



Section 6. Mitigation Strategies

This section presents mitigation actions that Monroe County can take to reduce potential exposure and losses identified as concerns in the Risk Assessment portion of this plan. The Planning Committee reviewed the Risk Assessment to identify and develop these mitigation actions.

This section includes:

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

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

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

6.1 Background and Past Mitigation Accomplishments

In accordance with DMA 2000 requirements, this section includes the following discussion regarding past mitigation activities and an overview of past efforts as foundation for understanding mitigation goals, objectives, and activities outlined in this plan. The County, through previous and ongoing hazard mitigation activities, has been proactive in protecting its physical assets and citizens against losses from natural hazards. Examples of previous and ongoing actions and projects include the following:

- Installing backup power generators at critical facilities
- Rehabilitating and replacing bridges and culverts
- Expanding websites to include emergency information
- Maintaining zoning, building, and floodplain management ordinances.

6.2 General Mitigation Planning Approach

The overall approach to update county and local hazard mitigation strategies is based on Federal Emergency Management Agency (FEMA) and New York State (NYS) regulations and guidance regarding local mitigation plan development, including:

- DMA 2000 regulations, specifically 44 *Code of Federal Regulations* (CFR) 201.6 (local mitigation planning)
- FEMA *Local Mitigation Planning Handbook*, March 2013
- FEMA *Integrating Hazard Mitigation into Local Planning*, March 2013
- FEMA (386-3) *Identifying Mitigation Actions and Implementing Strategies*

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

- Review and update mitigation goals and objectives.
- Identify mitigation capabilities, and evaluate their capacity and effectiveness to mitigate and manage hazard risk.
- Identify progress on previous county and local mitigation strategies.



- Develop updated county and local mitigation strategies.
- Prepare an implementation strategy, prioritizing projects and initiatives in the updated mitigation strategy.

6.3 Review and Update of Mitigation Goals and Objectives

This section documents efforts to update hazard mitigation goals and objectives established to reduce or avoid long-term vulnerabilities to 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 Planning Committee developed mitigation goals and objectives based on risk assessment results, discussions, research, and input from Planning Committee members, existing authorities, policies, programs, resources, stakeholders, and the public.

The original goals and objectives of the County Hazard Mitigation Plan (HMP) were established by the Planning Committee during the 2005 planning process and carried through to the 2011 update. During the 2017 update, these goals were revised to reflect changes in County needs and expectations. The Planning Committee identified five goals through a facilitated exercise, working from a catalog of goal statements created through a review of similar plans, the previous version of the HMP, County capabilities and resources, other County documents, and FEMA planning guidance. Once the goals were established, objectives that met multiple goals were selected through a similar facilitated exercise. This plan defines goals as follows:

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 achieve mitigation goals and objectives.

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 intends to achieve. Success of the plan, once implemented, should be measured by the degree to which its goals have been met (that is, by actual benefits in terms of hazard mitigation).

Monroe County goals are compatible with needs and goals expressed in other available community planning documents, as well as the NYS HMP. Achievement of these goals indicates effectiveness of mitigation strategy.

Objectives are short-term aims which, combined, form a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable. The Planning Committee envisioned use of objectives to (1) measure success of the plan and mitigation strategy once implemented, and (2) help prioritize identified mitigation actions. Objectives were developed or selected by the Planning Committee through its knowledge of the local area, review of past efforts, findings of the risk assessment, qualitative evaluations, and identification of mitigation options. The Planning Committee selected objectives that would meet multiple goals and serve as stand-alone measurements of mitigation actions.

The Steering Committee reviewed the 2011 goals and objectives during the 2017 plan update process. Furthermore, each participating municipality received a Goals and Objectives worksheet to facilitate its input to the update process. The 2011 goals and objectives were reviewed in consideration of hazard events and losses since issuance of the 2011 plan; updated hazard profiles and vulnerability assessment;



goals and objectives established in other related state, county, and local risk management plans; and direct input on how the County and municipalities can best address their hazard risks.

Goals and objectives for the 2017 update have been revised to show current County priorities and needs. The following are the goals and objectives for the 2017 plan update (Tables 6-1 and 6-2). Table 6-3 describes how each objective may support multiple goals.

Table 6-1. Monroe County Hazard Mitigation Plan Goals

Goal Number	Goal Statement
G-1	Coordinate hazard mitigation programs that affect the County.
G-2	Prevent hazards from impacting life, property, and the environment.
G-3	Protect life, property, and the environment from hazard impacts.
G-4	Increase public awareness of hazards, their impacts, and ways to reduce vulnerability.
G-5	Protect, preserve, and restore the functions of natural systems.

Table 6-2. Monroe County Hazard Mitigation Plan Objectives

Objective Number	Objective Statement
O-1.1	Develop and maintain multi-jurisdictional coordination efforts related to hazard mitigation.
O-1.2	Develop and maintain partnerships with external federal, state, municipal, and stakeholder agencies that have a role in hazard mitigation.
O-1.3	Track and/or recommend local, county, state, and federal legislation and regulations related to hazard mitigation.
O-2.1	Develop and maintain local regulations that reduce vulnerability to hazards.
O-2.2	Develop and maintain local plans that reduce vulnerability to hazards.
O-2.3	Improve the county’s stormwater management systems.
O-3.1	Encourage homeowners, renters, and businesses to insure their properties against all hazards, including flood coverage under the National Flood Insurance Program (NFIP).
O-3.2	Acquire, relocate, elevate, and/or retrofit existing structures located in hazard areas.
O-3.3	Acquire, relocate, elevate, and/or retrofit repetitive loss properties from flood-prone areas.
O-3.4	Encourage local participation in the Community Rating System (CRS) Program.
O-3.5	Maintain emergency response capability.
O-4.1	Improve public alert, warning, and communications systems by promoting redundant and multi-faceted communications methods.
O-4.2	Conduct a coordinated public information program related to hazards and their impacts throughout the county.
O-4.3	Encourage residents to implement hazard mitigation and preparedness measures on their properties.
O-4.4	Promote personal and family preparedness.
O-5.1	Encourage the use of green and natural infrastructure.
O-5.2	Coordinate with local, county, state, federal, international, and other stakeholder agencies to maintain natural systems, including wetlands, parks, and riverine and coastal areas.



Table 6-3. Monroe County Hazard Mitigation Plan Goals and Objectives

Obj. #	Objective Statement	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
O-1.1	Develop and maintain multi-jurisdictional coordination efforts related to hazard mitigation.	X	X		X	X
O-1.2	Develop and maintain partnerships with external federal, state, municipal, and stakeholder agencies that have a role in hazard mitigation.	X	X		X	
O-1.3	Track and/or recommend local, county, state, and federal legislation and regulations related to hazard mitigation.	X	X	X		
O-2.1	Develop and maintain local regulations that reduce vulnerability to hazards.	X	X		X	X
O-2.2	Develop and maintain local plans that reduce vulnerability to hazards.	X	X	X		X
O-2.3	Improve the county's stormwater management systems.	X	X	X		
O-3.1	Encourage homeowners, renters, and businesses to insure their properties against all hazards, including flood coverage under the National Flood Insurance Program (NFIP).			X	X	
O-3.2	Acquire, relocate, elevate, and/or retrofit existing structures located in hazard areas.	X	X	X	X	
O-3.3	Acquire, relocate, elevate, and/or retrofit repetitive loss properties from flood-prone areas.	X	X	X	X	
O-3.4	Encourage local participation in the Community Rating System (CRS) Program.	X		X	X	
O-3.5	Maintain emergency response capability.			X		
O-4.1	Improve public alert, warning, and communications systems by promoting redundant and multi-faceted communications methods.				X	
O-4.2	Conduct a coordinated public information program related to hazards and their impacts throughout the county.	X	X		X	
O-4.3	Encourage residents to implement hazard mitigation and preparedness measures on their properties.	X	X	X	X	
O-4.4	Promote personal and family preparedness.		X	X	X	
O-5.1	Encourage the use of green and natural infrastructure.	X				X
O-5.2	Coordinate with local, county, state, federal, international, and other stakeholder agencies to maintain natural systems, including wetlands, parks, and riverine and coastal areas.	X	X			X



6.4 Capability Assessment

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

During the original planning process, the Planning Committee reviewed a wide range of state, county, and local plans, regulations, and documents. Specifically, the Planning Committee considered datasets that catalogued structures and infrastructure by type, number, and assessed valuation through resources such as census information, tax assessment files, land-use, and other available government sources. County Geographic Information System (GIS) datasets were also incorporated, including a building inventory (tax maps), property values (property assessments), land-use (zoning boundaries), Pictometry (photo images), critical infrastructure/key resources (water, sewer, electric, natural gas, national pipeline intercepts, telecommunications, information technology—facilities and distribution systems), and vulnerable populations facilities (hospitals, schools, nursing homes, group homes, daycare facilities, malls, arenas/stadiums). The 2011 version of the plan listed these documents to accurately express both vulnerability and assets in the County. Results of the document review were incorporated into the risk assessment and the mitigation strategy of the 2011 plan. The Planning Committee did not assess the County’s or jurisdictions’ administrative, technical, or fiscal capabilities at that time.

