, land, and air pollution. Programs that have bearing on floodplain management are managed by the Bureau of Flood Protection and Dam Safety, which cooperates with federal, state, regional, and local partners to protect lives and property from floods, coastal erosion, and dam failures. These objectives are accomplished through floodplain management and both structural and nonstructural means.

The Dam Safety Section is responsible for “reviewing repairs and modifications to dams, and assuring [sic] that dam owners operate and maintain dams in a safe condition through inspections, technical reviews, enforcement, and emergency planning.” The Flood Control Projects Section is responsible for reducing flood risk to life and property through construction, operation, and maintenance of flood control facilities.

The Floodplain Management Section is responsible for reducing flood risk to life and property through management of activities, such as development in flood hazard areas, and for reviewing and developing revised flood maps. The Section serves as the NFIP State Coordinating Agency and in this capacity is the liaison between FEMA and New York communities that elect to participate in the NFIP. The Section provides a wide range of technical assistance.

6.4.3 Administrative and Technical Capabilities - County and Local

Rockland County Office of Fire & Emergency Services

As noted above, the Rockland County OFES plays a lead role in planning, mitigation, coordination, response and recovery for natural disasters, such as hurricanes, floods, and winter-weather storm events. The OFES responds to natural disasters such as snowstorms, floods, and hurricanes; technical disasters such as chemical spills; and hazardous materials incidents. They provide 911 service for the residents of Rockland County where they dispatch fire companies and ambulance squads. They also conduct Indian Point drills on a regular basis.

The OFES oversees and equips specialized teams for hazardous materials, and technical rescue incidents. Physically housed within the training facility is the Rockland County Sheriff Dispatch Center, 44-Control; responsible for cellular 9-1-1, fire, ambulance dispatch along with specialized units such Haz-Mat, REACT and Technical Rescue.

The Indian Point Energy Center (IPEC) is a nuclear power plant located in Buchanan, NY, approximately 40 miles north of New York City in Westchester County. Rockland County is part of a multi-agency response plan related to the center, a portion of which is evacuation of residents from specifically identified areas within the County. The OFES staff is fully trained to respond to a nuclear event due to the proximity of the Entergy-owned IPEC.

Rockland County has developed an Access and Functional Needs Registry for residents with limited mobility or special needs, which might impact a timely response during an emergency.

The OFES considers the identification of the following to be of highest importance.

- The coordination with all municipalities and the importance of these items should again be captured within each municipal updated section.
- Identification of multiple options to temporarily house residents displaced due to natural disaster.
- Sites within multiple communities suitable for relocation or replacement of homes identified as unsuitable or located within an unsuitable area such as a floodplain.

Local Emergency Planning Committee - The local committee's primary responsibility was to develop an emergency response plan for Rockland County and to establish procedures for receiving and processing public requests for information concerning chemicals and chemical spills within the county. The County's hazardous materials response plan was completed in October 1988. The plan was rewritten in the fall of 1991 and is revised annually.

Rockland County Planning Department (RCPD)

The Rockland County Planning Department (RCPD) provides local land use planning support to the municipalities. Rockland planners encourage sustainable development among municipalities; that is, development that looks at the big picture, incorporating land-use and transportation planning measures together with the needs of the community. By definition, sustainability is, "an economic state where the demands placed upon the environment by the people and commerce can be met without reducing the capacity of the environment to provide for future generations."

It is the Rockland County Planning Department's goal and responsibility to appropriately guide municipal planning decisions, through the use of the guidelines set forth by the NYS General Municipal Law, the Official County Map and the County's Comprehensive Plan.

The Department provides guidance, through the combination of dedicated professionals and cutting-edge technology, to assist the County in maintaining a livable, sustainable suburban community.

A primary function of this division is the review of site plans, subdivisions, variances, zone changes, zoning code amendments, special permits and other land use, zoning or environmental actions under the State mandated General Municipal Law (GML) application process. Planners also offer recommendations and guidance on local master plans and ordinance updates. The division performs a variety of tasks, focusing on topics related to housing, environmental and natural issues, historic and cultural resources, recreation and open space, and infrastructure

Rockland County Highway Department

The Rockland County Highway Department has the responsibility for the administration, construction, maintenance, supervision, repair and care of approximately 340 lane miles (167 centerline miles) of roadways, 83 bridges and 115 culverts within the county jurisdiction. The department mission is to provide a safe, well maintained and efficient operation of the county highway and bridge system.

In addition, the department is responsible for:

- Annual pavement program (Overlay, Microseal and Chipseal) of County highways.
- Traffic, Highway and Bridge engineering along County highways.
- Plowing and Salting of County highways.
- Most signs fabrication, installation and maintenance along County highways.
- County Highway Pavement Marking.
- Highway permit issuance for construction activities such as driveways, utility installations, drainage installation etc. along county highway right-of-way.
- Monitor and Issuance of Drainage Agency's permits for construction activities within the jurisdiction of County Regulated Streams.
- Providing surveying and mapping services.
- Removing dead trees or trimming branches within the county highway right-of-way.
- Assisting the towns and villages with traffic engineering needs upon request.

