



SECTION 6. MITIGATION STRATEGIES

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

This section includes:

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

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

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

6.1 BACKGROUND AND PAST MITIGATION ACCOMPLISHMENTS

In accordance with the requirements of the Disaster Mitigation Act of 2000 (refer to Page 1-1 for more detail on DMA 2000), a discussion regarding past mitigation activities and an overview of past efforts is provided as a foundation for understanding the mitigation goals, objectives, and activities outlined in this plan update. The County, through previous and ongoing hazard mitigation activities, has demonstrated that it is proactive in protecting its physical assets and citizens against losses from natural hazards. Examples of previous and ongoing actions and projects include the following:

- The County facilitated the development of the original Onondaga County Multi-Jurisdictional Hazard Mitigation Plan. The current planning process represents the regulatory five-year plan update process, which includes participation of 35 jurisdictions in the county, along with key county and regional stakeholders.
- All municipalities participating in this HMP update participate in the National Flood Insurance Program (NFIP), which requires the adoption of FEMA floodplain mapping and certain minimum standards for building within the floodplain.
- Reports, plans, and studies relating to or including information on natural hazards or natural hazard policies affecting Onondaga County have been reviewed and incorporated into this plan update as appropriate, as discussed in Section 3 (Planning Process) and References.
- In 2008, the FIS and FIRM for Onondaga County were revised to reflect a countywide format. FEMA held several meetings with officials to present the preliminary FIRM to the communities in August 2010. The preliminary FIRM was released on June 30, 2018. The preliminary FIRM developed during this time provided the following:
 - Incorporated revised flood hazard data for the Harbor Brook, Limestone Creek, Meadow Brook, Ninemile Creek, Onondaga Creek, and Skaneateles Creek;
 - Converted the manual format flood maps to a GIS-based digital format;
 - Included a digital FIRM database;
 - Converted flood hazard data from NGVD 29 to NAVD 88; and
 - Restudies were performed for approximately 70 stream miles in the county. Re-delineations were also performed for approximately 232 stream miles using digital elevation data and effective flood elevations to revise the one-percent and 0.2-percent annual chance flood hazard areas without conducting new hydrologic or hydraulic analyses.



- Once the preliminary maps were provided to the communities, they underwent a review and public comment period. During this time, the City of Syracuse filed appeals with FEMA to make corrections on the preliminary maps. FEMA adjusted the maps based on the city's appeals. The revised preliminary maps were released to Onondaga County on June 29, 2012 and final preliminary maps were provided to the City of Syracuse in May 2015. The preliminary maps became effective in November 2016.
- Onondaga County Soil and Water Conservation District
 - In 2017, the staff authored 17 grants and 14 were funded, bringing an additional \$3 million to implement best management practices programs to address non-point source pollution and continue to improve water quality in the county (Onondaga County Office of the Comptroller 2018).
- Onondaga County Department of Transportation has completed the following projects:
 - Limestone Creek Bank Stabilization (North Street Reconstruction Project)
 - Hitchings Road Bridge Scour Protection
 - Watervale Road Bridge Scour Protection
 - Tanner Road Culvert Replacement
- The Onondaga County Office of Environment, together with USGS and NWS, installed stream gages and flood forecasting tools along the canal system in the county.
- Onondaga County Climate Action Plan was updated in 2017. It includes a baseline inventory of the county's carbon emissions, a listing of those emissions by source, and recommendations for improving their greenhouse gas inventory. The update includes completed projects and how those projects are reducing carbon emissions. The initial plan and updates can be viewed online: <http://www.ongov.net/environment/CAP.html>
- Onondaga County, working along with the inclusive municipalities, conducts and facilitates community and public education and outreach to include, but not be limited to, the following to promote and effect natural hazard risk reduction:
 - Enhance the Onondaga County HMP website as a current source for the latest version of this Plan, annual plan review reports, mitigation grant announcements, and related mitigation guidance and resources. (SOCPA, Office of Environment pages, home page link on ongov.net, dedicated hazard mitigation pages on ongov.net, linked from municipal sites, social media posts)
 - Contact each municipality to encourage them to provide and maintain links to the Onondaga County HMP website. (done during update)
 - Prepare and distribute informational letters to flood vulnerable property owners and neighborhood associations, explaining the availability of mitigation grant funding to mitigate their properties, and instructing them on how they can learn more and implement mitigation. hazard mitigation web pages
 - Use available municipal email notification systems and newsletters to better educate the public on flood insurance, the availability of mitigation grant funding, and personal natural hazard risk reduction measures. Email blasts to hazard and planning contacts
 - Work with regional agencies, neighborhood associations, civic and business groups to disseminate information on flood insurance and the availability of mitigation grant funding. Work with RPDB and municipalities
- Onondaga County works to promote awareness and use of NYAlert by communities and citizens, including information on the county website, etc., promotes public awareness of hazard mitigation planning activities, and provides a venue for ongoing public and stakeholder input. The County SOCPA and SWCD assist local municipalities with training opportunities for municipal planning and zoning officials.



6.2 GENERAL MITIGATION PLANNING APPROACH

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

- DMA 2000 regulations, specifically 44 CFR 201.6 (local mitigation planning).
- FEMA *Local Mitigation Planning Handbook*, March 2013.
- FEMA *Local Mitigation Plan Review Guide*, October 1, 2011.
- FEMA *Integrating Hazard Mitigation into Local Planning*, March 1, 2013.
- FEMA *Plan Integration: Linking Local Planning Efforts*, July 2015.
- FEMA *Mitigation Planning How-To Guide #3, Identifying Mitigation Actions and Implementing Strategies* (FEMA 386-3), April 2003.
- FEMA *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards*, January 2013.
- NYS DHSES *New York State Hazard Mitigation Planning Standards*, 2017.
- NYS DHSES *New York State Hazard Mitigation Planning Standards Guide*, 2017.

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

- Section 6.3 - Review and update mitigation goals and objectives
- Section 6.4 - Identify mitigation capabilities and evaluate their capacity and effectiveness to mitigate and manage hazard risk
- Section 6.5 - Prepare an implementation strategy, including:
 - Identification of progress on previous county and local mitigation strategies
 - Development of updated county and local mitigation strategies, and
 - Prioritization projects and initiatives in the updated mitigation strategy

6.3 REVIEW AND UPDATE OF MITIGATION GOALS AND OBJECTIVES

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

6.3.1 Goals and Objectives

According to CFR 201.6(c)(3)(i): “The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.” The mitigation goals were developed based on the risk assessment results, discussions, research, and input from the committee, existing authorities, policies, programs, resources, stakeholders, and the public. The Steering Committee reviewed the 2013 goals and objectives and made revisions for the 2019 update based on the risk assessment results, discussions, research, and input from amongst the committee, existing authorities, policies, programs, resources, stakeholders and the public. For the purposes of this plan, goals and objectives are defined as follows:

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

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

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

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



Objectives are short-term aims which, when combined, form a strategy or course of action to meet a goal. Unlike goals, objectives are a stand-alone measurement of the effectiveness of a mitigation action, rather than as a subset for a goal. The objectives also are used to help establish priorities.

During the 2019 plan update process, the Steering Committee reviewed the goals and objectives established in the 2013 HMP. These goals and objectives were reviewed in consideration of the hazard events and losses since the 2013 plan, the updated hazard profiles and vulnerability assessment, the goals and objectives established in the New York State 2014 HMP, County and local risk management plans, as well as direct input on how the County and municipalities need to move forward to best manage their hazard risk. Amendments include additions/edits to goals and/or objectives to express the planning partnership's interests in integrating this plan with other planning mechanisms/programs, and to support mitigation through the protection and preservation of natural systems, including particular reference to certain goals and objectives in the NYS 2014 HMP update as identified in the table below.

As a result of this review process, the Goals and Objectives for the 2019 update have been amended, as presented in Table 6-1. *Italicized* text indicates the updates for this plan.