During the 2017 plan update process, all participating jurisdictions were tasked with developing or updating their capability assessments, paying particular attention to evaluating 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 are presented in the respective Capability Assessment sections of their jurisdictional annexes in Section 9. Furthermore, within each annex, participating jurisdictions have identified how they have integrated hazard risk management into their existing planning, regulatory, and operational and administrative framework (“integration capabilities”), and how they intend to promote this integration (“integration actions”). A summary of these continued efforts to develop and promote a comprehensive and holistic approach to hazard risk management and mitigation appears in Section 7.

6.4.1 Summary of Plans, Programs, and Resources Available to Support Mitigation

Following are descriptions of various federal, state, county, and local planning and regulatory, administrative, technical, and fiscal programs available to promote and support mitigation and risk reduction in Monroe County.

Evacuation and Sheltering

The County’s Radiological Plan for events at the Ginna Nuclear Generating Station includes a sheltering component. It also includes evacuation routes for the Towns of Penfield and Webster. The County’s road network is incorporated into the County’s GIS. Evacuation routes are determined at time of incident.

The Monroe County Office of Emergency Management (OEM) also maintains a county-wide Evacuation and Shelter Plan. The plan indicates how shelter locations will be identified and how the shelters will be operated. Generally, all communities in Monroe County rely on the American Red Cross (Red Cross) to fulfill the sheltering function. The Red Cross identifies potential shelter sites, works with the sites’ management (e.g., school principal, church representative) to assess the facility for use as a shelter, and enters into facility agreements for use of the facility as a shelter. The facility assessment includes criteria



for complying with the Americans with Disabilities Act and meeting medical needs. This is all conducted during “normal” time rather than during an emergency. During an emergency, the County OEM contacts the Red Cross to discuss shelter needs, available facilities, and staff resources. The Red Cross then works with the facility representatives to operate the shelter.

As of January 2016, the County OEM was updating the Evacuation and Shelter Plan. The County elected to use the update of the Evacuation and Shelter Plan as an opportunity to expand the plan to meet NYS Division of Homeland Security and Emergency Services (DHSES) Hazard Mitigation Planning Standards requirements regarding evacuation, sheltering, and short- and long-term housing options. During meetings of the HMP Steering Committee, OEM representatives stated that the updated plan would identify specific evacuation routes and require coordination of the jurisdictions’ codes officials with the Red Cross in assessing a facility for use as a shelter. The updated plan will also identify areas in each jurisdiction that can be used for short-term housing of evacuees. The OEM will work with each jurisdiction to identify potential sites throughout the County that may be used for constructing new long-term housing for relocated households.

The Monroe County annex to this HMP (Section 9.1) includes an action to upgrade the Evacuation and Shelter Plan to meet the NYS DHSES Hazard Mitigation Planning Standards.

Monroe 2 – Orleans Boards of Cooperative Educational Services (BOCES) District-wide School Safety Plan

The Monroe County BOCES promotes Safe Schools Against Violence in Education (Project SAVE) and supports development of a District-wide School Safety Plan, in accordance with the NYS Commissioner’s Regulation 155.17. The District-wide Safety Plan is developed to build off individual building-level emergency response plans, and benefits the County in a variety of ways outside the obvious safety recommendations.

The plan promotes interjurisdictional and stakeholder cooperation by seeking buy-in and incorporation of roles of individual schools, the entire school district, Monroe County, and the State of New York. The plan also lays out school procedures that may be relevant to County notifications and responses during emergencies, particularly because the schools should be considered critical facilities that host vulnerable populations. Key procedures addressed include school cancellation, early dismissal, and sheltering (lockdown, shelter-in-place, and evacuations to off-site shelters). The safety plan was designed as an all-hazards plan, and considers the following potential situations, many of which relate to hazards identified in the County HMP:

- Severe Weather
- Bomb Threat
- Student Fight
- Kidnapping/Hostage Taking
- Civil Disturbance
- Transportation Accident
- Gas Leak
- Intruder
- Chemical Spill
- Fire/Explosion
- Biological Threat
- Radiological Threat
- Epidemic.



Section IV of the safety plan lists resources available to the school district for use during an emergency (personnel, equipment, fuel, and food). Ultimately, the plan specifies procedures and offers recommendations pertaining to all phases of emergency management (prevention, preparation, response, recovery, and mitigation), although not all terms are explicitly used. Regarding mitigation, encouraged actions include fingerprinting all prospective employees (consistent with NYS Commissioner's Regulations) and installing 24/7 electronic security systems/limiting door access.

National Flood Insurance Program (NFIP)

The U.S. Congress established the NFIP with enactment 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 compliance with state and community floodplain management regulations that reduce future flood damage.

The three components of the NFIP are 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 escalating costs of repairing damage to buildings and their contents caused by floods. Flood damage in the United States is reduced by nearly \$1 billion each year via implementation by communities of sound floodplain management requirements and purchases by property owners of flood insurance. Additionally, buildings constructed in compliance with NFIP building standards undergo approximately 80 percent less damage annually than those not built in compliance (FEMA 2008).

Monroe County and many of the County's individual jurisdictions actively participate in the NFIP. As of June 30, 2015, 2,052 NFIP policies in Monroe County. Claims numbered 633, involving more than \$3,396,400 for damages to structures and contents. NFIP Repetitive Loss (RL) properties numbered 13, and NFIP Severe Repetitive Loss (SRL) properties in the County numbered 2. Further details on the County's flood vulnerability appear in the flood hazard profile in Section 5.

Municipal participation in and compliance with the NFIP is supported at the federal level by FEMA Region II and the Insurance Services Organization (ISO), and at the state-level by the New York State Department of Environmental Conservation (NYSDEC) and NYS DHSES. Additional information on the NFIP program and its implementation throughout the County is in the flood hazard profile (Section 5.4.4).

The State and communities may adopt higher regulatory standards when they implement 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 state requirement, providing for additional freeboard or requiring BFE+2 for all types of construction. Furthermore, a number of communities have supported property owners in meeting and exceeding freeboard requirements through the site plan review and zoning board of approvals process—for instance, allowing determination of overall structure heights from BFE+2 rather than from grade within NFIP floodplains.



Cumulative Substantial Improvements/Damages: The NFIP permits improvements valued at up to 50 percent of a building’s pre-improvement value without need to meet flood protection requirements. Over the years, a community may issue a succession of permits for various repairs or improvement to the same structure. However, issuing this succession of permits can greatly increase overall flood damage potential for the structure and within a community. Thus, the community may wish to deem “substantial improvement” cumulative so that once a threshold of improvement is reached within a certain length of time, the structure is considered substantially improved and must meet flood protection requirements.

In addition to its overall requirements and identification of areas for enhancement, the NFIP supports and promotes use of certain tools, such as Flood Insurance Studies (FIS) and Flood Insurance Rate Maps (FIRM), which can help Monroe County and its jurisdictions identify specific locations of greater flood vulnerability. These tools are described in more detail immediately below.

Flood Insurance Studies (FIS)

FEMA is responsible for implementing the federal directives of identifying flood-prone areas in the United States and establishing flood-risk zones within flood-prone areas. These directives are in the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. To this end, FEMA develops an FIS for participating communities. The FIS consists of a narrative report of countywide flood hazards, including descriptions of flood areas studied, engineered methods used, principal flood problems, flood protection measures, and graphic profiles of flood sources. For most participating communities, FEMA has prepared an FIS that presents water surface elevations of floods of various magnitudes, including the 1% annual chance flood and the 0.2% annual chance flood (the 500-year flood).