To accomplish its responsibilities, the Rockland County Highway Department is divided into six divisions:

1. Engineering Division
2. Maintenance & Construction Division
3. Drainage Agency
4. Permits Division
5. Traffic Safety Division
6. Maps & Highway GIS Division

Engineering Division: The Highway Department's Engineering division is composed of licensed professional engineers, surveyors, engineering technicians and draftsmen. The Engineering Division plans, engineers, designs and constructs capital projects in conformance with the standards and specifications of the American Association of State Highway and Transportation Officials and the New York State Department of Transportation. This includes responsibility for:

- Prioritizing, planning and budgeting for road, bridge and culvert reconstruction/rehabilitation and replacement projects.
- Coordinating capital project planning and budgeting with County Planning Department to obtain federal and state funding.
- Project management.
- Consultant selection and management.
- Survey and layout for contracted and in-house construction projects.
- Detailed design of road, bridge and culvert projects.
- Bid document preparation.
- Construction management.
- Survey to delineate county's right-of-way and property lines.
- Survey and layout of traffic striping and zones.
- Management of maintenance and repair programs for county's bridges and culverts.

- Right-of-way mapping and acquisition.

Maintenance and Construction Division: The Maintenance and Construction Division maintains approximately 340 lane miles of county roads in a travel safe condition. This includes responsibility for:

- Removing snow and ice from the County Road System to achieve snow and ice free roads (i.e., "black pavement" policy).
- Maintaining and repairing pavement and shoulders on County roads including pothole repair, crack sealing, micro paving and hot and cold blacktop.
- Maintaining and repairing County bridges and culverts.
- Maintaining and/or constructing drainage systems and drainage structures on the County Road System.
- Maintaining guide railing, and replacing substandard and/or deteriorated guide railing, on the County Road System.
- Maintaining and installing traffic control and delineation devices (signs, line and zone striping, etc.) on the County Road System.
- Maintaining and repairing the Highway Department's fleet of vehicles and construction equipment.
- Storing 4,700± tons of salt in Stony Point and Pomona for snow and ice removal.
- Removing trees from the county's right-of-way that are dead, dying, weakened or impeding sight distances on a county road.
- Maintaining and/or landscaping vegetated areas within the county's right-of-way.
- Litter and debris cleanup within the county's right-of-way.

Rockland County Drainage Agency (RCDA): The Rockland County Drainage Agency (RCDA) was established under authority of Chapter 846 of the Laws of 1975 to regulate construction and maintenance along designated County regulated streams. In conjunction with the New York State Department of Environmental Conservation (DEC), the Army Corps of Engineers (COE), and local municipalities, the RCDA regulates development and activity along 14 streams - approximately 78 miles - within the County. The Drainage Agency also performs inspections of County Regulated Streams to identify obstructions or damage.

Permits Division: permit applications are processed by a permit technician, reviewed by the engineer and forwarded to the Superintendent of Highways for approval. Permits are required for the following activities:

- Installing any utilities or other excavations within a County Road Right-of-Way.
- Construction of or additions to Residential Structures with Frontage on County Highway even if there is no direct access to a County Highway.
- Constructing an approach or access connection, such as a driveway, street, or temporary entrance, to the County Road system.
- Construction on property adjacent to a County Road Right-of-Way, such as excavating for new structures, drainage, roof drain connection, landscaping projects, fences, driveway repairs, curbing, sidewalks and connections to catch basins.
- Moving overweight and oversized loads over County roads, Sub-division or other street connections.
- Special activities impacting County Roadways, such as road closings, parades, banners, etc.
- ANY other proposed work, not outlined above, to take place within or adjacent to the County Right-of-Way.

Traffic Safety Division: The Traffic Safety Division monitors traffic and accident patterns and provides for uniform implementation of traffic control devices. Their responsibilities include the following:

- Placing electronic traffic counters at 240 locations to obtain traffic volumes and monitor traffic patterns on the County Road System.
- Planning, designing and installing uniform traffic control devices (traffic signs, line and zone striping, etc.) on the County Road System.
- Investigating complaints from the public concerning needs for, or placement of, traffic signs, pavement delineations and other traffic safety devices on the County Road System.
- Maintaining and/or developing electronic databases of traffic volumes, traffic control devices (i.e., signs, etc.), and accident records for the County Road System.
- Coordinating traffic monitoring activities and participating in federally sponsored traffic planning studies with the County Planning Department, New York State Department of Transportation and New York Metropolitan Transportation Council.

Maps & Highway GIS Division: The Highway Department maintains a large inventory of maps and they plan to make the material available for use by other government bodies and the public.

Rockland County Health Department

The mission of the Rockland County Department of Health is to promote and protect the health of our community. The Rockland County Department of Health (RCDOH) works in collaboration with the New York State Department of Health (NYSDOH) as well as our Office of Fire and Emergency Services during all events, e.g., flooding, drought, wildfires, that may potentially impact public health and safety.

During large storm events that may potentially impact public water supply wells, the RCDOH reports any flooded wells or contaminated water systems to the NYSDOH, who tracks issues throughout the area impacted by the storm, and offers technical and logistical support as needed. The RCDOH also fields calls from county residents who have flooded wells, and provides technical support to ensure proper precautionary measures during and after the flooding event, including proper disinfection of the wells and plumbing systems once flood waters recede.