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

Goals	Objectives
Goal 1: Protect Life and Property	Objective 1-1: Address repetitive and severe repetitive loss properties throughout the County.
	Objective 1-2: Protect and maintain critical facilities and infrastructure.
	Objective 1-3: Identify flood and other natural hazard areas.
	Objective 1-4: Improve detection, warning and communication systems.
	Objective 1-5: Pursue federal and state assistance toward the improvement of facilities and infrastructure.
	<i>Objective 1-6: Develop, maintain, strengthen and promote enforcement of ordinances, regulations and other mechanisms that facilitate sustainable construction standards.</i>
	<i>Objective 1-7: Integrate risk reduction concepts, policies, and projects into existing local and regional planning and implementation mechanisms, such as comprehensive plans, codes, and capital improvement plans.</i>
Goal 2: Increase Understanding and Awareness of Natural Hazard Risk	<i>Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual and household preparedness activities with the overall goal of reducing general public dependency on disaster response and recovery support services.</i>
	<i>Objective 2-2: Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure of hazards and participate in state and local programs and efforts that focus on practices that support or enhance resiliency.</i>
	<i>Objective 2-3: Working with municipalities, provide tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities including promotion of awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards.</i>
	Objective 2-4: Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards.
Goal 3: Promote Resiliency throughout the County	<i>Objective 3-1: Promote resilient and sustainable land development practices to improve the ability to recover and bounce back faster from impacts of natural hazard events.</i>
	Objective 3-2: Develop and maintain adequate services and utilities to serve the County's population and business
	<i>Objective 3-3: Develop business and government continuity plans to decrease potential local economic losses.</i>



Goals	Objectives
	<p><i>Objective 3-4: Reduce or eliminate hazard risks throughout the county. This would decrease recovery time and reduce social dislocation, and family and individual stress.</i></p> <p><i>Objective 3-5: Encourage building and rebuilding practices that address resiliency through higher standards and sustainable design to resist impacts of natural hazards and to reinvest in existing infrastructure rather than expanding the urbanized area.</i></p>
Goal 4: Protect the environment and natural resources	<p><i>Objective 4-1: Promote the continued use of natural systems to reduce long-term hazard related costs and maximize hazard mitigation effectiveness to include sustainable flood and erosion control projects, reduction of nutrient loading in water systems and activities that demonstrate resiliency practices.</i></p> <p><i>Objective 4-2: Protect and preserve environmentally sensitive and critical areas</i></p> <p><i>Objective 4-3: Continue to preserve, protect and acquire open space</i></p> <p><i>Objective 4-4: Incorporate hazard considerations into land-use planning and natural resource management.</i></p>
Goal 5: Promote and Support Partnerships	<p><i>Objective 5-1: Create, maintain and enhance collaborative efforts including inter-jurisdiction and inter-agency communication, coordination, and partnerships and other identified stakeholders involved with natural hazard management to promote resiliency.</i></p> <p><i>Objective 5-2: Engage public agencies, citizens, neighborhood groups, non-profit organizations, businesses, and industry to implement mitigation actions more effectively.</i></p> <p><i>Objective 5-3: Encourage shared services in acquiring maintaining and providing emergency services and equipment.</i></p>
Goal 6: Enhance Disaster Preparedness, Response, and Recovery	<p><i>Objective 6-1: Enact policies to prioritize and implement mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.</i></p> <p><i>Objective 6-2: Coordinate and integrate hazard mitigation actions with existing local emergency operations plans.</i></p> <p><i>Objective 6-3: Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.</i></p> <p><i>Objective 6-4: Review and improve, if necessary, emergency traffic routes and evacuation routes; communicate such routes to the public and communities via the County's emergency notification system, social media, and news media outlets.</i></p> <p><i>Objective 6-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.</i></p> <p><i>Objective 6-6: Support County Emergency Management function as the central venue for community preparedness requirements and response efforts.</i></p>

6.4 CAPABILITY ASSESSMENT

According to FEMA's *Mitigation Planning How-To Guide #3*, a capability assessment is an inventory of a community's missions, programs, and policies and an analysis of its capacity to carry them out. This assessment is an integral part of the planning process. The assessment process enables identification, review, and analysis of current local and state programs, policies, regulations, funding, and practices that could either facilitate or hinder mitigation.

During the original planning process, the county and participating jurisdictions identified and assessed their capabilities in the areas of existing programs, policies, and technical documents. By completing this assessment, each jurisdiction learned how or whether they would be able to implement certain mitigation actions by determining the following:

- Limitations that may exist on undertaking actions;
- The range of local and/or state administrative, programmatic, regulatory, financial and technical resources available to assist in implementing their mitigation actions;



- Actions deemed infeasible as they are currently outside the scope of capabilities;
- Types of mitigation actions that may be technically, legally (regulatory), administratively, politically, or fiscally challenging or infeasible;
- Opportunities to enhance local capabilities to support long term mitigation and risk reduction.

During the plan update process, all participating jurisdictions were tasked with developing or updating their capability assessment, paying particular attention to evaluating the effectiveness of these capabilities in supporting hazard mitigation, and identifying opportunities to enhance local capabilities.

County and municipal capabilities in the Planning and Regulatory, Administrative and Technical, and Fiscal arenas may be found in the Capability Assessment section of each jurisdictional annex in Section 9 - Annexes. Within each annex, participating jurisdictions identified how they have integrated hazard risk management into their existing planning, regulatory and operational/administrative framework (“integration capabilities”), and how they intend to promote this integration (“integration actions”). A further summary of these continued efforts to develop and promote a comprehensive and holistic approach to hazard risk management and mitigation is presented in Section 7 – Plan Maintenance.

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

6.4.1 Planning and Regulatory Capabilities - County and Local

Municipal Land Use Planning and Regulatory Authority

The County and municipalities have various land use planning mechanisms that can be leveraged to mitigate flooding and support natural hazard risk reduction. Specific County and local planning and regulatory capabilities are identified in their jurisdictional annexes in Section 9 – Annexes. These include but are not limited to: comprehensive plans, flood damage prevention ordinances, local codes and regulations, stormwater regulations, and municipal level plans. A list of plans review is provided in Section 3 (Planning Process) and summarized in Appendix I (Plan Review Matrix).

The Syracuse-Onondaga Planning Agency (SOCPA) provides a wide range of planning services to support the County and its communities. SOCPA provides land use and comprehensive planning, including the development of the County’s comprehensive land use plan, , in addition to the following services:

- Inter-municipal coordination of development application reviews through the Onondaga County Planning Board (OCPB).
- Provision of training and planning information for municipal planners and the public through the Onondaga County Planning Federation (OCPF).
- Participation in several venues supporting sustainability, including the OCPF, County’s Environmental Sustainability Advisory Committees, Council on Environmental Health,).
- Farmland Protection planning, including administering the Agricultural Districts and Purchase of Development Rights programs, sitting on the County Legislature’s Agriculture & Farmland Protection Board, and overseeing the Agricultural and Farmland Protection Plan for Onondaga County.
- Participating on study and advisory committees as a member agency of the Syracuse Metropolitan Transportation Council (SMTC), which is responsible for multi-agency transportation planning and funding coordination for Onondaga County.



- Collection, analysis and distribution of land use data, including US Census data as a NYS Data Center Affiliate.
- Special topic planning projects on behalf of Onondaga County and its municipalities
- – Creation and maintenance of the Multi-Jurisdictional Hazard Mitigation Plan for Onondaga County.
- Technical assistance to County and City departments and to the towns and villages.
- GIS mapping services to County departments and municipalities (SOCPA 2019).

SOCPA staff provided leadership for the Onondaga HMP Update planning effort. In addition, the SOCPA planners on the Steering Committee provided continuous support for the implementation of mitigation projects and mitigation educational outreach and serves as a resource to the County and municipalities.

Section 239 of New York State General Municipal Law (GML) requires the referral of certain local planning actions to the County Planning Board for the examination of possible inter-municipal impacts. The Onondaga County Planning Board operates under New York State General Municipal Law §239 l, m, and n to advise local boards on the potential intermunicipal or countywide impact of local land use decisions. The Planning Board uses the Onondaga County comprehensive plan to direct recommendations on municipal land use referrals and to review proposed county capital improvement projects.

Emergency and Evacuation Plans

The Onondaga County Department of Emergency Management is designated to coordinate all emergency management activities in the county, including: mitigation, preparedness, response, and recovery. The department works collaboratively with many other agencies and organizations, which enables the county to better protect life and property during disasters and emergencies. The Department of Emergency Management maintains the Onondaga County Comprehensive Emergency Management Plan (CEMP) which is a comprehensive approach to emergency management. The CEMP is an all-hazards plan that outlines how the county will efficiently and effectively manage emergencies and disaster situations. The CEMP provides protocol for sheltering and evacuation of residents in the event of an emergency (refer to the Disaster Response section of the CEMP).