Flood Insurance Rate Maps (FIRM) and Digital Flood Insurance Rate Maps (DFIRM)

In addition to the FIS, FEMA also provides FIRMs or DFIRMs for entire counties and individual jurisdictions. Base flood elevations and boundaries of 100-year floodplains are shown on a FIRM, which is the principle tool for identifying locations and extents of flood hazards.

FIRMs depict Special Flood Hazard Areas (SFHA)—those areas subject to inundation from the 1% annual chance flood (also known as the Base Flood or the 100-year flood). Those areas are defined as follows:

- Zones A1-30 and AE: SFHAs subject to inundation by the base flood, determined via detailed hydraulic analysis. Base Flood Elevations are shown within these zones.
- Zone A (also known as Unnumbered A-zone): SFHAs where no Base Flood Elevations or depths are shown because detailed hydraulic analyses have not been performed.
- Zone AO: SFHAs subject to inundation by types of shallow flooding with average depths between 1 and 3 feet. These are normally areas prone to shallow sheet flow flooding on sloping terrain.
- Zone VE, V1-30: SFHAs along coasts that are subject to inundation by the base flood, and which are threatened by additional hazards stemming from actions by waves with heights of 3 feet or greater. Base Flood Elevations derived from detailed hydraulic analysis are shown within these zones.

Other areas of potential flooding not specified as SFHAs are defined as follows:

- Zones B and X (shaded): Zones where land elevation has been determined above the Base Flood elevation but below the 500-year flood elevation.



- Zones C and X (unshaded): Zones where land elevation has been determined above both the Base Flood elevation and the 500-year flood elevation.

Per the FEMA Map Service Center, effective dates for the FIS and FIRM/DFIRM of each jurisdiction are listed in Table 6-4.

Table 6-4. Effective FIS and FIRM Dates for Monroe County Jurisdictions

Jurisdiction	FIRM Panels	FIS Reports
Brighton, Town of	8/28/2008	8/28/2008
Brockport, Village of	8/28/2008	8/28/2008
Chili, Town of	8/28/2008	8/28/2008
Churchville, Village of	8/28/2008	8/28/2008
Clarkson, Town of	8/28/2008	8/28/2008
East Rochester, Town of	8/28/2008	8/28/2008
East Rochester, Village of	8/28/2008	8/28/2008
Fairport, Village of	8/28/2008	8/28/2008
Gates, Town of	8/28/2008	8/28/2008
Greece, Town of	8/28/2008	8/28/2008
Hamlin, Town of	8/28/2008	8/28/2008
Henrietta, Town of	8/28/2008	8/28/2008
Hilton, Village of	8/28/2008	8/28/2008
Honeoye Falls, Village of	8/28/2008	8/28/2008
Irondequoit, Town of	8/28/2008	8/28/2008
Mendon, Town of	8/28/2008	8/28/2008
Ogden, Town of	8/28/2008	8/28/2008
Parma, Town of	8/28/2008	8/28/2008
Penfield, Town of	8/28/2008	8/28/2008
Perinton, Town of	8/28/2008	8/28/2008
Pittsford, Town of	8/28/2008	8/28/2008
Pittsford, Village of	8/28/2008	8/28/2008
Riga, Town of	8/28/2008	8/28/2008
Rochester, City of	8/28/2008	8/28/2008
Rush, Town of	8/28/2008	8/28/2008
Scottsville, Village of	8/28/2008	8/28/2008
Spencerport, Village of	8/28/2008	8/28/2008
Sweden, Town of	8/28/2008	8/28/2008
Webster, Town of	8/28/2008	8/28/2008
Webster, Village of	8/28/2008	8/28/2008
Wheatland, Town of	8/28/2008	8/28/2008

Risk Mapping, Assessment, and Planning (Risk MAP)

Risk MAP is a FEMA program that provides communities with flood information and tools to enhance their mitigation plans and take action to protect their citizens. It builds on flood hazard data and maps produced by the Flood Map Modernization (Map Mod) program. Through more precise flood mapping products, risk assessment tools, and planning and outreach support, Risk MAP strengthens local ability to





make informed decisions about reducing risk. It combines quality engineering with state-of-the-art flood hazard data to assist communities in planning and preventing risk by using the most current information. Risk MAP collaborates with state, tribal, and local governments, and delivers quality data that increases public awareness and leads to action resulting in reduced risk to property and life. Risk MAP focuses on products and services beyond the traditional FIRMs, and works with officials to utilize flood risk data and assessment tools. Risk MAP also helps effectively communicate risk to citizens, and enables communities to enhance their mitigation plans and actions (FEMA 2012).

The goals of Risk MAP are as follows:

- Flood Hazard Data – addresses gaps in flood hazard data to (1) form a solid foundation for risk assessment and floodplain management, and (2) render the NFIP actuarially sound.
- Public Awareness/Outreach – ensures that measurable increases of public awareness and understanding of risk result in measurable reduction of current and future vulnerability.
- Hazard Mitigation Planning – leads and supports states, localities, and tribal communities to effectively engage in risk-based mitigation planning, resulting in sustainable actions that reduce or eliminate risks to life and property from natural hazards.
- Enhanced Digital Platform – provides an enhanced digital platform that improves management of Risk MAP, conserves information produced by Risk MAP, improves communication of risk data and related products to all levels of government and the public, and facilitates sharing of risk data and related products among those entities.
- Alignment and Synergies – aligns risk analysis programs and develops synergies to enhance decision-making capabilities through effective risk communication and management.

FEMA headquarters and regional offices lead a team of contractors and stakeholders to deliver its Risk MAP program. The team is composed of representatives from entities whose responsibilities are as follows:

- FEMA Headquarters – responsible for overall program implementation
- FEMA Regions – manage regional flood map production and help implement the Risk MAP outreach strategy
- State, Local, and Tribal entities – help ensure that updated mapping information is used to make informed decisions regarding risk
- Program Management Contractor – provides general oversight for Risk MAP of integration of activities, development and implementation of a national outreach strategy, and stakeholder relations
- Production and Technical Services Contractors – update flood hazard data and maps
- Customer and Data Services Contractor – provides the digital platform for sharing flood mapping products and information.

Risk MAP will provide state and community officials with three Flood Risk Products (Flood Risk Report, Flood Risk Map, and Flood Risk Database) to help them better understand flood risk and potential impacts of floods on communities and individuals. These products will enable communities to take proper mitigation actions to reduce flood risk by referencing summaries within the three products of



information captured through the Flood Risk Datasets during a Flood Risk study (FEMA 2012a). These Flood Risk Datasets include:

- Changes since last FIRM
- Flood depth and analysis grids
- Flood risk assessment data
- Areas of mitigation interest (FEMA 2012a).

The Flood Risk Report conveys to stakeholders comprehensive understanding of flood hazard and risk exposure within their communities, watersheds, or other geographic areas. The report parallels the FIS by providing a narrative of the flood risk assessment methodology and results. The report provides risk assessment information at the project level, emphasizing risk reduction activities with possible effects beyond the specific stream or community. The report also presents risk assessment information that can be incorporated into mitigation plans (FEMA 2012a).

NFIP Community Rating System (CRS)

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

For participating communities, flood insurance premium rates are discounted in increments of 5%. For example, a Class 1 community receives a 45% premium discount, and a Class 9 community receives a 5% discount. Class 10 communities do not participate in the CRS and therefore do not receive a discount. The CRS classes for local communities are based on 18 creditable activities in the following categories:

- Public information
- Mapping and regulations
- Flood damage reduction
- Flood preparedness.

As of November 2015, 44 communities within NYS were participating in the CRS program; however, 12 of those communities had their classifications rescinded due to failure to meet annual participation requirements. Currently, only one jurisdiction in Monroe County participates in the CRS—the Town of Greece maintains a Class 8 rating and receives a 10% discount. Towns, villages, and the County as a whole could expect significant cost savings on premiums if enrolled in the CRS program. For example, if all towns and villages in the County would be enrolled in the CRS program and would maintain an average CRS rate class of 8 (10 percent reduction in flood insurance premiums), policyholders in the County would save approximately \$386,000.