During drought conditions, the RCDOH monitors the status of our public water systems on a daily basis. In the event the rainfall deficit threatens the ability to supply a safe and adequate supply of water to residents, the Commissioner of Health has the authority to implement mandatory water use restrictions. These restrictions are promulgated in Article V of the Rockland County Sanitary Code, and are designed to reduce the demand for water by restricting discretionary use to preserve water for consumption, domestic sanitation and fire protection. RCDOH also provides regular status updates to both Rockland County officials and the NYSDOH throughout the duration of the drought conditions.

One of the routine RCDOH functions is oversight of the county's public water supply systems and enforcement of water supply regulations contained within Subpart 5-1 of the NYS Sanitary Code and Article II of the Rockland County Sanitary Code. As discussed in the section above on Planning, the RCDOH functions primarily in a support/advisory role during emergencies to ensure proper precautions are followed to protect the public health and safety. However, RCDOH does have the legal authority pursuant to Article V of the Rockland County Sanitary Code to enforce mandatory water use restrictions as necessary during drought conditions.

Rockland County Division of Environmental Resources

The Rockland County Division of Environmental Resources (DER) is located within Rockland County government and serves as the "core" environmental department responsible for informing the County Executive and the County Legislature on all environmental issues. These include but are not limited to, state and federal initiatives, new programs, funding sources, concerns of residents and environmental problems within the county.

The DER includes the Environmental Management Council, Soil and Water Conservation District, Water Quality Committee, Agriculture and Farmland Protection Board and the Parks Commission.

The DER's goal has been two-fold: to protect Rockland's environment and to provide county residents both active and passive recreational opportunities. Park acquisitions have been attained through county funds matched with federal and state grants along with land donations, tax delinquency and partnerships with land trusts and other municipalities.

The Park Commission is responsible for the management and stewardship of the County park system pursuant to Chapter 319 of the Laws of Rockland County. The Division staff along with representatives from the Environmental Management Council and Agricultural and Farm Protection Board reviews development proposals adjacent to County parkland and farms pursuant to General Municipal Law

Rockland is the smallest county in New York State totaling 176 square miles. With one-third of the County preserved as parkland, 40 miles of scenic Hudson River waterfront and 600 lakes and ponds, Rockland County is a place of astounding beauty. A recent land use analysis indicated that just 3% of the remaining land area in the county remains to be developed or protected. A majority of this undeveloped land is environmentally sensitive including steep slopes or non-designated wetland areas. Preservation of these irreplaceable resources prompted the county to plan carefully, thoughtfully and cooperatively to preserve open space for the future.

Open Space Acquisition Program: In 1999, County Executive C. Scott Vanderhoef announced the County's first Open Space Acquisition Program to acquire areas of scenic beauty, environmentally sensitive lands, farms and Hudson River waterfront areas. He realized the importance of protecting the rapidly disappearing natural, cultural and historic resources in Rockland County, and decided to take action to protect these important features for the future by creating the program. In addition, the County Executive took an aggressive stance by recommending that \$30,000,000 be allocated to this program in the capital budget, factoring in the high cost of purchasing a valuable and dwindling commodity, our natural resources.

To date, 31 individual properties have been acquired preserving 1,204 acres of land. A total of \$23,300,000 County funds have been expended while leveraging \$34,785,456 in state grants and partnerships with Land Trusts and local municipalities. The Open Space Acquisition Program has successfully provided access to the Hudson River (27 acres), preserved steep slopes (500 acres), protected wetlands (350 acres), and preserved a valuable historic resource (.5 acres). The remaining acreage includes floodplains, scenic vistas and properties to provide access to other parklands. These parcels are scattered throughout five towns in the County, and offer a variety of recreational opportunities.

Protecting Our Streams & Waterways studies stream sites each year within the county to determine both water quality and assess any levels of impairment.

Helping the Environment encourages municipalities and residents to conserve water and to protect our existing water resources.

The Soil and Water Conservation District (SWCD) considered a political sub-division of the State of New York pursuant to New York State Conservation Law is responsible for developing SWCD programs to protect and conserve soil, water, prime and unique farmland, wildlife, energy and other renewable resources to meet the needs of the local land user on non-federal lands. Additionally, they assess culverts and bridges for flood risk and aquatic passability (the ability for migratory fish to swim into and out of structure).

Rockland County Task Force on Water Resources Management: Task Force Mission: Develop a county water plan that ensures a safe, long-term water supply for Rockland County that incorporates sustainability, demand-side principles and conservation. It shall assemble, examine, and investigate relevant data, further

County goals regarding protection of floodplains, woodlands, and wetlands, increasing groundwater supply, reducing storm water runoff, and preventing flood damages to residents and businesses. The Task Force shall also develop education and outreach programs, seek funding opportunities, and report its findings, conclusions, and recommendations to the Legislative and Executive branches of County government.

The Task Force has committees devoted to Community Communication, Conservation, Groundwater and Stormwater, Drought and Flood Control, and Systems Management.

Lower Hudson Coalition of Conservation Districts (LHCCD): The Lower Hudson Coalition of Conservation Districts (LHCCD) is comprised of ten soil and water conservation districts working together to conserve water quality and natural resources in the Hudson River Estuary watershed. The counties of Albany, Greene, Columbia, Ulster, Dutchess, Orange, Putnam, Rockland, Westchester and NYC each have a soil and water conservation district. Each district's professional staff work with public and private landowners to protect and enhance water quality, reduce erosion, prevent pollution and preserve natural resources. In addition to supporting projects that mitigate local flooding through green infrastructure and drainage improvements, and natural resource restoration; the LHCCD provides erosion and sediment control training, and post-flood stream intervention training; and developed and distributes several publications regarding local flood preparedness, response and mitigation, and funding for green infrastructure projects.