Local Waterfront Revitalization Program

The Waterfront Revitalization of Coastal Areas and Inland Waterways Act offers local governments the opportunity to participate in the State's Coastal Management Program (CMP) on a voluntary basis by preparing and adopting a Local Waterfront Revitalization Program (LWRP), providing more detailed implementation of the State's CMP through use of such existing broad powers as zoning and site plan review (New York State Division of Planning 2018).

When an LWRP is approved by the New York State Secretary of State, State agency actions are required to be consistent with the approved LWRP to the maximum extent practicable. When the federal government concurs with the incorporation of an LWRP into the CMP, federal agency actions must be consistent with the approved addition to the CMP. Title 19 of NYCRR Part 600, 601, 602, and 603 provide the rules and regulations that implement each of the provisions of the Waterfront Revitalization of Coastal Areas and Inland Waterways Act including but not limited to the required content of an LWRP, the processes of review and approval of an LWRP, and LWRP amendments (New York State Division of Planning 2018).

A LWRP consists of a planning document prepared by a community, and the program established to implement the plan. An LWRP may be comprehensive and address all issues that affect a community's entire waterfront, or it may address the most critical issues facing a significant portion of its waterfront. An approved LWRP reflects community consensus and provides a clear direction for appropriate future development. It establishes a long-



term partnership among local government, community-based organizations, and the State. Also, funding to advance preparation, refinement, or implementation of Local Waterfront Revitalization Programs is available under Title 11 of the New York State Environmental Protection Fund Local Waterfront Revitalization Program (EPF LWRP) among other sources (New York State Division of Planning 2018).

Any village, town, or city located along the State's coast or designated inland waterway can prepare a new or amend an existing Local Waterfront Revitalization Program. Municipalities are encouraged to address local revitalization issues in a broader context, aligned with regional economic development strategies and regional resource protection and management programs (New York State Division of Planning 2018).

Per the NYS DHSES Office of Planning & Development website, as of the date of this plan update, the Town of Clay is the only approved LWRP plan in Onondaga County. The Town of Clay Local Waterfront Revitalization Program (LWRP) is a locally prepared comprehensive land and water use plan for the Town's natural, public, and developed waterfront resources along the Seneca River, Oneida River and Erie Canal.

The Town of Clay LWRP provides a comprehensive framework within which critical waterfront issues can be addressed, and planned waterfront improvement projects can be pursued and implemented. The Town of Clay LWRP was adopted by the Town Board on March 19, 2012, and approved by the New York State Secretary of State on February 4, 2013.

Refer to https://www.dos.ny.gov/opd/programs/WFRevitalization/LWRP_status.html to see a list of all approved LWRPs.

6.4.2 Planning and Regulatory Capabilities – State and Federal

National Flood Insurance Program (NFIP)

The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968 (FEMA's 2002 National Flood Insurance Program (NFIP): Program Description). The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Please refer to the Flood Hazard Profile in Section 5.4.2 - Flood for information on recent legislation related to reforms to the NFIP.

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

All municipalities in Onondaga County actively participate in the NFIP. As of May 31, 2018, there were 1,753 NFIP policies in Onondaga County. There have been 889 claims made, totaling over \$6.4 million for damages to structures and contents. There are 46 NFIP Repetitive Loss (RL) property and zero Severe Repetitive Loss (SRL) properties in the County. Further details on the County's flood vulnerability may be found in the flood hazard profile in Section 5.4.2 - Flood.



Municipal participation in and compliance with the NFIP is supported at the federal level by FEMA Region II and the Insurance Services Organization (ISO), at the state-level by the New York State Department of Environmental Conservation (NYSDEC) and New York State Office of Emergency Management (NYS DHSES). Additional information on the NFIP program and its implementation throughout the county may be found in the flood hazard profile (Section 5.4.2 - Flood).

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

Freeboard: By law, NYS requires Base Flood Elevation plus 2 feet (BFE+2) for all construction. When there is a base flood elevation available, the lowest floor including any basement, must be at or above the base flood elevation (plus two feet beginning in 2007). Elevation may be by means of properly compacted fill, a solid slab foundation, or a "crawl space" foundation which contains permanent openings to let flood waters in and out. Non-residential structures may be flood proofed in lieu of elevation. Where a local floodplain administrator has information to estimate a base flood elevation, such as historic flood records or a hydraulic study, that elevation must be used. If the development consists of more than 5 acres or more than 50 lots, the permit applicant must develop a base flood elevation and build accordingly (NYDEC 2018). Communities may go beyond this requirement, providing for additional freeboard. In most New York communities, new structures must have the lowest floor three feet or more above the highest adjacent grade.

Cumulative Substantial Improvements/Damages: The NFIP allows improvements valued at up to 50% of the building's pre-improvement value to be permitted without meeting the flood protection requirements. Over the years, a community may issue a succession of permits for different repairs or improvement to the same structures. This can greatly increase the overall flood damage potential for structures within a community. The community may wish to deem "substantial improvement" cumulatively so that once a threshold of improvement within a certain length of time is reached, the structure is considered to be substantially improved and must meet flood protection requirements.

NFIP Community Rating System (CRS)

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

As of April 2018, the City of Syracuse is a Class 7 and actively participates in the CRS program. Other communities in Onondaga County noted they explored the possibility of participating, but the program savings would not be cost-beneficial in the long run.

U.S. Army Corps of Engineers

Under Section 404(e) of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) can issue general permits to authorize activities that have only minimal individual and cumulative adverse environmental effects. A nationwide permit (NWP) is a general permit that authorizes activities across the country, unless a district or division commander revokes the nationwide permit in a state or other geographic region. There are 54 nationwide permits, and they authorize a wide variety of activities, including: linear transportation projects, bank stabilization activities, residential development, commercial and industrial developments, aids to navigation and



certain maintenance activities (USACE 2017). Details on each NWP can be found here: <https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll7/id/6711>.

There are three types of USACE permits: standard, nationwide (described above), and regional. Standard permits are individual permits that involve full public interest review of an individual permit application and includes the issuance of a public notice for any project that does not meet the terms and conditions of an NWP or a Letter of Permission (LOP). Regional general permits are for small, specialized projects. In New York State, there are six regional general permit categories (see <https://www.lrb.usace.army.mil/Missions/Regulatory/New-York-Permit-Information/>) (USACE Buffalo District 2019).

New York State Floodplain Management

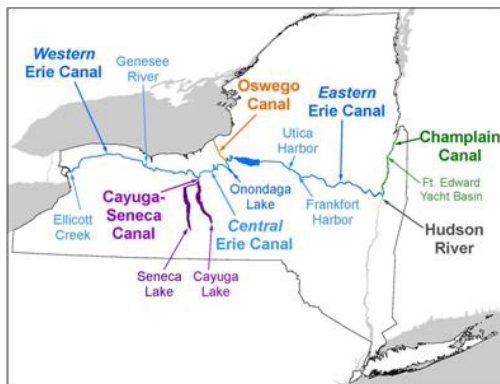
There are two departments that have statutory authorities and programs that affect floodplain management at the local jurisdiction level in New York State: the New York State Department of Environmental Conservation (NYSDEC) and the Department of State's Division of Code Enforcement and Administration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

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

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

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

New York State Canal Corporation



The Canal Corporation runs the New York State Canal System, which includes the Erie, Champlain, Oswego and Cayuga-Seneca canals. They manage 524 miles of waterways for the four canals that incorporate different infrastructure components, including 57 locks and 20 lift bridges. Additionally, the Canal Corporation maintains 22 reservoirs that are used to manage the water levels along the canals (Canal Corporation 2019).

Portions of the Canal System are located within Onondaga County – Oneida Lake, Onondaga Lake, and Cross Lake, with locks located in Baldwinsville and Brewerton (Town of Cicero). All three are identified as navigable waters in the USACE

Buffalo District. Based on their USACE status, permits are required for any work done in and around these bodies of water. Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) lists the types of activities requiring permits (USACE 2019).



Additionally, the Canal Corporation requires permits for work or use/occupancy of canal property. The Canal Corporation states that *occupancy permits are issued to allow the occupation and use of canal real property irrespective of whether any work-related activity may be occurring on such property. Occupancy permits are issued for an array of temporary approved uses including: access, beautification, water diversion, docking and many other uses as long as they do not interfere with operation or maintenance of the Canal System and are consistent with the Canal Recreationway Plan and the Corporation's goals.* Work permits are issued to allow an improvement or physical alternation to Canal real property. They are also issued for short-term use where an occupancy permit is not needed (New York State Canal Corporation 2019).