Homeowner Flood Insurance Affordability Act of 2014

On March 21, 2014, President Obama signed into law the Homeowner Flood Insurance Affordability Act (HFIAA). HFIAA of 2014 repeals certain provisions of the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12) that eliminated (1) eligibility for Pre-FIRM subsidies of buildings newly purchased or newly insured on or after July 6, 2012, and (2) reinstatements of lapsed policies (effective on or after October 4, 2012). FEMA's initial priority is to restore Pre-FIRM subsidies for policyholders covered by section 3 of the HFIAA (FEMA 2014a).



While FEMA actively works to implement the new law, policyholders are encouraged to maintain flood insurance policies and keep these current. FEMA will continue working with Congress, the private Write Your Own Insurance Companies (WYO), and other stakeholders to implement these Congressionally-mandated reforms and to work toward our shared goals of helping families maintain affordable flood insurance, ensuring financial stability of the NFIP, and reducing risks and consequences of flooding nationwide. FEMA will continue to identify and publish special flood hazards and flood risk zones as authorized and required by Congress (FEMA 2014b). The following are items of information regarding this new Act:

- The new law lowers recent rate increases on some policies, prevents some future rate increases, and implements a surcharge on all policyholders. The Act repeals certain rate increases that have already gone into effect, and provides for refunds to those policyholders. The Act also authorizes additional resources for the National Academy of Sciences (NAS) to complete the affordability study.
- FEMA has actively begun analyzing and prioritizing implementation of the new law. FEMA will be working with the private WYOs within the next few weeks to seek their input and expertise prior to issuing business practice bulletins.
- Changes cannot occur immediately. While the new law does require some changes retroactively, applying to certain policies written after July 6, 2012, other required changes involve establishment of new programs, processes, and procedures.
- FEMA's initial priority is to assess potential changes in NFIP business processes with intent to stop policy increases for certain subsidized policyholders as outlined in the Act.
- FEMA also plans to issue guidance in the months ahead for the WYOs to begin issuing refunds as outlined in the law for some policyholders previously impacted by subsidy phase outs.
- More information on the new law and its effects on the NFIP are forthcoming (FEMA 2014b).

Refunds

For certain flood insurance policies affected by Pre-FIRM and subsidy elimination required by BW-12, the new law mandates refunds of excess premiums that those policyholders were charged pursuant to requirements of BW-12. Refunds will not affect all subsidized policyholders who received rate increases as directed by Congress in BW-12—only policyholders for whom the rate increases under BW-12 were revoked by the new law. Refunds will affect only a small percentage of the overall NFIP policy base (FEMA 2014b).

Prior to restoring and refunding premiums, FEMA is required by the Homeowner Flood Insurance Affordability Act to consult with its partner insurers (WYOs) to develop guidance and rate tables. In accordance with the new law, FEMA will work to develop and finalize its guidance and rate tables within 8 months. The law allows WYO insurance companies between 6 and 8 months to implement the changes and update systems to implement the guidance (FEMA 2014b).

FEMA is working closely with the WYOs to develop a timetable for processing refunds expeditiously. Refunds apply to policyholders in high-risk areas who were required to pay their full-risk rate after purchasing a new flood insurance policy on or after July 6, 2012. Refunds may apply to policyholders who renewed their policy after HFIAA was enacted on March 21, 2014, and whose premium increased more than 18% (FEMA 2014b). Refunds do not apply to the following:

- Policyholders paying the 25 percent annual rate increases, as required by Congress in BW12, for a Pre-FIRM subsidized non-primary residence, business, SRL property, or building that was substantially damaged or improved (FEMA 2014b)



- Policyholders whose full-risk premium is less than the Pre-FIRM subsidized premium, or who were not overcharged according to any retroactive revisions to the Pre-FIRM subsidized rates required by the new law (FEMA 2014b).

A policyholder subjected to annual rate increases in 2013 or 2014, or a policyholder who paid the 5 percent fee for the NFIP Reserve Fund (as required by BW-12), will obtain a refund only if his/her premium renewal was after March 21, 2014, and the total premium, including the reserve fund, exceeded 18% (FEMA 2014b).

Premium Rates for Subsidized Policies

The new law requires imposition of gradual rate increases on properties now subject to artificially low (or subsidized) rates, instead of immediate increases to full-risk rates necessitated in certain cases under BW-12. FEMA is required to increase premiums for most subsidized properties by no less than 5% annually until the class premium reaches its full-risk rate. Importantly, close to 80% of NFIP policyholders paid a full-risk rate prior to either BW-12 or HFIAA, and are minimally impacted by either law (FEMA 2014b).

With some exceptions, flood insurance premiums cannot increase more than 18 percent annually. The most important of these exceptions is imposition of up to 25% annual increases for policies applying to the following properties, as required by BW-12, until they reach their full-risk rate (FEMA 2014b):

- Older business properties insured with subsidized rates
- Older non-primary residences insured with subsidized rates
- SRL properties insured with subsidized rates
- Buildings constructed before local adoption of a FIRM (known as Pre-FIRM properties) that have been substantially damaged or improved (FEMA 2014b).

To enable a new purchaser of a property to retain Pre-FIRM rates while FEMA is developing its guidelines, a new purchaser will be allowed to assume the prior owner's flood insurance policy and retain the same rates until the guidance is finalized. Also, lapsed policies receiving Pre-FIRM subsidized rates may be reinstated with Pre-FIRM subsidized rates pending FEMA's implementation of the rate increases required by HFIAA (FEMA 2014b).

New Surcharge on All Policies

A new surcharge will be added to all policies to offset the subsidized policies and achieve the financial sustainability goals of BW-12. A policy for a primary residence will include a \$25 surcharge. All other policies will include a \$250 surcharge. The fee will be included on all policies, including full-risk rated policies, until all Pre-FIRM subsidies are eliminated (FEMA 2014b).

Grandfathering

The new law repeals a provision of BW-12 that required FEMA, upon the effective date of a new or updated FIRM, to phase in premium increases over 5 years by 20% per year to reflect the current risk of flood to a property, effectively eliminating FEMA's ability to grandfather properties into lower risk classes (FEMA 2014b).

Also for newly mapped properties, the new law sets first-year premiums at the same rate as those required of owners of properties outside the Special Flood Hazard Area (preferred risk policy rates). With limited exceptions, flood insurance premiums cannot increase more than 18% annually (FEMA 2014b).



Flood Insurance Advocate

The new law requires FEMA to designate a Flood Insurance Advocate to advocate for fair treatment of NFIP policy holders (FEMA 2014b). The Advocate will:

- Educate property owners and policyholders on individual flood risks, flood mitigation, and measures to reduce flood insurance rates through effective mitigation; the flood insurance rate map review and amendment process; and any changes in the flood insurance program as a result of any newly enacted laws.
- Assist policy holders and property owners to understand the procedural requirements related to appealing preliminary flood insurance rate maps and implementing measures to mitigate evolving flood risks.
- Assist in development of regional capacity to respond to individual constituent concerns about flood insurance rate map amendments and revisions.
- Coordinate outreach and education with local officials and community leaders in areas impacted by proposed flood insurance rate map amendments and revisions; and help potential policy holders obtain and verify (as accurate and reliable) flood insurance rate information when they purchase or renew a flood insurance policy (FEMA 2014b).

Other Provisions

The new law permits FEMA to account for property-specific flood mitigation that does not involve the insured structure in determining a full-risk rate. The law requires consideration of residential basement flood proofing when developing full-risk rates after a map change that increases the Base Flood Elevation in an area where residential basement flood proofing is permitted (FEMA 2014b).

The law mandates that FEMA develop an installment plan for non-escrowed flood insurance premiums, which will require changes to regulations and the Standard Flood Insurance Policy contract. The law increases maximum deductibles. The law encourages FEMA to minimize the number of policies for which premiums exceed 1 percent of the coverage amount, and requires FEMA to report such premiums to Congress (FEMA 2014b).