6.4.4 Administrative and Technical Capabilities - State and Federal

New York State Division of Homeland Security and Emergency Services (NYS DHSES)

For more than 50 years, NYS DHSES (formerly New York State Office of Emergency Management) and its predecessor agencies have been responsible for coordinating the activities of all State agencies to protect New York's communities, the State's economic well-being, and the environment from natural and man-made disasters and emergencies. NYS DHSES routinely assists local governments, voluntary organizations, and private industry through a variety of emergency management programs including hazard identification, loss prevention, planning, training, operational response to emergencies, technical support, and disaster recovery assistance.

NYS DHSES administers the FEMA mitigation grant programs in the state, and supports local mitigation planning in addition to developing and routinely updating the State Hazard Mitigation Plan. NYS DHSES prepared the current State Hazard Mitigation Plan working with input from other State agencies, authorities and organizations. It was approved by FEMA in 2014 and it keeps New York eligible for recovery assistance in all Public Assistance Categories A through G, and Hazard Mitigation assistance in each of the Unified Hazard Mitigation Assistance Program's five grant programs. For example, the 2008-2011 State Mitigation Plan allowed the State and its communities to access nearly \$57 million in mitigation grants to prepare plans and carry out projects. The 2014 New York State HMP was used as guidance in completing the Rockland County HMP Update.

New York State Department of Environmental Conservation (NYSDEC) – Division of Water - Bureau of Flood Protection and Dam Safety

Within the NYSDEC – Division of Water, the Bureau of Flood Protection and Dam Safety cooperates with federal, state, regional, and local partners to protect lives and property from floods, coastal erosion and dam failures through floodplain management and both structural and non-structural means; and, provides support for information technology needs in the Division. The Bureau consists of the following Sections:

- Coastal Management: Works to reduce coastal erosion and storm damage to protect lives, natural resources, and properties through structural and non-structural means.

- **Dam Safety:** Is responsible for reviewing repairs and modifications to dams, and assuring that dam owners operate and maintain dams in a safe condition through inspections, technical reviews, enforcement, and emergency planning.
- **Flood Control Projects:** Is responsible for reducing flood risk to life and property through construction, operation and maintenance of flood control facilities.
- **Floodplain Management:** Is responsible for reducing flood risk to life and property through proper management of activities including, development in flood hazard areas and review and development of revised flood maps.

Department of State's Division of Code Enforcement and Administration (DCEA)

Technical Bulletins for the 2010 Codes of New York State

The DCEA has published 14 technical bulletins including two recent bulletins with guidance related to flood hazard areas: Electrical Systems and Equipment in Flood-damaged Structures and Accessory Structures. One archived bulletin from January 2003, Flood Venting in Foundations and Enclosures Below Design Flood Elevation, refers to the out-of-date edition of FEMA Technical Bulletin 1 and to American Society of Civil Engineers (ASCE) 24-98, which is not the edition referenced by the current codes.

Forms and Publications

The DCEA posts several model reporting forms and related publications on its web page. The Building Permit Application requests the applicant to indicate whether the site is or is not in a floodplain and advises checking with town clerks or NYSDEC. The General Residential Code Plan Review form includes a reminder to “add 2’ freeboard.” Sample Flood Hazard Area Review Forms, including plan review checklists and inspection checklists for Zone A and Zone V, are based on the forms in Reducing Flood Losses through the International Code Series published by International Code Council and FEMA (2008).

6.4.5 Fiscal Capabilities – County and Local

County and Municipal Fiscal Capabilities

Rockland County and its municipalities are able to fund mitigation projects through existing local budgets, local appropriations (including referendums and bonding), and through a variety of federal and state loan and grant programs. The County identified the following during the planning process:

- Rockland County receives three different entitlement grants from U.S. HUD: Community Development Block Grant (CDBG), HOME Investment Partnerships, and Emergency Solutions Grant. The County receives Housing Opportunities for People with Aids funds through a consortium with the City of New York. Rockland County's Continuums of Care funds are used to promote the development of the County's Supportive Housing Program.
- A majority of capital improvement projects are federally funded, with a few funded by state grants.
- Rockland County Office of Fire & Emergency Services has received funding through: Department of Homeland Security Funding; State funding; and emergency funding through Indian Point.
- The RCDOH receives funding via a NYSDOH Safe Drinking Water Enhancement Grant to assist with the routine operation of our Water Supply program. This grant also assists RCDOH in maintaining readiness for potential emergency response efforts.

Many municipalities noted throughout the planning process that they are faced with increasing fiscal constraints, including decreasing revenues, budget constraints and tax caps. In an effort to overcome these fiscal challenges, municipalities have continued to leverage the sharing of resources and combining available funding with grants and other sources, and note that plans and inter-municipal cooperation are beneficial in obtaining grants.