6.4.3 Administrative and Technical Capabilities - County and Local

This subsection provides a summary of capabilities to support hazard mitigation for local jurisdictions, some of which who sat on the Steering Committee and others who provide a resource for support and information to communities. Specific local capabilities (e.g. police, fire, EMS, highway and public works departments, etc.) are provided in Section 9 (Jurisdictional Annexes).

Syracuse-Onondaga County Planning Agency

The Syracuse-Onondaga County Planning Agency (SOCPA) serves to provide and promote effective planning by the County and municipalities including the City of Syracuse. It provides technical planning guidance and assistance which provides a long-range, comprehensive view to ensure high-quality built environments, cost-effective infrastructure, natural resource stewardship, and economic growth. The agency, through its planning efforts, promotes community values, satisfies community needs, and protects the environment within the County's fiscal ability. The ultimate goal of the agency is a sustainable, attractive, and well maintained metropolitan area that can attract and support economic growth (SOCPA 2019).

The Syracuse-Onondaga County Planning consists of the following divisions:

- County Planning Services
- City Planning Services
- Geographic Information System
- E911 Address Administration
- Syracuse Office of Zoning Administration (SOCPA 2019)

Onondaga County Department of Emergency Management

The mission of the Department of Emergency Management is to partner with stakeholders to promote life safety and preservation of property through a progressive cycle of emergency and disaster preparedness, response, recovery and mitigation. The department is comprised of three main bureaus:

- Emergency Management – is designated to coordinate all emergency management activities: mitigation, preparedness, response and recovery.
- Emergency Medical Services Bureau – provides leadership, support, education and coordination of pre-hospital emergency medical care within Onondaga County. The EMS Bureau works closely with all EMS providers in Onondaga County by sharing information, maintaining a resource list for mutual aid purposes, supporting training programs, and working collaboratively with EMS agency directors and representatives from local and state public health departments.
- Fire Bureau - The Onondaga County Fire Bureau provides coordination and assist to local fire departments in Onondaga County by: overseeing Fire Mutual Aid in Onondaga County, negotiating and coordinating fire service training, overseeing the County Fire Investigation Unit, Project Concern: A



Juvenile Firesetters Program, overseeing codes enforcement of County owned property, and supporting several Special Response Teams (Onondaga County Department of Emergency Management 2019).

Onondaga County Soil and Water Conservation District

The Onondaga County Soil and Water Conservation District (OCSWCD) is a special purpose district created to develop and implement programs of soil, water, and related natural resource conservation to Onondaga County. They offer natural resources programs and services including technical assistance to farmers and landowners, training programs, environmental education programs, and the annual tree and shrub sale. The mission of OCSWCD is to *promote excellence in the wise use of rural/urban natural resources. This is accomplished by: reducing erosion and nutrient runoff from agricultural and non-agricultural nonpoint sources by the use of best management practices; providing information and education to the public on sound natural resource conservation principles and practices; and promoting the improvement, protection, restoration, and maintenance of surface and ground water quality* (Onondaga County Office of the County Comptroller 2018).

Specific services provided by OCSWCD include:

- Agricultural assessments – OCSWCD completes soil group worksheets for landowners applying for an agricultural assessment. These worksheets provides the soil types found on the landowner's property and identifies how many acres of each soil group they have. This information is used to help determine a tax exemption if the landowner's land is identified as agricultural land.
- Equipment Rentals – OCSWCD provides equipment rental to producers inside the Skaneateles Lake watershed and Onondaga County. Rental information is found on their website: <https://www.ocswcd.org/conservation-equipment-rental.html>
- Hydroseeding – since 2005, OCSWCD offers a hydroseeding program to municipalities, farms, and stream construction projects. They provide seed, hydro-mulch with tactifier, fertilizer and labor force.

Onondaga County Water Authority

The Onondaga County Water Authority (OCWA) is a public benefit corporation created by the New York State Legislature and has the responsibility of supplying and selling potable water in Onondaga, Oswego, and Madison and Oneida Counties. OCWA serves about 340,000 people primarily in the suburban areas surrounding the City of Syracuse. The Authority currently has a staff of 128 employees. The Authority's mode of operation is from user fees collected from the more than 91,000 customers (OCWA 2019). OCWA served on the Steering Committee during the plan update process. Refer to Section 9.37 (OCWA jurisdictional annex) for details on their capabilities and services provided to Onondaga County.

Onondaga County Office of the Environment

The Office of the Environment's primary responsibilities include: developing internal county policies and procedures to minimize environmental liabilities/exposures, assisting Onondaga County departments with environmental compliance needs, and coordinating interdepartmental county response to environmental issues/situations. They are also responsible for providing stormwater management to the County and educating the public on different environmental impacts in Onondaga County (Office of the Environment 2019).

The Office is also responsible for updating and implementing the County's Climate Action Plan. This plan includes a baseline inventory of Onondaga County's carbon emissions from County operations, identification of those emissions by source, and recommendations for improving the County's greenhouse gas inventory. They assist with finding financing for implementing the recommendations of the plan (Office of the Environment 2019).



Onondaga County Health Department – Division of Environmental Health

The Onondaga County Health Department works to protect and improve the health of county residents. Services provided by the department include: collecting and analyzing health data, tracking diseases, investigating deaths, processing forensic evidence, issuing birth and death certificates, providing volunteer opportunities, and helping residents prepare for public health emergencies (County Environmental Health 2019).

The Division of Environmental Health works to ensure a safe and healthy environment for residents of Onondaga County. Their duties include inspecting homes for lead, investigating animal bites, protecting the air and drinking water, inspecting restaurants, and ensuring the safety of public pools and beaches. The division also provides information and statistics regarding Lyme disease, rabies, and mosquito-borne illnesses in Onondaga County (County Environmental Health 2019).

Onondaga County Parks Department

The Onondaga County Parks Department provides recreational, cultural, educational, and environmental opportunities in a 6,500-acre system (Onondaga County Parks 2019).

Onondaga County Legislature

The Legislature is the chief policy-making body for Onondaga County. In discharging its responsibilities, the Legislature operates through six standing committees. Each standing committee oversees the work of executive branch departments and is expected to review and study policy issues related to the subject matter under its jurisdiction (Onondaga County Legislature 2019):

- County Facilities
- Environmental Protection
- Health
- Human Services
- Planning and Economic Development
- Public Safety (Onondaga County Legislature 2019)

Each standing committee oversees the work of executive branch departments and is expected to review and study policy issues related to the subject matter under its jurisdiction. The Legislature's primary annual responsibility is to review the County Executive's proposed budget, modify it (if necessary) and approve an adopted County Budget (Onondaga County Legislature 2019).

Onondaga County Department of Transportation

The Onondaga County Department of Transportation's mission is to provide managerial engineering and technical expertise for 808 miles of county roads. The objective is to provide the traveling public with a safe, convenient and efficient network of highways and bridges. The department divided the county into four sections, with each section having a shop, equipment, and employees to service the roads in the section (Onondaga County Department of Transportation 2019).

Engineering Section

This section provides engineering services for the department to maintain the county highway system. Functions and activities include issuance of highway work and access permits, review of planning board cases, highway and drainage design and construction engineering, bridge design and construction engineering survey activities. Also provided are the provision of technical services for highway maintenance activities, preparation of right of



way maps and acquisition of right of way, litigation investigation and the oversight of consultants for bridge design and highway, construction and construction management contracts (Onondaga County Department of Transportation 2019).

Road Maintenance Section

These employees provide for the maintenance of county roads, culverts, shoulders and rights of way, as well as, the 210 bridges in the county system. Cost information is kept for payroll, equipment rental and materials on more than fifty activities through our activity-based cost accounting system (Onondaga County Department of Transportation 2019).

Road Machinery Section

This section is responsible for all of the maintenance to equipment and buildings in the department (Onondaga County Department of Transportation 2019).

County Snow Removal Program

The County of Onondaga is responsible for 802 miles of road within its boundaries. The county receives an average of 122 inches of snow annually. Snow removal is, therefore, a major priority for the department (Onondaga County Department of Transportation 2019)..