Draft Affordability Framework

The new law required FEMA to prepare a draft affordability framework, due to Congress 18 months after completion of the affordability study required by BW-12. The Affordability Study required by BW-12 was conducted by the National Academy of Sciences, and was completed in December 2015. In developing the affordability framework, FEMA must consider all of the following:

- Accurate communication to customers of the flood risk
- Targeted assistance based on financial ability to pay
- Individual and community actions to mitigate flood risk or lower cost of flood insurance
- Impact of increases in premium rates on participation in NFIP
- Impact of mapping update on affordability of flood insurance (FEMA 2014b).

The affordability framework will include proposals and proposed regulations for ensuring flood insurance affordability among low-income populations (FEMA 2014b).



Mapping

The HFIAA requires the Technical Mapping Advisory Council (TMAC) to review the new national flood mapping program authorized under the 2012 and 2014 flood insurance reform laws. The law requires the Administrator to certify in writing to Congress that FEMA is utilizing “technically credible” data and mapping approaches. The law also requires FEMA to submit the TMAC review report to Congress (FEMA 2014b).

FEMA will be looking to the TMAC for recommendations on how best to meet the legislatively mandated mapping requirements for the new mapping program, including identification of residual risk areas, coastal flooding information, land subsidence, erosion, expected changes in flood hazards with time, and others (FEMA 2014b).

As the new national flood mapping program is being established, FEMA expects opportunities to incrementally improve current procedures as it provides flood hazard data and information under the NFIP. FEMA will make those improvements where necessary to ensure continued effective communication, mitigation, and proper insurance pertaining to all ongoing changes to policies and procedures regarding flood hazards (FEMA 2014b).

The law lifts the \$250,000 limit on the amount that FEMA can spend to reimburse homeowners for successful map appeals based on a scientific or technical error. Federal rulemaking is required in order to implement this provision (FEMA 2014b).

FEMA is authorized to account for reconstruction or improvements of flood protection, not just new construction. The law authorizes FEMA to consider current value of a levee when assessing adequate progress in reconstruction of an existing flood protection system. The law extends certain provisions related to NFIP requirements in areas restoring discredited flood protection systems to coastal levees, and clarifies that the levee must be considered without regard to the level of federal funding for the original construction or the restoration (FEMA 2014b).

The law exempts mapping fees for flood map changes due to habitat restoration projects, dam removal, culvert re-design or installation, or installation of fish passages. It also requires FEMA to consider the effects of non-structural flood control features, such as dunes, and beach and wetland restoration when it maps the special flood hazard area (FEMA 2014b).

The law requires FEMA to enhance coordination with communities before and during mapping activities, and requires FEMA to report certain information to members of Congress for each state and congressional district affected by preliminary maps (FEMA 2014b).

Implementation of Section 3 – Repeal of Certain Rate Increases

As part of the implementation of HFIAA, and to provide relief to qualifying policyholders who received rate increases under earlier legislative program changes, on April 15, 2014, FEMA issued an NFIP bulletin to its private-sector WYO partners on how to adjust rates for certain Pre-FIRM properties as described by Section 3 of the Act. This action begins to implement FEMA’s first priority to stop policy increases for certain subsidized policyholders as outlined in the Act (FEMA 2014a).

Beginning May 1, 2014, for all new applications for flood insurance and renewal of flood insurance policies for properties covered by Section 3, FEMA will require its Direct Servicing Agent and WYOs to use the Pre-FIRM subsidized rates of October 1, 2013, when more favorable for properties covered by Section 3 (FEMA 2014a).

Implementation of Section 5 – October 1, 2014 Program Rate Changes

On March 29, 2014, FEMA issued an NFIP bulletin (linked below) to its private-sector WYO partners, which included the program rate changes of October 1, 2014, that revise premium rate tables to comply



with Section 5 of the HFIAA of 2014. Section (5) of the Act prohibits FEMA from increasing premiums more than 15 percent a year within a single risk class, and from increasing premiums more than 18 percent for an individual policy. In every case, these rates are the same or lower than the premium rates of October 1, 2013. The HFIAA Section 5 premium rates are to be used for all new and renewal policies effective on or after October 1, 2014 (FEMA 2014a).

FEMA will also use these rate tables to calculate premium refunds required under Section (3) of HFIAA. Additionally, to the extent a policyholder was charged a premium exceeding the premium increase caps mandated under Section 5 of HFIAA, FEMA will use these rate tables to calculate the refund. FEMA will continue consulting with WYOs to finalize refund guidance for facilitating refunds under Sections 3 and 5 of HFIAA. FEMA anticipates finalizing its guidance by July 2014, with refunds beginning in fall 2014 (FEMA 2014a).

Federal Dam Safety Resources and Programs

Because the USACE National Inventory of Dams (NID) notes 23 dams in Monroe County, dam regulation is an important concern to County officials and residents. In fact, potential for catastrophic flooding caused by dam failures is a national concern and led to passage of the National Dam Safety Act (Public Law 92-367). For 30 years, the National Dam Safety Program (NDSP) has helped protect Americans from dam failure. The NDSP is a partnership of the states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Under FEMA's leadership, state assistance funds have allowed all participating states to improve their programs through increased inspections, emergency action planning, and purchases of needed equipment. New York is one of those participating states. FEMA has also expanded existing training programs and initiated new training programs. Grant assistance from FEMA provides support for improvement of dam safety programs that regulate most dams in the United States (FEMA 2013).

United States Army Corps of Engineers Dam Safety Program

The U.S. Army Corps of Engineers (USACE) is responsible for safety inspections of some federal and non-federal dams in the United States that meet the size and storage limitations specified in the National Dam Safety Act. USACE has inventoried dams and has surveyed each state's and federal agency's capabilities, practices, and regulations regarding design, construction, operation, and maintenance of dams. USACE has also developed guidelines for inspection and evaluation of dam safety (USACE 1997). According to USACE, Emergency Action Plans (EAP)—required for high-risk dams—are in place for 13 dams in Monroe County. More than 15 of the 23 dams tracked by USACE have undergone inspections within the past 5 years.

FEMA NDSP

NDSP helps protect people from dam failures. It is a partnership of state agencies, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety (FEMA 2013b). The program was established to improve safety and security around dams by providing assistance grants to state dam safety agencies to assist them in improving their regulatory programs, funding research to enhance technical expertise as dams are built and rehabilitated, establishing training programs for dam safety inspectors, and creating a National Inventory of Dams (NID). The NDSP includes:

- **Information needs for dam safety** – under FEMA's leadership, state assistance funds have enabled all participating states to better their programs through increased inspections, emergency action planning, and purchase of needed equipment.



- **Dam safety training** – grant assistance provides vital support for improvement of state dam safety programs that regulate most dams in the United States.
- **Dam safety research** – a national research program in dam safety focuses on priorities, produces products for both the layperson and the expert, and develops technological tools that drive data collection and analysis toward a better understanding of risk and remediation needs (FEMA 2013b).

The National Dam Safety Program Act was signed into law on October 12, 1996, as part of the Water Resources Development Act of 1996. It was amended by the Dam Safety and Security Act of 2002. It is administered through the Department of Homeland Security (DHS) and FEMA. The Act calls for FEMA to educate the public, dam owners, and others about need for strong dam safety programs, nationally and locally, and to coordinate partnerships among all players within the dam safety community to enhance dam safety (Association of State Dam Safety Officials 2010).

Federal Energy Regulatory Commission Dam Safety Program

The Federal Energy Regulatory Commission (FERC) has the largest dam safety program in the United States. FERC cooperates with a large number of federal and state agencies to ensure and promote dam safety and, more recently, homeland security, regarding dams associated with hydropower. A total of 3,036 dams are part of regulated hydroelectric projects and are included in the FERC program. Two-thirds of these are more than 50 years old. As dams age, concern about their safety and integrity grows, so oversight and regular inspection are important (FERC 2011). FERC staff inspects hydroelectric projects on an unscheduled basis to investigate the following:

- Potential dam safety problems
- Complaints about constructing and operating a dam
- Safety concerns related to natural disasters
- Issues concerning compliance with the terms and conditions of a license (FERC 2011).

Every 5 years, an independent consulting engineer, approved by FERC, must inspect and evaluate projects that include dams higher than 32.8 feet (10 meters) or involve total storage capacity of more than 2,000 acre-feet (FERC 2011).