6.4.6 Fiscal Capabilities – State and Federal

Refer to Section 4 of the 2014 New York State Hazard Mitigation Plan for information pertaining to the various funding sources available for mitigation projects:

<http://www.dhSES.ny.gov/recovery/mitigation/documents/2014-shmp/Section-4-Mitigation-Strategy.pdf>

New York Rising Community Reconstruction Program

The New York Rising Community Reconstruction (NYRCR) program was established to provide additional rebuilding and revitalization assistance to communities severely damaged by Hurricanes Sandy and Irene and Tropical Storm Lee. The NYRCR program enables communities to identify resilient and innovative reconstruction projects and other needed actions based on community-driven plans that consider current damage, future threats and the communities' economic opportunities. Communities successfully completing a recovery plan will be eligible to receive funds to support the implementation of projects and activities identified in the plans.

Each NYRCR Community has a Planning Committee that includes, among others, a representative from the County, Town or Village, elected legislative representatives, local residents, and leaders of other organizations and businesses in the community. The Planning Committee took the lead in developing the content of the plan. The State has provided each NYRCR Community with a planning team to help prepare a plan. Consultants were hired through a State process administered by New York State Homes and Community Renewal (NYS HCR) through its Office of Community Renewal (OCR) and the Housing Trust Fund Corporation (HTFC). Planning experts from the Department of State and Department of Transportation were assigned to each community to provide assistance to the community and help oversee the planning consultants.

Within Rockland County, the Towns of Stony Point and Clarkstown and Village of Suffern are designated NYRCR Communities, all with \$3 million allocations for project implementations. Funding can go to economic development, infrastructure, prevention of further damages including construction of protective mitigation measures like dunes or sea walls, to the development of community planning documents such as comprehensive master plans or economic development plans.

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. Details about this program and a further description of these opportunities can be found at: <https://www.fema.gov/hazard-mitigation-assistance>. 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 NYS DHSES 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.

For additional information regarding HMGP, please refer to: <https://www.fema.gov/hazard-mitigation-grant-program>

Flood Mitigation Assistance (FMA) Program

The FMA program combines the previous Repetitive Flood Claims and Severe Repetitive Loss Grants into one grant program. The 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 at least 75%. At most 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. The FMA funds are distributed from FEMA to the state. The NYS DHSES serves as the grantee and program administrator for the FMA program.

For additional information regarding the FMA program, please refer to: <https://www.fema.gov/flood-mitigation-assistance-grant-program>

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. For additional information regarding the PDM program, please refer to: <https://www.fema.gov/pre-disaster-mitigation-grant-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)

Individual Assistance (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. For additional information regarding IA, please refer to: <https://www.fema.gov/individual-disaster-assistance>

Public Assistance (PA)

Public Assistance (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. For additional information regarding PA, please refer to: <https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit>

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. For additional information regarding SBA loans, please refer to: <https://www.sba.gov/managing-business/running-business/emergency-preparedness/disaster-assistance>

Social Services Block Grant

To address the needs of critical health and human service providers and the populations they serve, the State of New York will receive a total of \$235.4 million in federal Superstorm Sandy Social Services Block Grant funding. The State will distribute \$200,034,600 through a public and transparent solicitation for proposals. The State is also allocating \$35.4 million in State Priority Projects, using the SSBG funding. Sandy SSBG resources are dedicated to covering necessary expenses resulting from Superstorm Sandy, including social, health and mental health services for individuals, and for repair, renovation and rebuilding of health care facilities, mental hygiene facilities, child care facilities and other social services facilities. For additional information regarding the SSBG program, please refer to: <https://www.acf.hhs.gov/ocs/programs/ssbg>

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 2017 HSGP supports efforts to build and sustain core capabilities across the Prevention, Protection, Mitigation, Response, and Recovery mission areas. This includes two priorities: building and sustaining law enforcement terrorism prevention capabilities and maturation and enhancement of state and major urban area fusion centers (HSGP 2017). 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. For additional information regarding HSGP, please refer to: <https://www.fema.gov/homeland-security-grant-program>

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. For additional information regarding CDBG, please refer to: <https://www.hudexchange.info/programs/cdbg-entitlement/>

U.S. Economic Development Administration

The U.S. Economic Development Administration (USEDA) is an agency of the U.S. Department of Commerce that supports regional economic development in communities around the country. It provides funding to support comprehensive planning and makes strategic investments that foster employment creation and attract private investment in economically distressed areas of the United States. Through its Public Works Program USEDA invests in key public infrastructure, such as in traditional public works projects, including water and sewer systems improvements, expansion of port and harbor facilities, brownfields, multitenant manufacturing and other facilities, business and industrial parks, business incubator facilities, redevelopment technology-based facilities, telecommunications and development facilities. Through its Economic Adjustment Program, USEDA administers its Revolving Loan Fund (RLF) Program, which supplies small businesses and entrepreneurs with the gap financing needed to start or expand their business, in areas that have experienced or are under threat of serious structural damage to the underlying economic base. Please refer to the USED A website (<https://www.eda.gov/>) for additional information.