Onondaga County Department of Water Environment Protection

The Department of Water Environment Protection (WEP) protects and improves the water environment of Onondaga County with wastewater treatment, storm water management, and other green programs, including a tree planting program and a free rain barrel program for city residents in eligible areas. WEP also maintains the sewer system for all of Onondaga County outside of the City of Syracuse, Baldwinsville, and North Syracuse (WEP 2019).

Syracuse Metropolitan Transportation Council

The Syracuse Metropolitan Transportation Council (SMTC) is the state-designated Metropolitan Planning Organization (MPO), responsible for administering continuous and comprehensive transportation planning for the region. SMTC's planning jurisdiction, called the Metropolitan Planning Area (MPA), covers Onondaga County, the Town of Sullivan in Madison County, and the Towns of Hastings, Schroepfel, West Monroe and a small portion of Granby in Oswego County. As the MPO, the SMTC provides the forum for cooperative decision making in the development of transportation plans, programs and recommendations. Its committees are comprised of elected and appointed officials, representing local, state and federal governments, agencies, and organizations having interest in or responsibility for transportation planning and programming. The SMTC also provides an opportunity for citizens to participate in the discussion of specific transportation issues and projects, and encourages the public to get involved in the public involvement opportunities available (SMTC 2019).

CNY Regional Planning & Development Board

The Central New York Regional Planning and Development Board (CNY RPDB) is a public agency that was established in 1966 by Cayuga, Cortland, Madison, Onondaga, and Oswego Counties under the provisions of Article 12B of the New York State General Municipal Law (CNY RPDB 2019).

The CNY RPDB is governed by a 35-member board of directors that is appointed by its five member counties. Financial support for the agency is provided by member county contributions, state and federal grants, and contract service revenue. The CNY RPDB provides a comprehensive range of services associated with the



growth and development of communities in Central New York with a focus on eight major program areas including economic development, environmental management, community development, energy management, land use and transportation planning, information and research services, and intergovernmental coordination (CNY RPDB 2019).

New York State Federation of Lake Associations

New York State Federations of Lake Associations (NYSFOLA) is a non-profit coalition of lake associations, individuals, and corporate members dedicated to the protection and restoration of lakes across New York State. They provide education and outreach to lake associations, including information on harmful algal blooms and invasive aquatic plant species. NYSFOLA also assists NYSDEC with the Citizens Statewide Lake Assessment Program (CSLAP), which is a volunteer lake monitoring program. Volunteers are responsible for collecting water quality data and samples from June through September. Volunteers also submit aquatic plant samples, take lake level measurements, monitor for invasive species, conduct angler surveys, and provide other valuable information about the condition of the lakes. NYSFOLA also publishes newsletters throughout the year (NYSFOLA 2019).

There are several lake associations in Onondaga County. These associations educate residents and government agencies about threats to the lakes and watersheds and work on protecting and improving water quality of the lakes. The lake associations were invited to participating in the planning process and to attend meetings.

Syracuse University Environmental Finance Center

The Environmental Finance Centers (EFCs) deliver targeted technical assistance to, and partner with states, tribes, local governments, and the private sector in providing innovative solutions to help manage the costs of environmental financing and program management. The focus of the Syracuse University Environmental Finance Center is “Advancing efficient and effective governance and problem-solving through leadership development and community participation in decision-making processes, with a focus on sustainable materials management; water, wastewater, and stormwater; natural resource management, and planning.” Staff from EFC was

Onondaga County Association of Town Supervisors

The County’s Association of Town Supervisors was invited to sit on the Steering Committee for the plan update. The association was represented on the Steering Committee.

Onondaga County Mayors Association

The County’s Mayors Association was invited to sit on the Steering Committee for the plan update. The association was represented on the Steering Committee.

CNY Stormwater Coalition

In 2011, Onondaga and Oswego Counties signed a Memorandum of Agreement to form the Central New York (CNY) Stormwater Coalition. Members of the coalition work to meet regulatory stormwater management requirements while improving water quality throughout central New York State (CNY Stormwater Coalition 2019). Since inception, the coalition has undertaken or completed the following:

- Establish low-cost alternatives and secure grant funding to help regulated communities meet common compliance requirements.
- Improve consistency of regional mapping and inspection data across county lines.
- Provide uniform response to NYS DEC regarding changing and new permit requirements



- Ensure that Coalition members are aware of upcoming program changes and new requirements in order to prepare and respond accordingly.
- Sponsor public education and municipal training programs (CNY Stormwater Coalition 2019)

The following Onondaga County municipalities are part of the CNY Stormwater Coalition: Village of Baldwinsville, Town and Village of Camillus, Town of Cicero, Town of Clay, Town of DeWitt, Village of East Syracuse, Village of Fayetteville, Town of Geddes, Town of LaFayette, Village of Liverpool, Town of Lysander, Town and Village of Manlius, Town and Village of Marcellus, Village of Minoa, Village of North Syracuse, Town of Onondaga, Town of Pompey, Town of Salina, Village Solvay, City of Syracuse, Town of Van Buren, and Onondaga County (CNY Stormwater Coalition 2019).

6.4.4 Administrative and Technical Capabilities - State and Federal

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

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

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

New York State Department of Environmental Conservation (NYSDEC) – Region 7 – Central New York

Within the NYSDEC – Region 7 is located in central New York and includes the Salmon River, Onondaga Lake, the shoreline of Lake Ontario, several Finger Lakes, and over 110 State Forests. The main DEC office is located in Syracuse with sub-offices in Cortland (Cortland County), Sherburne (Chenango County) and Kirkwood (Broome County). DEC staff have two main areas of responsibility: natural resource management and environmental quality protection. As part of natural resource management staff oversee state fish and wildlife resources, as well as state forests and wildlife (NYSDEC Region 7 2019).

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 (<http://www.dec.ny.gov/about/61432.html>) cooperates with federal, state, regional, and local partners to protect lives and property from floods, coastal erosion and dam failures through floodplain management and both structural and non-structural means; and, provides support for information technology needs in the Division. The Bureau consists of the following Sections:



- **Coastal Management:** Works to reduce coastal erosion and storm damage to protect lives, natural resources, and properties through structural and non-structural means.
- **Dam Safety:** Is responsible for reviewing repairs and modifications to dams and assuring that dam owners operate and maintain dams in a safe condition through inspections, technical reviews, enforcement, and emergency planning.
- **Flood Control Projects:** Is responsible for reducing flood risk to life and property through construction, operation and maintenance of flood control facilities.
- **Floodplain Management:** Is responsible for reducing flood risk to life and property through proper management of activities including, development in flood hazard areas and review and development of revised flood maps (NYSDEC Bureau of Flood Protection and Dam Safety 2019).

Northeast Regional Climate Center

The Northeast Regional Climate Center (NRCC) partnered with the New York State Energy Research and Development Authority (NYSERDA) to compare various methods of downscaling global climate model (GCM) output and create extreme precipitation projections for New York State. These projections can be incorporated into climate change adaptation planning. Projections for Onondaga County are discussed in Section 5 (Risk Assessment). To help New York State communities plan for effects of climate change, new graphics are now available showing the increased likelihood of heavy precipitation events (NRCC 2019). The projections are provided at: <http://www.nrcc.cornell.edu/>

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

Technical Bulletins for the 2010 Codes of New York State

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

Forms and Publications

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

6.4.5 Fiscal Capabilities – County and Local

Municipal Fiscal Capabilities

Onondaga County and individual municipalities are (legally, not necessarily practically) able to fund mitigation projects through existing local budgets, local appropriations (including referendums and bonding), and through a variety of federal and state loan and grant programs. Many municipalities noted throughout the planning process that they are faced with increasing fiscal constraints, including decreasing revenues, budget constraints and tax



caps. In an effort to overcome these fiscal challenges, municipalities have continued to leverage the sharing of resources and combining available funding with grants and other sources and note that plans and inter-municipal cooperation are beneficial in obtaining grants.

6.4.6 Fiscal Capabilities – State and Federal

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

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

Federal Hazard Mitigation Funding Opportunities

Federal mitigation grant funding is available to all communities with a current hazard mitigation plan (this plan); however most of these grants require a “local share” in the range of 10-25% of the total grant amount. Details about this program and a further description of these opportunities can be found at:

<https://www.fema.gov/hazard-mitigation-assistance>. The FEMA mitigation grant programs are described below.