FERC monitors and evaluates research within geographic areas of concern regarding seismic activity. This information is applied to investigations and structural analyses of hydroelectric projects within these areas. FERC staff also evaluates effects of potential and actual large floods on safety of dams. During and after floods, FERC staff visits dams and licensed projects, determines extent of damage, and directs any studies or remedial measures the licensee must undertake. FERC's *Engineering Guidelines for the Evaluation of Hydropower Projects* guides FERC engineering staff and licensees in evaluating dam safety. The publication is frequently revised to reflect current information and methodologies (FERC 2011).

FERC requires licensees to prepare emergency action plans, and conducts training sessions on how to develop and test these plans. The plans outline an early warning system pertaining to an actual or potential sudden release of water from a dam failure. The plans include applicable operational procedures such as reducing reservoir levels and reducing downstream flows, as well as procedures for notifying affected residents and agencies responsible for emergency management. These plans are frequently updated and tested to ensure that everyone knows what to do in emergency situations (FERC 2011). In addition, FERC provides dam safety publications that Monroe County can share with local municipal officials and residents to help promote regulations awareness and general information about dam safety.



New York State Floodplain Management

Two departments have statutory authorities and programs that affect floodplain management at the local jurisdiction level in New York State: NYSDEC and the Department of State's Division of Building Standards and Codes (BSC).

In 1992, the New York State Legislature amended an existing law, finding that "it is in the interests of the people of this state to provide for participation" in the NFIP (New York Laws, Environmental Conservation, Article 36). Although the legislature recognized that "land use regulation is principally a matter of local concern" and that local governments "have the principal responsibility for enacting appropriate land use regulations," the law requires all local governments with land use restrictions over SFHAs to comply with all NFIP requirements. The law clearly advises local governments that failure to qualify for the NFIP may result in sanctions under federal law, and specifies that the State "will cooperate with the federal government in the enforcement of these sanctions."

The 1992 law that provides for local government participation in the NFIP also requires state agencies to "take affirmative action to minimize flood hazards and losses in connection with state-owned and state-financed buildings, roads and other facilities, the disposition of state land and properties, the administration of state and state-assisted planning programs, and the preparation and administration of state building, sanitary and other pertinent codes." In particular, the commissioner of the NYSDEC is to assist state agencies in several respects, including reviewing potential flood hazards at proposed construction sites.

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 Coastal Management Section works to reduce coastal erosion and storm damage to protect lives, natural resources, and properties through structural and nonstructural means. This Section impacts Monroe County due to its proximity to Lake Ontario; however, the Coastal Management Section also considers shorelines associated with the Atlantic Ocean, major rivers, other Great Lakes, and connecting water bodies, bays, harbors, shallows, and wetlands. The Dam Safety Section 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." 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.

Comprehensive Master Plans

Comprehensive planning is a term used in the United States by land use planners to describe a process that establishes community goals and aspirations in terms of community development. The outcome of comprehensive planning is the "Comprehensive Plan" or "Master Plan" that dictates public policy in



terms of transportation, utilities, land use, recreation, and housing. Towns are authorized to develop and adopt a comprehensive plan by New York State Town Law Section 272-a.; villages can do the same per Section 7-722 of the Village Law. State statutes require that all land use laws in a municipality be consistent with a comprehensive plan.

The County encourages municipal-level comprehensive planning. A County Comprehensive Plan was drafted in the late 1970s-1980s, but it has not been updated since. The status of each jurisdiction's comprehensive master plan is listed in its jurisdictional annex in Section 9.

6.4.2 Administrative and Technical Capabilities – Local

Stormwater Management Planning

When proper controls are not in place, research studies show a clear link between urbanization and increased flooding and pollutant export. The goal of stormwater management is to ensure that quantity and quality of stormwater runoff from a site undergoing construction or development should not be substantially altered from its pre-development conditions (NYSDEC 2014).

According to the federal law commonly known as Stormwater Phase II, permits are required for stormwater discharges from Municipal Separate Storm Sewer Systems (MS4) in urbanized areas and those additionally designated by the NYSDEC. Owners or operators of these MS4s must be authorized in accordance with the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems. The permit requires development of a Stormwater Management Program (SWMP).

Monroe County's stormwater management procedures are managed and updated by the Monroe County Department of Environmental Services (DES) Stormwater Coalition (Coalition). The Coalition acts as a fiscal agent for applying grants and managing funds related to stormwater management. Additionally, the Coalition supports and promotes a variety of outreach initiatives. Popular outreach initiatives include the Water Education Collaborative's "H2O Hero Campaign;" partnerships with the Rochester Museum and Science Center, Seneca Park Zoo, and other popular local educational institutions; and resource information about construction/post-construction programs, pollution prevention, and illicit discharge on the Coalition's website.

The Coalition is also extremely active in planning programs and ensuring compliance with state and federal stormwater regulations. It develops annual reports that document compliance activities and performance measures over the year to evaluate overall effectiveness. The Coalition has also created stormwater management program plans (SWMPP) that describe and document programs implemented by the Coalition to assist municipalities with Phase II requirements. The third major planning initiative is the stormwater master plan, which assesses current water quality conditions, examines regional flooding issues, identifies and ranks potential green infrastructure and mitigation projects, and determines potential benefits from implementation of such projects. The Coalition has focused its initial mitigation and stormwater control efforts on waterways identified by the State as high-priority and impaired, as well as on waterways that have received strong local support.

Monroe County Planning Department

The Monroe County Planning and Development Department serves a few primary functions. It provides technical assistance to towns and villages on local land use regulations, economic development, mapping, and environmental protection. It has affiliations with the County of Monroe Industrial Development Agency (COMIDA), and staffs the Monroe County Industrial Development Corporation (MCIDC) and



the Monroe County Sports Commission (MSCS). Additionally, the Planning and Development Department provides research, mapping, and analytical capabilities to assist the County Administrator, Board of Supervisors, and county departments. The Planning and Development Department includes several divisions—Community Development, Economic Development, Planning Division, and Workforce Development.

Monroe County Planning Board

The County Planning Board reviews and recommends the County Capital Improvement Program, including major improvements of County facilities and amendments to the Capital Improvement Program involving new projects or significant changes. It also advises the County Executive and Legislature on major project initiatives that can be completed by the County or other governmental agencies. The Planning Board's membership of 15 includes local citizens, County Administration representatives, and County Legislature representatives.

Monroe County Agricultural and Farmland Protection Board (AFPB)

Purposes of the AFPB are to advise the County Board of Supervisors and to work on establishment, continuation, modification, or termination of agricultural districts in the County. The AFPB provides expert advice relating to any potential actions, including those pertaining to the nature of farming and farm resources within a district, and to the relation of farming in the district to the County as a whole. It may review notice of intent filings and offer recommendations on effects and reasonableness of proposed activities. The AFPB assesses and approves agricultural and farmland protection plans. The AFPB may also ask the NYS Department of Agriculture and Markets Commissioner to review any state rules or regulations that the AFPB identifies as affecting agriculture within a district.

Members of the AFPB include active farmers, representatives from agribusiness, the County Board of Supervisors, and other county departments. All members have a background and expertise in agriculture. The AFPB is supported by and affiliated with the Monroe County Planning and Development Department.

6.4.3 Administrative and Technical Capabilities – State and Regional

Local mitigation is further supported by county, regional, state, and federal administrative and technical capabilities, including the following:

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

For more than 50 years, NYS DHSES and its predecessor agencies have been responsible for coordinating 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 HMP. NYS DHSES prepared the current State HMP working with input from other state agencies, authorities, and organizations. The State HMP was approved by FEMA on December 18, 2014, and it keeps New York eligible for recovery assistance in all Public Assistance Categories A through G, and for Hazard Mitigation assistance in each of the Unified Hazard Mitigation Assistance Program's five grant programs. For example, the 2008-2011 State HMP allowed the State and its communities to access nearly \$57 million in mitigation grants to



prepare plans and carry out projects. Every 5 years, NYS DHSES updates the New York State HMP. The final, approved draft of the most recent update to the State HMP was used as guidance in completing the Monroe 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: Responsible for reviewing repairs and modifications to dams, and assures that dam owners operate and maintain dams in a safe condition by conducting inspections, technical reviews, enforcement, and emergency planning.
- Flood Control Projects: Responsible for reducing flood risk to life and property through construction, operation, and maintenance of flood control facilities.
- Floodplain Management: 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 Building Standards and Codes (BSC) (Formerly the Division of Code Enforcement and Administration)

Technical Bulletins for the 2010 Codes of New York State

The BSC publishes technical bulletins regularly to convey understanding of and information on the State’s building codes. Seven current technical bulletins (excluding archived bulletins) relate to the Uniform Fire Prevention and Building Code, effective December 2010. Two of these bulletins provide guidance related to flood hazard areas:

- Determination of Stories Above Grade in Elevated One- and Two-Family Dwellings in Flood Hazard Areas
- Electrical Systems and Equipment in Flood-damaged 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 current codes.