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. NYS is serving as the liaison between local municipalities and FHWA. \$30 Million in funding was released in October-November of 2012 for emergency repair work conducted in first 180 days following Hurricane Sandy. Another \$220 Million in additional funding became available February 2013. For information regarding the FHWA Emergency Relief Program, please refer to: <https://www.fhwa.dot.gov/programadmin/erelief.cfm>

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. Currently, a total of \$5.2 Billion has been allocated to NYS-related entities. For information regarding the FTA Emergency Relief Program, please refer to: <https://www.transit.dot.gov/funding/grant-programs/emergency-relief-program/emergency-relief-program>

Empire State Development

Empire State Development offers a wide range of financing, grants and incentives to promote business and employment growth, and real estate development throughout the State. Several programs address infrastructure construction associated with project development, acquisition and demolition associated with project development and brownfield remediation and redevelopment. For additional information regarding Empire State Development, please refer to: <https://esd.ny.gov/>

New York State Department of Transportation (NYSDOT)

Damaged Roads and Signals

High winds, storm tidal surge and flooding caused significant damage to New York State Department of Transportation (NYSDOT) facilities, roads and local transportation infrastructure in the Hudson Valley, Long Island and New York City. Repair and replacement will be necessary for these facilities and infrastructure. In some cases, municipalities will be direct applicants; therefore, not all FEMA-eligible costs are included for damaged infrastructure.

Scour Critical/Floodprone Bridge Program

The Scour Critical/Flood Prone Bridge Program is an initiative developed to harden New York State's at-risk bridges to withstand extreme weather events. In the past three years, the State has suffered nine presidentially declared disasters due to extreme weather, many involving severe flooding (NYSDOT 2014).

For this initiative, 105 scour critical/flood prone bridges (https://www.dot.ny.gov/main/business-center/cbow/repository/CBOW_list_2014.pdf) throughout New York State were identified as most at-risk from repeated flooding and are located in the Capital District, Long Island, Mid-Hudson, Mohawk Valley, North Country, Finger Lakes, Central/Western and Southern Tier regions. The locations encompass 78 communities within 30 counties across the State (NYSDOT 2014).

All of the bridges included in this program were built to the codes and standards of their time and remain safe and open for everyday traffic. However, due to a variety of natural severe weather events and the increasing frequency of major storms and floods, they are vulnerable to scour and flooding caused by the intensity and velocity of water from extreme natural events. Bridge scour erodes and carries away foundation materials such as sand and rocks from around and beneath bridge abutments, piers, foundations and embankments (NYSDOT 2014).

This program encompasses a variety of bridge improvement work, including upgrading concrete bridge abutments and/or piers by adding steel or concrete pile foundations, increasing the size of waterway openings to meet 100-year flood projections and reducing or eliminating the number of bridge piers in the water to prevent debris and ice jams that can flood surrounding areas. Completion of the program will ensure continual access to critical facilities and essential personnel during emergency events. Adverse impacts to travel throughout the State will be greatly reduced during severe weather events as well (NYSDOT 2014).

Through HMGP, this program aims to increase the State's resiliency and mitigate the risks of loss and damage associated with future disasters. The total cost of the program, including all 105 bridges across the state, is \$518 million. It will be paid for with a mix of funding from FEMA and the U.S. Department of Housing and Urban Development. No state funding will be required (NYSDOT 2014).

Emergency Watershed Protection Program

The purpose of the Emergency Watershed Protection Program (EWP) was established by Congress to respond to emergencies created by natural disasters. The EWP Program is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, drought, windstorms, and other natural occurrences. The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) administers the EWP Program; EWP-Recovery, and EWP-Floodplain Easement (FPE). For additional information regarding the EWP, please refer to: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/>

EWP - Recovery

The EWP Program is a recovery effort program aimed at relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. Public and private landowners are eligible for assistance, but must be represented by a project sponsor that must be a legal subdivision of the State, such as a city, county, township or conservation district, and Native American Tribes or Tribal governments. NRCS may pay up to 75 percent of the construction cost of emergency measures. The remaining 25 percent must come from local sources and can be in the form of cash or in-kind services.

EWP work is not limited to any one set of measures. It is designed for installation of recovery measures to safeguard lives and property as a result of a natural disaster. NRCS completes a Damage Survey Report (DSR) which provides a case-by-case investigation of the work necessary to repair or protect a site.

Watershed impairments that the EWP Program addresses are debris-clogged stream channels, undermined and unstable streambanks, jeopardized water control structures and public infrastructures, wind-borne debris removal, and damaged upland sites stripped of protective vegetation by fire or drought.

EWP - Floodplain Easement (FPE)

Privately-owned lands or lands owned by local and state governments may be eligible for participation in EWP-FPE. To be eligible, lands must meet one of the following criteria:

- Lands that have been damaged by flooding at least once within the previous calendar year or have been subject to flood damage at least twice within the previous 10 years
- Other lands within the floodplain are eligible, provided the lands would contribute to the restoration of the flood storage and flow, provide for control of erosion, or that would improve the practical management of the floodplain easement
- Lands that would be inundated or adversely impacted as a result of a dam breach

EWP-FPE easements are restored to the extent practicable to the natural environment and may include both structural and nonstructural practices to restore the flood storage and flow, erosion control, and improve the practical management of the easement.

Structures, including buildings, within the floodplain easement must be demolished and removed, or relocated outside the 100-year floodplain or dam breach inundation area.

New York State Department of Environmental Conservation Climate Smart Communities (CSC) Program

The Climate Smart Communities (CSC) program is jointly sponsored by the following six New York State agencies: Department of Environmental Conservation; Energy Research and Development Authority; Public Service Commission; Department of State; Department of Transportation; and the Department of Health. The

program encourages municipalities to minimize the risks of climate change and reduce long-term costs through actions which reduce greenhouse gas (GHG) emissions and adapt to a changing climate. The program offers free technical support on energy and climate and guidance tailored to New York State communities. As of April, 2016, more than 170 communities, representing 6.6 million New Yorkers in every region of the state, have committed to acting on climate through New York State's Climate Smart Communities program.