Hazard Mitigation Grant Program (HMGP)

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

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

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

Flood Mitigation Assistance (FMA) Program

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



before a project can be approved. The FMA funds are distributed from FEMA to the state. The NYS DHSES serves as the grantee and program administrator for the FMA program.

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

Pre-Disaster Mitigation (PDM) Program

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

In some cases, whereby the local Hazard Mitigation Plan is under development, but not formally approved by FEMA, the jurisdiction may request a Letter of Extraordinary Circumstance in enable consideration of the grant application. According to the FEMA Hazard Mitigation Assistance Guidance (2015), for Hazard Mitigation Grant Program (HMGP) project subawards, the FEMA Regional Administrator may grant an exception to the local mitigation plan requirement in extraordinary circumstances when justification is provided. If this exception is granted, a local mitigation plan must be approved by FEMA within 12 months of the award of the project subaward to that community. For Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) project subawards, the Region may grant an exception to the local mitigation plan requirement in extraordinary circumstances.

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

Extraordinary Circumstances

For PDM and FMA project subawards, the (FEMA) Region may apply extraordinary circumstances when justification is provided and with concurrence from FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) prior to granting an exception. If this exception is granted, a local mitigation plan must be approved by FEMA within 12 months of the award of the project subaward to that community.

For HMGP, PDM, and FMA, extraordinary circumstances exist when a determination is made by the Applicant and FEMA that the proposed project is consistent with the priorities and strategies identified in the State (Standard or Enhanced) Mitigation Plan and that the jurisdiction meets at least one of the criteria below. If the jurisdiction does not meet at least one of these criteria, the Region must coordinate with FEMA Headquarters (Risk Reduction and Risk Analysis Divisions) for HMGP; however, for PDM and FMA the Region must coordinate and seek concurrence prior to granting an exception:

- The jurisdiction meets the small impoverished community criteria (see Part VIII, B.2).
- The jurisdiction has been determined to have had insufficient capacity due to lack of available funding, staffing, or other necessary expertise to satisfy the mitigation planning requirement prior to the current disaster or application deadline.
- The jurisdiction has been determined to have been at low risk from hazards because of low frequency of occurrence or minimal damage from previous occurrences as a result of sparse development.
- The jurisdiction experienced significant disruption from a declared disaster or another event that impacts its ability to complete the mitigation planning process prior to award or final approval of a project award.
- The jurisdiction does not have a mitigation plan for reasons beyond the control of the State, federally-recognized tribe, or local community, such as Disaster Relief Fund restrictions that delay FEMA from granting a subaward prior to the expiration of the local or Tribal Mitigation Plan.



For HMGP, PDM, and FMA, the Applicant must provide written justification that identifies the specific criteria or circumstance listed above, explains why there is no longer an impediment to satisfying the mitigation planning requirement, and identifies the specific actions or circumstances that eliminated the deficiency.

When an HMGP project funding is awarded under extraordinary circumstances, the Recipient shall acknowledge in writing to the Regional Administrator that a plan will be completed within 12 months of the subaward. The Recipient must provide a work plan for completing the local or Tribal Mitigation Plan, including milestones and a timetable, to ensure that the jurisdiction will complete the plan in the required time. This requirement shall be incorporated into the award (both the planning and project subaward agreements, if a planning subaward is also awarded).

Federal and State Disaster and Recovery Assistance Programs

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

Individual Assistance (IA)

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

Public Assistance (PA)

Public Assistance (PA) provides cost reimbursement aid to local governments (state, county, local, municipal authorities and school districts) and certain non-profit agencies that were involved in disaster response and recovery programs or that suffered loss or damage to facilities or property used to deliver government-like services. This program is largely funded by FEMA with both local and state matching contributions required. For additional information regarding PA, please refer to: <https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit>

Small-Business Administration (SBA) Loans

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

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



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

Social Services Block Grant Program (SSBG)

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

Department of Homeland Security

The Homeland Security Grant Program (HSGP) plays an important role in the implementation of the National Preparedness System by supporting the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient nation. The FY 2017 HSGP supports efforts to build and sustain core capabilities across the Prevention, Protection, Mitigation, Response, and Recovery mission areas. This includes two priorities: building and sustaining law enforcement terrorism prevention capabilities and maturation and enhancement of state and major urban area fusion centers (HSGP 2017). HSGP is comprised of three interconnected grant programs including the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), and the Operation Stonegarden (OPSG). Together, these grant programs fund a range of preparedness activities, including planning, organization, equipment purchase, training, exercises, and management and administration. For additional information regarding HSGP, please refer to: <https://www.fema.gov/homeland-security-grant-program>

Community Development Block Grants (CDBG)

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

U.S. Economic Development Administration

The U.S. Economic Development Administration (USEDA) is an agency of the U.S. Department of Commerce that supports regional economic development in communities around the country. It provides funding to support comprehensive planning and makes strategic investments that foster employment creation and attract private investment in economically distressed areas of the United States. Through its Public Works Program USEDAs invests in key public infrastructure, such as in traditional public works projects, including water and sewer systems improvements, expansion of port and harbor facilities, brownfields, multitenant manufacturing and other facilities, business and industrial parks, business incubator facilities, redevelopment technology-based facilities, telecommunications and development facilities. Through its Economic Adjustment Program, USEDAs



administers its Revolving Loan Fund (RLF) Program, which supplies small businesses and entrepreneurs with the gap financing needed to start or expand their business, in areas that have experienced or are under threat of serious structural damage to the underlying economic base. Please refer to the USEDPA website (<https://www.eda.gov/>) for additional information.

Federal Highway Administration - Emergency Relief

The Federal Highway Administration Emergency Relief is a grant program that may be used for repair or reconstruction of Federal-aid highways and roads on Federal lands which have suffered serious damage as a result of a disaster. NYS is serving as the liaison between local municipalities and FHWA. \$30 Million in funding was released in October-November of 2012 for emergency repair work conducted in first 180 days following Hurricane Sandy. Another \$220 Million in additional funding became available February 2013. For information regarding the FHWA Emergency Relief Program, please refer to: <https://www.fhwa.dot.gov/programadmin/erelief.cfm>

Federal Transit Administration - Emergency Relief

The Federal Transit Authority Emergency Relief is a grant program that funds capital projects to protect, repair, reconstruct, or replace equipment and facilities of public transportation systems. Administered by the Federal Transit Authority at the U.S. Department of Transportation and directly allocated to MTA and Port Authority. This transportation-specific fund was created as an alternative to FEMA PA. Currently, a total of \$5.2 Billion has been allocated to NYS-related entities. For information regarding the FTA Emergency Relief Program, please refer to: <https://www.transit.dot.gov/funding/grant-programs/emergency-relief-program/emergency-relief-program>

Empire State Development

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

State Hazard Mitigation Funding Opportunities

New York State Department of Transportation (NYSDOT)

Scour Critical/Floodprone Bridge Program

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

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

All of the bridges included in this program were built to the codes and standards of their time and remain safe and open for everyday traffic. However, due to a variety of natural severe weather events and the increasing frequency of major storms and floods, they are vulnerable to scour, and flooding caused by the intensity and



velocity of water from extreme natural events. Bridge scour erodes and carries away foundation materials such as sand and rocks from around and beneath bridge abutments, piers, foundations and embankments (NYSDOT 2014).

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

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

Emergency Watershed Protection Program

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

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/>

EWP - Recovery

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

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

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

EWP - Floodplain Easement (FPE)

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

- Lands that have been damaged by flooding at least once within the previous calendar year or have been subject to flood damage at least twice within the previous 10 years



- Other lands within the floodplain are eligible, provided the lands would contribute to the restoration of the flood storage and flow, provide for control of erosion, or that would improve the practical management of the floodplain easement
- Lands that would be inundated or adversely impacted as a result of a dam breach

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

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

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

The Climate Smart Communities (CSC) program is jointly sponsored by the following six New York State agencies: Department of Environmental Conservation; Energy Research and Development Authority; Public Service Commission; Department of State; Department of Transportation; and the Department of Health. The program encourages municipalities to minimize the risks of climate change and reduce long-term costs through actions which reduce greenhouse gas (GHG) emissions and adapt to a changing climate. The program offers free technical support on energy and climate and guidance tailored to New York State communities. As of April 2016, more than 170 communities, representing 6.6 million New Yorkers in every region of the state, have committed to acting on climate through New York State's Climate Smart Communities program.