Forms and Publications

The BSC 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).

Genesee/Finger Lakes Regional Planning Council

The Genesee/Finger Lakes Regional Planning Council serves Monroe, Livingston, Genesee, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates Counties by fostering coordination among the counties and providing a regional approach to programs with regional implications. These programs include regional, local, and water resources planning; economic development; and data and technology. This Council consists of a Regional Planning Council and a set of Council Advisory Committees.

6.4.4 Fiscal Capabilities – Federal and State

Mitigation projects and initiatives depend largely or entirely on available funding. Monroe County is able to fund mitigation projects through existing local budgets, local appropriations (including referendums and bonding), and a myriad of federal and state loan and grant programs.

Federal Hazard Mitigation Funding Opportunities

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

Hazard Mitigation Grant Program (HMGP)

The HMGP is a post-disaster mitigation program. FEMA makes it available to states after each federal disaster declaration. The HMGP can provide up to 75 percent funding for hazard mitigation measures. The HMGP can be tapped 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 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 HMP (e.g., this plan).

Applicants eligible for the HMGP are state and local governments, certain nonprofit organizations or institutions that support essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for HMGP support; a local government must apply on their behalf. Applications are submitted to NYS DHSES, placed in rank order for available funding, and submitted to FEMA for final approval. Eligible projects not selected for funding are assigned an inactive status and may be reconsidered as additional HMGP funding becomes available. Further information on the HMGP is available at <http://www.fema.gov/hazard-mitigation-grant-program>.

Flood Mitigation Assistance (FMA) Program

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



approved local flood mitigation plan is required before a project can be approved. FMA funds are distributed from FEMA to the State. NYS DHSES serves as the grantee and program administrator for FMA. Additional information on the FMA Grant Program is available at <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 cover 75 percent of a project's cost up to \$3 million. As with the HMGP and FMA, a FEMA-approved local HMP is required for funding approval under the PDM program. More information on the PDM program is available at <http://www.fema.gov/pre-disaster-mitigation-grant-program>.

Federal and State Disaster and Recovery Assistance Programs

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

Individual Assistance (IA)

IA provides help for homeowners, renters, businesses, and some non-profit entities after disasters occur. This program is largely funded by the U.S. Small Business Administration (SBA). Homeowners and renters 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 percent for mitigation. Loans to businesses may occur to repair or replace disaster damages to property owned by the businesses, including real estate, machinery and equipment, and inventory and supplies. Businesses of any size are eligible. Non-profit organizations such as charities, churches, and private universities 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. More information on IA Program Tools is available at <http://www.fema.gov/individual-assistance-program-tools>.

Public Assistance (PA)

PA provides cost reimbursement aid to local governments (state, county, local, municipal authorities, and school districts) and certain non-profit agencies that were involved in disaster response and recovery programs or that underwent 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. More information on PA funds is available at <http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit/>.

Small-Business Administration (SBA) Loans

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 residences. 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. More information on SBA disaster assistance is available at <https://www.sba.gov/content/disaster-assistance>.

Department of Homeland Security (DHS)

The Homeland Security Grant Program (HSGP) plays an important role in implementation of the National Preparedness System by supporting building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient nation. The Fiscal Year (FY) 2013 HSGP supports core capabilities across the five mission areas of Prevention, Protection, Mitigation, Response, and Recovery based on allowable cost. HSGP is composed of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and Operation Stonegarden (OPSG). Together, these grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration. Further information is available at <https://www.dhs.gov/homeland-security-grant-program-hsgp>.

Community Development Block Grants (CDBG)

CDBGs furnish federal funds intended to provide low- and moderate-income households with decent housing, a suitable living environment, and expanded economic opportunities. Eligible activities include construction of and improvements to community facilities, 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 times of “urgent need” (post-disaster) as defined by the CDBG National Objectives, CDBG funding may be used to acquire a property within a floodplain 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. Additional information is available at http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs.

New York State Department of Transportation (NYSDOT)

Damaged Roads and Signals

High winds and flooding have caused significant damage to NYSDOT facilities, roads, and local transportation infrastructure in Monroe County. Repair and replacement of these facilities and infrastructure is necessary. In some cases, municipalities will be direct applicants; therefore, not all FEMA-eligible costs are included for damaged infrastructure. Additional information on NYSDOT funding and grant opportunities is available at <https://www.dot.ny.gov/programs-services>.

Scour Around Culverts and Bridges

Scour causes some of the most significant and destructive effects on roadway culverts and bridges. It results when fast-flowing water erodes and carries away foundation materials (sand and rocks from around and beneath abutments, piers, foundations, and embankments). Water’s intensity and velocity can quickly compromise the integrity of roadway culverts and bridges, and is one of three main causes of bridge failures (the other two are collision and overloading). Superstorm Sandy, Tropical Storm Lee, and Hurricane Irene each exposed the vulnerability of the State’s bridges and culverts to scour, as the storms weakened or damaged these structures across the State.

NYS has 20,000 bridges, with 91 state bridges, 731 local bridges, and 431 culverts at risk of scour. The Scour Critical/Flood Prone Bridge Program will address scoured and critical roadway culverts and bridges. It will provide replacements or permanent scour retrofits to facilities unable to protect the transportation system from storm events. Over \$500 million will be made available for this critical work.



Identified as the initial priority for this project are 105 scour-critical/flood-prone bridges in the Capital District, Long Island, Mid-Hudson, Mohawk Valley, North Country, Finger Lakes, Central/Western, and Southern Tier regions. Monroe County does not have any bridges included in the initial list. More information on this program is available at the NYSDOT website under <https://www.dot.ny.gov/cbow>.

Emergency Watershed Protection Program

The Emergency Watershed Protection (EWP) Program 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 eliminating or muting imminent hazards to life and property caused by floods, fires, drought, windstorms, and other natural occurrences. The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) administers the EWP Program: EWP-Recovery and EWP-Floodplain Easement (FPE). Further information is available at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/ewp/>.

EWP-Recovery

The EWP Program is a recovery effort program aimed at eliminating or muting 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), or 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. Instead, it is designed to install recovery measures to safeguard lives and property as a result of a natural disaster. NRCS completes a Damage Survey Report (DSR) that 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 stream banks, jeopardized water control structures and public infrastructures, wind-borne debris, and damaged upland sites stripped of protective vegetation by fire or drought. Additional information on this program is available at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/>.

EWP-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 that would contribute to restoration of flood storage and flow, provide for control of erosion, or improve practical management of the floodplain easement
- Lands that would be inundated or otherwise damaged 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 flood storage and flow, provide erosion control, and improve 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.



More information is available at:

http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/ewp/?cid=nrcs143_008225.

6.5 Mitigation Strategy Development and Update

6.5.1 Update of Municipal Mitigation Strategies

To evaluate progress on local mitigation actions, each jurisdiction to take actions specified in the previous HMP or related plans (including jurisdictions that participated in the 2011 Monroe County HMP) was provided with a Mitigation Action Plan Review Worksheet. Municipalities were asked to indicate the status for each action (“No Progress/Unknown,” “In Progress/Not Yet Complete,” “Continuous,” “Completed,” or “Discontinued”), and provide review comments on each. Municipalities were requested to quantify the extent of progress and provide reasons for the level progress or why actions were discontinued. Each jurisdictional annex provides a table identifying the prior mitigation strategy, the status of those actions and initiatives, and disposition of those actions within the jurisdiction’s 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 or initiatives identified as “Continuous,” have been carried forward in the municipalities’ local updated mitigation strategies. Municipalities were asked to provide further details on these projects to help better define the projects, identify benefits and costs, and improve implementation.