Benefits of participating in the program include saving taxpayer dollars, improving operations and infrastructure, increasing energy independence and security, demonstrating leadership, and positioning for economic growth. Registered Climate Smart Communities receive notification of state and federal assistance that they can leverage to help adopt low-carbon technologies, and of programs and support for efficiency improvements and energy conservation. Further, they receive an advantage in accessing some state assistance programs. They can call on the help of other local governments that already have adopted climate smart practices and policies, and their climate-smart accomplishments receive statewide recognition. Key elements of the Climate Smart Communities program are described below.

For additional information regarding the CSC program, please refer to: <http://www.dec.ny.gov/energy/50845.html>

Climate Smart Communities Pledge

Any city, town, village or county in New York can join the program by adopting the Climate Smart Communities Pledge. To become a registered Climate Smart Community, the municipality's governing body must adopt a resolution that includes all ten elements of the Pledge and inform DEC of the passage of the resolution. The required ten elements of the Pledge are as follows:

- Pledge to be a Climate Smart Community.
- Set goals, inventory emissions, plan for climate action.
- Decrease community energy use.
- Increase community use of renewable energy.
- Realize benefits of recycling and other climate-smart solid waste management practices.
- Reduce greenhouse gas emissions through use of climate-smart land-use tools.
- Enhance community resilience and prepare for the effects of climate change.
- Support development of a green innovation economy.
- Inform and inspire the public.
- Commit to an evolving process of climate action.

The following Rockland County jurisdictions have passed the Climate Smart Communities Pledge via resolution: County of Rockland; Town of Clarkstown; Town of Orangetown; Village of Montebello; Village of Haverstraw; Village of Nyack; Village of Piermont.

Climate Smart Communities Certification (CSC) Program

The Climate Smart Communities Certification (CSC) program enables high-performing registered communities to achieve recognition for their leadership. Designed around the existing ten pledge elements, the certification program recognizes communities achieving any on over 130 total possible actions through a rating system leading to four levels of award: Certified, Bronze, Silver and Gold. Recertification of completed actions is required every five years. Details of the program and the specific documentation required for each action are described in the CSC Certification Manual at http://www.dec.ny.gov/docs/administration_pdf/certman.pdf.

Climate Smart Communities Grant Program

In April, 2016, DEC announced an expansion of the Environmental Protection Fund to support communities ready to reduce greenhouse gas emissions and prepare for the effects of climate change. Climate Smart Community Implementation grants support mitigation and adaptation projects and range from \$100,000 to \$2 million. Competitive grants ranging from \$25,000 to \$100,000 will also provide support for local governments to become certified Climate Smart Communities. All counties, cities, towns and villages of the State of New York are eligible to receive funding. The CSC grant program will provide 50/50 matching grants for eligible projects in the following categories.

Funding is available for **implementation projects** that advance a variety of climate adaptation and mitigation actions, including the following:

- Construction of natural resiliency measures
- Relocation or retrofit of climate-vulnerable facilities
- Conservation or restoration of riparian areas and tidal marsh migration area
- Reduction of flood risk
- Clean transportation
- Reduction or recycling of food waste

Funding is also available for **certification projects** that advance several specific actions aligned with Climate Smart Communities Certification requirements:

- Right-sizing of government fleets
- Developing natural resource inventories
- Conducting vulnerability assessments
- Developing climate adaptation strategies
- Updating hazard mitigation plans to address changing conditions and reduce climate vulnerability

In scoring grant applications, increasing points are awarded to communities who have already taken the CSC pledge and to those that have achieved certification status. All grant recipients must take the Climate Smart Communities Pledge within the term of their grant contract. For climate mitigation projects, grant recipients must provide a report of estimates of emissions reduction. Certification actions must adhere to the requirements and standards described in the Climate Smart Communities Certification Manual - <http://www.dec.ny.gov/energy/96511.html>. For implementation projects involving property (construction, improvements, restoration, rehabilitation) – if the property is not owned by the grant recipient, they must obtain a climate change mitigation easement.

The round 2 of the 2017 Climate Smart Communities Grant Program was available through the NYS Consolidated Funding Application. Applications for the first round of funding were due July 28, 2017.

The Climate Smart Communities Toolkit was developed to educate New York communities on recommended practices that will help to reduce greenhouse gas emissions and adapt to the effects of climate change, specifically in the areas of land-use, transportation policy, green buildings, infrastructure investment, green infrastructure, housing policy, and adaptation and resilience. The Climate Smart Communities Guide to Local Action contains overviews of possible community actions, how-to's and case studies to help communities implement the CSC pledge. The Climate Smart Communities Land Use Toolkit allows New York communities to find recommended practices that will help to reduce greenhouse gas emissions in the areas of land use, transportation policy, green building, infrastructure investment, green infrastructure and housing policy.

Community Risk and Resiliency Act (CRRA)

On September 22, 2014, Governor Andrew Cuomo signed bill A06558/S06617-B, the Community Risk and Resiliency Act (CRRA). The purpose of the bill is to strengthen New York's preparedness for climate change by ensuring that certain state monies, facility-siting regulations and permits include consideration of the effects of climate risk and extreme-weather events. The bill's provisions will apply to all applications and permits no later than January 1, 2017.