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

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

Climate Smart Communities Pledge

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

- Pledge to be a Climate Smart Community.
- Set goals, inventory emissions, plan for climate action.
- Decrease community energy use.
- Increase community use of renewable energy.
- Realize benefits of recycling and other climate-smart solid waste management practices.
- Reduce greenhouse gas emissions through use of climate-smart land-use tools.
- Enhance community resilience and prepare for the effects of climate change.



- Support development of a green innovation economy.
- Inform and inspire the public.
- Commit to an evolving process of climate action.

At the time of this plan update, Onondaga County, City of Syracuse, Town of DeWitt, Town of Elbridge, Town of Fabius, Town of Skaneateles, Village of Baldwinsville, Village of Fayetteville, Village of Jordan, Village of Minoa, and Village of Skaneateles have adopted the Climate Smart Communities Pledge. However, none have achieved certification.

Climate Smart Communities Certification (CSC) Program

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

Climate Smart Communities Grant Program

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

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

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

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

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

In scoring grant applications, increasing points are awarded to communities who have already taken the CSC pledge and to those that have achieved certification status. All grant recipients must take the Climate Smart Communities Pledge within the term of their grant contract. For climate mitigation projects, grant recipients



must provide a report of estimates of emissions reduction. Certification actions must adhere to the requirements and standards described in the Climate Smart Communities Certification Manual <http://www.dec.ny.gov/energy/96511.html>. For implementation projects involving property (construction, improvements, restoration, rehabilitation) – if the property is not owned by the grant recipient, they must obtain a climate change mitigation easement.

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

New York State Department of Environmental Conservation (NYSDEC)

Water Quality Improvement Project (WQIP) Program

The Water Quality Improvement Project (WQIP) program is a competitive, reimbursement grant program that funds projects that directly address documented water quality impairments. The competitive, statewide grant program is open to local governments and not-for-profit corporations. Grant recipients may receive up to 75 percent of the project costs for high priority wastewater treatment improvement, non-agricultural nonpoint source abatement and control, land acquisition for source water protection, aquatic habitat restoration, and municipal separate storm sewer system projects; up to 50% for salt storage projects; and up to 40% for general wastewater infrastructure improvement projects. Eligible activities include:

- Wastewater treatment improvement
- Non-agricultural nonpoint source abatement and control
- Land acquisition for source water protection
- Salt storage
- Aquatic habitat restoration
- Municipal separate storm sewer systems (MS4)

Details regarding this program are available here - <https://www.dec.ny.gov/pubs/4774.html>

New York State DEC/EFC Wastewater Infrastructure Engineering Planning Grant (EPG)

The New York State Department of Environmental Conservation (DEC), in conjunction with the New York State Environmental Facilities Corporation (EFC), will offer grants to municipalities to help pay for the initial planning of eligible Clean Water State Revolving Fund (CWSRF) water quality projects.

The Wastewater Infrastructure Engineering Planning Grant will assist municipalities with the engineering and planning costs of CWSRF-eligible water quality projects. Municipalities with a Median Household Income (MHI) of \$65,000 or less in REDC regions of Capital District, Southern Tier, North Country, Mohawk Valley, Central NY, Finger Lakes, or Western NY OR with a Median Household Income of \$85,000 or less in REDC regions of Long Island, New York City or Mid-Hudson are eligible to apply. Grants with a 20 percent required local match will be provided to finance activities including engineering and/or consultant fees for engineering and planning services for the production of an engineering report.



The goal of the EPG program is to advance water quality projects to construction, so successful applicants can use the engineering report funded by the grant to seek financing through the CWSRF program, WQIP program, or other funding entities to further pursue the identified solution. Funding priorities go to projects that are:

- Required by an executed Order on Consent; or
- Required by a draft or final State Pollutant Discharge Elimination System (SPDES) permit; or
- Upgrading or replacing an existing wastewater system; or
- Constructing a wastewater treatment and/or collection system for an area with failing onsite septic systems; or
- Identified in a Total Maximum Daily Load (TMDL) Implementation Plan

Details regarding this program can be found here - <https://www.dec.ny.gov/pubs/81196.html>

New York State Department of Transportations

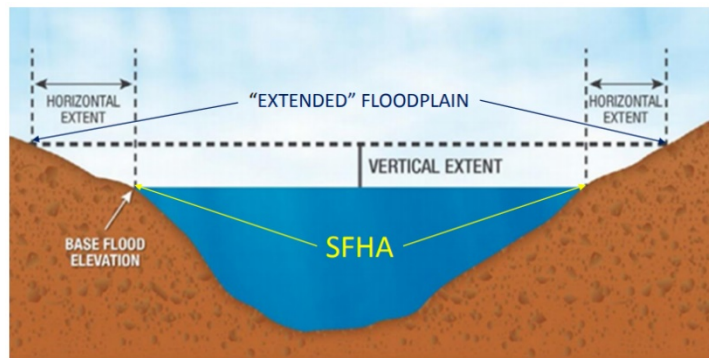
BRIDGE NY

The BRIDGE NY program, administered by the New York State Department of Transportation (NYSDOT), is open to all municipal owners of bridges and culverts. Projects will be awarded through a competitive process and will support all phases of project development. Projects selected for funding under the BRIDGE NY Initiative will be evaluated based on the resiliency of the structure, including such factors as hydraulic vulnerability and structural resiliency; the significance and importance of the bridge including traffic volumes, detour considerations, number and types of businesses served and impacts on commerce; and the current bridge and culvert structural conditions. Information regarding the program can be found here –

<https://www.dot.ny.gov/BRIDGENY>

Community Risk and Resiliency Act (CRRA)

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



- Official Sea-level Rise Projections - CRRA requires the Department of Environmental Conservation (DEC) to adopt science-based sea-level rise projections into regulation.
- Consideration of Sea-Level Rise, Storm Surge and Flooding - CRRA requires applicants for permits or funding in a number of specified programs to demonstrate that future physical climate risk due to sea-level rise, storm surge and flooding have been considered, and that DEC consider incorporating these factors into certain facility-siting regulations.
- Smart Growth Public Infrastructure Policy Act Criteria - CRRA adds mitigation of risk due to sea-level rise, storm surge and flooding to the list of smart-growth criteria to be considered by state public-infrastructure agencies.



- Guidance on Natural Resiliency Measures - CRRA requires DEC, in consultation with the Department of State (DOS), to develop guidance on the use of natural resources and natural processes to enhance community resiliency.
- Model Local Laws Concerning Climate Risk - CRRA requires DOS, in cooperation with DEC, to develop model local laws that include consideration of future risk due to sea-level rise, storm surge and/or flooding. These model local laws must be based on available data predicting the likelihood of extreme-weather events, including hazard-risk analysis (NYSDEC 2018).

CRRA requires NYSDEC, in consultation with DOS, to prepare guidance on implementation of the statute. To meet its obligation to develop guidance for the implementation of CRRA, DEC is proposing a new document, State Flood Risk Management Guidance (SFRMG). The SFRMG is intended to inform state agencies as they develop program-specific guidance to require that applicants demonstrate consideration of sea-level rise, storm surge and flooding, as permitted by program-authorizing statutes and operating regulations. The SFRMG incorporates possible future conditions, including the greater risks of coastal flooding presented by sea-level rise and enhanced storm surge, and of inland flooding expected to result from increasingly frequent extreme-precipitation events (NYSDEC 2018).

For additional details on the CRRA, please refer to: <https://www.dec.ny.gov/energy/102559.html>

6.4.7 Potential Mitigation Funding Sources

While it is important to recognize the mitigation strategies for each jurisdiction to help achieve the mitigation goals and objectives of the HMP, it is also important to provide sources for funding to implement these strategies. The table below provides a list of programs, descriptions, and links for those seeking funding sources. This table is not intended to be a comprehensive list, but rather a starting point to help identify potential sources of funding for the identified mitigation strategies.