Certain continuous or ongoing mitigation strategies represent programs that are, or since the 2011 plan have become, fully integrated into the normal operational and administrative framework of the community. These programs and strategies have been identified within the Integration Actions section of each annex (or noted as continuing/ongoing actions) and removed from the updated mitigation strategy.

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

Beginning in July 2015, members of the Steering Committee and the contracted consultant worked directly with each jurisdiction (via phone, e-mail, and local meetings) to help the jurisdiction develop and update its annex and include mitigation strategies. This activity focused on identifying well-defined, implementable projects, with careful consideration of benefits (risk reduction and losses avoided), costs, and possible funding sources (including mitigation grant programs).

Concerted efforts occurred to assure that municipalities developed updated mitigation strategies which included activities and initiatives covering the range of mitigation action types described in recent FEMA planning guidance (FEMA 2013), specifically:

- Local Plans and Regulations – These mitigation actions involve government authorities, policies, or codes that influence the way land and buildings are developed and built.
- Structure and Infrastructure Project – These mitigation actions involve modifications of existing structures and infrastructure to protect them from a hazard or remove them from a hazard area.



The structures could be public or private. Critical facilities and infrastructure also fall within this type of action, as do projects to construct structures to reduce impacts of hazards.

- Natural Systems Protection – These mitigation actions minimize damage and losses, and also preserve or restore functions of natural systems.
- Education and Awareness Programs – These mitigation actions 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 NFIP and CRS, StormReady (National Oceanic and Atmospheric Administration [NOAA]), and Firewise (National Fire Protection Act [NFPA]) Communities.

In consideration of federal and state mitigation guidance, the Steering Committee and Planning Committee recognized that all municipalities would benefit from 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.

FEMA Action Worksheets have been included for new physical projects identified by the County and participating municipalities. Physical projects being carried forward from the prior plan strategies are not necessarily documented on Action Worksheets as the project screening, identification and development, and prioritization process was accomplished during the last planning process. Whether or not the projects were new or “carry forward”, and documented on Action Worksheets or not, all projects included in the updated County and local mitigation strategies have identified hazards addressed, project description, benefits, costs, responsible party, sources of funding, timeline and priority. Further, non-physical actions (e.g. integration actions, studies, etc.) are typically not documented on Action Worksheets.

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 actions and initiatives identified in the 2011 HMP, implementing a process similar to that used to review progress of the municipal mitigation strategy. The County was provided with a Mitigation Action Plan Review Worksheet identifying all county-level actions/initiatives specified in the 2011 plan. 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 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 were identified through:

- Review of 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, including:
 - OEM
 - DES
 - Department of Health
 - Planning and Development Department
 - Sheriff’s Office
 - Stormwater Coalition
 - Department of Transportation
 - Water Authority
- Input from USDA Farm Service Agency
- Input received through the public and stakeholder outreach process.

Additionally, the County has determined that it will review and incorporate the latest information on climate change projections while considering, planning, engineering, and undertaking mitigation actions and other projects throughout the County. Current climate change information is available from the following sources:

- NYSERDA’s ClimAid report and 2014 updated sea level rise projections (<http://www.nyserda.ny.gov/Cleantech-and-Innovation/Environment/Environmental-Research-and-Development-Technical-Reports/Response-to-Climate-Change-in-New-York.aspx>)
- NYS DEC’s Climate Smart Communities program (<http://www.dec.ny.gov/energy/50845.html>)
- NYS Community Risk and Resiliency Act (adopted September 2014) (http://assembly.state.ny.us/leg/?default_fld=&bn=A06558&term=2013&Summary=Y&Actions=Y&Memo=Y&Text=Y).

6.5.3 Mitigation Strategy Evaluation and Prioritization

Section 201.c.3.iii of 44 CFR requires an action plan describing how identified actions will be prioritized.

Recent FEMA planning guidance (FEMA 2013) conveys a modified STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) mitigation action evaluation



methodology that applies a set of 10 evaluation criteria suited to the purposes of hazard mitigation strategy evaluation. This methodology involves systematic consideration of opportunities and constraints of implementing a particular mitigation action.

The Steering Committee and Planning Committee applied the STAPLEE methodology to assist in evaluating and prioritizing mitigation actions identified in the 2017 update. Specifically, the Steering Committee assigned a numeric rank (-1, 0, or 1) to each mitigation action within each of the 10 evaluation criteria. These ranks specify the following:

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

Jurisdiction representatives on the Planning Committee were then asked to validate and update the evaluation values for each of their mitigation initiatives. Numerical results of this exercise were used to help prioritize each action or strategy as “Low,” “Medium,” or “High.” This approach allowed consistent, systematic evaluation and prioritization of mitigation actions.

Jurisdictions may be carrying forward mitigation actions and initiatives from prior mitigation strategies that were prioritized via a different, but not necessarily contrary, approach. Mitigation actions in the 2011 iteration of the Monroe County plan were prioritized according to the following criteria:

- **High Priority:** Actions that would solve the most pressing hazard issues in the County, provide the greatest long-term mitigation benefits, elicit broad public and political backing, are technically feasible and environmentally sound, and would be easily implemented through existing administrative and legal channels.
- **Medium Priority:** Actions that meet the same criteria as the High Priority actions, but address less-pressing potential hazard issues and less-dangerous situations.
- **Low Priority:** Actions that meet the same criteria as the High and Medium Priority actions, but address the least-pressing issues and least-dangerous situations.

Importantly, certain initiatives from the 2011 Monroe County HMP are carried forward in the updated strategy, with or without modification. These initiatives were previously prioritized via approaches that may have differed from those followed in this update process; however, it is reasonable to assume that all evaluation and prioritization approaches included similar considerations (such as mitigation effectiveness, technical and administrative feasibility, and cost-effectiveness).

An earlier priority ranking for a “carry forward” initiative considered by the Steering Committee to remain valid is indicated on the prioritization table; however, the 2017 criteria ratings are indicated with a null “-” marking.

6.5.4 Benefit/Cost Review

Section 201.6.c.3iii of 44 CFR requires 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 evaluation and prioritization of all actions that make up the overall mitigation strategy.

The benefit/cost review applied to evaluate and prioritize projects and initiatives in this plan update process was qualitative; that is, it did not include the level of detail required by FEMA for project grant



eligibility under the HMGP and PDM grant programs. However, jurisdictions have identified costs and benefits associated with projects, actions, or initiatives specified in their local strategies.

Costs—total cost of an action or project—may include administrative costs, construction costs (including engineering, design, and permitting), and maintenance costs.

Benefits—savings from losses avoided because of implementation of a project—may include savings from avoided losses of life-safety; from avoided losses or damages to structures and infrastructure; from avoided losses of service or function; and from avoided economic and environmental damage and losses.

Jurisdictions were asked to identify available actual or estimated dollar values of project costs and associated benefits. Knowledge of defined costs and benefits allows direct comparison of benefits to costs, and a quantitative evaluation of project cost-effectiveness. Often, however, numerical costs or benefits are not identified, or may be impossible to quantitatively assess.

This planning process evaluated project cost-effectiveness by assigning costs and benefits “High,” “Medium,” and “Low” ratings. If 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

If quantitative estimates of costs or benefits were not available, qualitative ratings according to the definitions listed in Table 6-5 were applied:

Table 6-5. Qualitative Cost and Benefit Ratings

Costs	
High	Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (such as bonds, grants, and fee increases).
Medium	The project could be implemented with existing funding but would require 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.

Following this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, and medium over low) are considered cost-effective.

For some of the Monroe County initiatives identified, the jurisdictions 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. The benefit/cost analysis occurs during preparation of funding applications via application of the FEMA Benefit/Cost Analysis (BCA) model process. The County and its towns and villages are committed to implement mitigation strategies with benefits that exceed costs. Regarding projects that require BCA, but for which jurisdictions are not seeking financial assistance from grant programs, the jurisdictions reserve the right to define “benefits” according to parameters that meet their needs, and according to the goals and objectives of this plan.