CRRA includes two key provisions to advance New York's climate change adaptation:

- Applicants to certain State programs must demonstrate that they have taken into account future physical climate risks from storm surges, sea-level rise or flooding.
- DEC must establish official State sea-level rise projections by January 1, 2016. These projections provide the basis for State adaptation decisions and will be available for use by all decision makers.

CRRA applies to specific State permitting, funding and regulatory decisions, including smart growth assessments; funding for wastewater treatment plants; siting of hazardous waste facilities; design and construction of petroleum and chemical bulk storage facilities; oil and gas drilling, and State acquisition of open space.

6.5 Mitigation Strategy Development and Update

6.5.1 Update of Municipal Mitigation Strategies

To evaluate progress on local mitigation actions, each jurisdiction was provided with a Mitigation Action Plan Review Worksheet, pre-populated with those actions identified for their jurisdiction in the prior (2010) 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 of 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.

At the Kick-Off and during subsequent local-level planning meetings, all participating municipalities were further surveyed to identify mitigation activities completed, ongoing and potential/proposed. 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.

The County and municipalities identified projects that have been submitted to NYS DHSES for grant funding, including projects for which Letters of Intent (LOI) and grant applications have been submitted under the New York Rising 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.

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

Beginning in the fall of 2016, members of the Steering Committee and contract consultants worked directly with each jurisdiction (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).

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 Project- 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 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. Municipalities have included such initiatives as appropriate, typically amended with specific details to best meet the needs and interests of their community and promote implementation.

In February 2017, a mitigation strategy workshop was conducted by FEMA Region II for all participating jurisdictions to support the identification, evaluation and prioritization of local mitigation strategies, as well as how to present and document this process within the plan. Based on FEMA’s guidance and recommendations provided at this workshop and otherwise, the following significant modifications to the mitigation strategy identification and update process and documentation was 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. Broadly defined mitigation objectives have been eliminated from the updated strategy unless accompanied by discrete actions, projects or initiatives.
- Certain continuous or ongoing strategies that represent programs that are, or since prior and existing plans 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.
- Where applicable, mitigation projects have been documented with an Action Worksheet, based on FEMA’s Action Worksheet templates and recent guidance documents (Appendix E).

FEMA Action Worksheets have been included for projects identified by the County and participating municipalities.

As discussed within the hazard profiles in Section 5.4, the long term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards including flood, severe storm, severe winter storm and wildfire. By way of addressing these climate change-sensitive hazards within their local mitigation strategies and integration actions, communities are working to evaluate and recognize these long term implications and potential impacts, and to incorporate in planning and capital improvement updates.

Municipalities included mitigation actions to address vulnerable critical facilities. These actions have been proposed in consideration of protection against 500-year events, or worst-case scenarios. It is recognized, however, that in the case of projects being funded through Federal mitigation programs, the level of protection may be influenced by cost-effectiveness as determined through a formal benefit-cost analysis. In the case of “self-funded” projects, municipal discretion must be recognized. Further, it must be recognized that the County and municipalities have limited authority over privately-owned critical facility owners with regard to mitigation at any level of protection.

6.5.2 Update of County Mitigation Strategy

The update of the County-level mitigation strategies 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”, or “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 plan 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 plan 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 and other county and regional agencies;
- Input received through the public and stakeholder outreach process.

As discussed within the hazard profiles in Section 5.4, the long term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards including drought, flood, severe storm, severe winter storm and wildfire. As such, the Steering Committee added a new Goal 6: “Promote local and regional sustainability” and several objectives that protect against long-term effects on the environment (e.g., Objectives 8 and 11). The updated mitigation planning goals and objectives support recognition and consideration of climate risk throughout the plan update process. Further, the County has included mitigation actions and initiatives, including continuing and long term planning and emergency management support, to address these long term implications and potential impacts.

Various County departments and agencies have included mitigation actions to address vulnerable critical facilities. These actions have been proposed in consideration of protection against 500-year events, or worst-case scenarios. It is recognized, however, that in the case of projects being funded through Federal mitigation programs, the level of protection may be influenced by cost-effectiveness as determined through a formal benefit-cost analysis. In the case of “self-funded” projects, local government authority must be recognized. Further, it must be recognized that the County has limited authority over privately-owned critical facility owners with regard to mitigation at any level of protection.

6.5.3 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. The mitigation workshop presented by FEMA representatives further amplified these evaluation criteria, and indicated that communities may want to consider other factors.

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

The fourteen (14) evaluation/prioritization criteria used in the 2016/17 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 mitigation actions identified in the 2014 update. 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.

It is noted that jurisdictions may be carrying forward mitigation actions and initiatives from prior mitigation strategies that were prioritized using the STAPLEE criteria. At their discretion, jurisdictions carrying forward prior initiatives were encouraged to re-evaluate their priority, particularly if conditions that would affect the prioritization criteria had changed. Their updated priority ranking is indicated on the prioritization table.

For the plan 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.

6.5.4 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 plan 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 Assistance (HMA) 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 6-2. 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-effective.

For some of the initiatives identified, the planning partnership may seek financial assistance under FEMA's 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 plan.