Table 6-2. Mitigation Funding Sources

Program	Description	Lead Agency	Website
Federal			
Hazard Mitigation Assistance (HMA)	Grants to provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages – includes FMA, HMGP, PDM	FEMA	https://www.fema.gov/hazard-mitigation-assistance
Flood Mitigation Assistance (FMA)	Program Grants to States and communities for pre-disaster mitigation planning and projects to help reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program	FEMA	https://www.fema.gov/flood-mitigation-assistance-grant-program
Hazard Mitigation Grant Program (HMGP)	Grants to States and communities for planning and projects providing long-term hazard mitigation measures following a major disaster declaration	FEMA	https://www.fema.gov/hazard-mitigation-grant-program
Pre-Disaster Mitigation (PDM) Competitive Grant Program	Grants to States and communities for planning and projects that provide long-term hazard pre-disaster mitigation measures	FEMA	https://www.fema.gov/pre-disaster-mitigation-grant-program
Public Assistance: Hazard Mitigation Funding Under Section 406	Hazard mitigation discretionary funding available under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act following a Presidentially declared disaster	FEMA	https://www.fema.gov/news-release/2017/05/03/4309/fema-hazard-mitigation-grants-404-and-406
Assistance to Firefighters Grant Program	The primary goal of the Assistance to Firefighters Grants (AFG) is to enhance the safety of the public and firefighters with respect to fire-related hazards by providing direct financial assistance to eligible fire departments, nonaffiliated Emergency Medical Services organizations, and State Fire Training Academies. This funding is for critically needed resources to equip and train emergency personnel to recognized standards, enhance operations efficiencies, foster interoperability, and support community resilience.	FEMA	https://www.fema.gov/welcome-assistance-firefighters-grant-program
Disaster Housing Program	Emergency assistance for housing, including minor repair of home to establish livable conditions, mortgage and rental assistance	HUD	https://www.hud.gov/program_offices/public_indian_housing/publications/dhap
HOME Investment Partnerships Program	Grants to local and state government and consortia for permanent and transitional housing, (including financial support for property acquisition and rehabilitation for low income persons)	HUD	https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/



Program	Description	Lead Agency	Website
HUD Disaster Recovery Assistance	Grants to fund gaps in available recovery assistance after disasters (including mitigation)	HUD	https://www.hud.gov/info/disasterresources
Section 108 Loan Guarantee	Enables states and local governments participating in the Community Development Block Grant (CDBG) program to obtain federally guaranteed loans for disaster-distressed areas	HUD	https://www.hudexchange.info/programs/section-108/
Smart Growth Implementation Assistance (SGIA) program	The SGIA program focuses on complex or cutting-edge issues, such as stormwater management, code revision, transit-oriented development, affordable housing, infill development, corridor planning, green building, and climate change. Applicants can submit proposals under 4 categories: community resilience to disasters, job creation, the role of manufactured homes in sustainable neighborhood design or medical and social service facilities siting.	EPA	https://www.epa.gov/smartgrowth
Partners for Fish and Wildlife	Financial and technical assistance to private landowners interested in pursuing restoration projects affecting wetlands and riparian habitats	U.S. Fish and Wildlife Service	https://www.fws.gov/partners/
FHWA Emergency Relief Program	Fund for the repair or reconstruction of Federal-aid highways that have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause	U.S. Department of Transportation (DOT)	https://www.fhwa.dot.gov/programadmin/erelief.cfm
Transportation Investment Generating Economic Recovery (TIGER)	Investing in critical road, rail, transit and port projects across the nation	U.S. DOT	https://www.transportation.gov/tags/tiger-grants
Community Facilities Direct Loan & Grant Program	This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial or business undertakings.	USDA	https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program
Emergency Loan Program	USDA's Farm Service Agency (FSA) provides emergency loans to help producers recover from production and physical losses due to drought, flooding, other natural disasters or quarantine	USDA	https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/emergency-farm-loans/index
Emergency Watershed Protection (EWP) program	Provide assistance to relieve imminent hazards to life and property caused by floods, fires, drought, windstorms, and other natural occurrences	NRCS	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/
Financial Assistance	Financial assistance to help plan and implement conservation practices that address natural resource concerns or opportunities to help save energy, improve soil, water, plant, air, animal and related resources on agricultural lands and non-industrial private forest land	NRCS	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/



SECTION 6: MITIGATION STRATEGIES

Program	Description	Lead Agency	Website
Emergency Management Performance Grants (EMPG) Program	Assist local, tribal, territorial, and state governments in enhancing and sustaining all-hazards emergency management capabilities	U.S. DHS	https://www.fema.gov/emergency-management-performance-grant-program
Land & Water Conservation Fund	Matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities (as well as funding for shared federal land acquisition and conservation strategies)	National Park Service	https://www.nps.gov/subjects/lwcf/index.htm
State			
Local Government Records Management Improvement Fund (LGRMIF) Disaster Recovery Grants	Grants for disaster recovery projects related to damage caused by a sudden, unexpected event involving fire, water, man-made or natural phenomena where a timely response is necessary to prevent the irretrievable loss of vital or archival records, or to ensure reasonable, timely access to vital records	New York State Archives / New York State Education Department	http://www.archives.nysed.gov/grants/grants_lgrmif.shtml
The New York State Emergency Services Revolving Loan	Repair of firefighting apparatus, ambulances, or rescue vehicles; Renovation, rehabilitation, or repair of facilities that house firefighting equipment, ambulances, rescue vehicles, and related equipment	NYS DHSES	http://www.dhSES.ny.gov/ofpc/services/loan/
Environmental Protection Fund (EPF)	Matching grants for the acquisition, planning, development, and improvement of parks, historic properties	New York State Parks, Recreation & Historic Preservation (NYSOPRHP)	https://www.dec.ny.gov/about/92815.html
Recreational Trails (RTP)	Program Matching grants for the acquisition, development, rehabilitation and maintenance of trails and trail-related projects	NYSOPRHP	https://parks.ny.gov/grants/recreational-trails/default.aspx
Environmental Protection & Improvement Grants	Competitive grants for environmental protection and improvement; available for municipalities, community organizations, not-for-profit organizations and others	New York State Department of Environmental Conservation	https://www.dec.ny.gov/about/92815.html
Volunteer Fire Assistance Grants	The grant is a 50/50 matching funds program. Its purpose is to make funds available to rural fire companies for the purchase of wildland firefighting equipment such as portable backpack pumps, Nomex	NYSDEC	https://www.dec.ny.gov/regulations/2364.html



SECTION 6: MITIGATION STRATEGIES

Program	Description	Lead Agency	Website
	protective clothing, hand tools, hard hats, hose, portable radios and dry hydrants.		
Clean Water Act Section 604(b) Water Quality Planning Grants	Provide funding to implement regional comprehensive water quality management planning activities as described in Section 604(b) of the federal Clean Water Act. 604(b) funds are to be used for water quality management planning activities, including tasks to determine the nature, extent and causes of point and nonpoint source water pollution problems, and to develop plans to resolve these problems.	NYSDEC	https://www.dec.ny.gov/lands/53122.html
Water Quality Improvement Project (WQIP) Program	The Water Quality Improvement Project (WQIP) program is a competitive, reimbursement grant program that funds projects that directly address documented water quality impairments. Applications are typically available each spring through the Consolidated Funding Application.	NYSDEC	https://www.dec.ny.gov/pubs/4774.html
New York State DEC/EFC Wastewater Infrastructure Engineering Planning Grant (EPG)	The New York State Department of Environmental Conservation (DEC), in conjunction with the New York State Environmental Facilities Corporation (EFC), will offer grants to municipalities to help pay for the initial planning of eligible Clean Water State Revolving Fund (CWSRF) water quality projects. The ultimate goal of the EPG program is to advance water quality projects to construction, so successful applicants can use the engineering report funded by the grant to seek financing through the CWSRF program, Water Quality Improvement Project program, or other funding entities to further pursue the identified solution.	NYSDEC	https://www.dec.ny.gov/pubs/81196.html
Climate Smart Communities Grant Program	The CSC Grant program was established in 2016 to provide 50/50 matching grants to cities, towns, villages, and counties (or boroughs of New York City) of the State of New York for eligible climate adaptation and mitigation projects.	NYSDEC	https://www.dec.ny.gov/energy/109181.html
BRIDGE NY	The State is making funding available for local governments to rehabilitate and replace bridges and culverts statewide.	NYS DOT	https://www.dot.ny.gov/BRIDGENY



6.5 MITIGATION STRATEGY DEVELOPMENT AND UPDATE

6.5.1 Update of Municipal Mitigation Strategies

To evaluate progress on local mitigation actions, each jurisdiction was provided with a Mitigation Action Plan Review Worksheet, pre-populated with those actions identified for their jurisdiction in the prior (2013) plan. For each action, municipalities were asked to indicate the status of each action (“No Progress/Unknown,” “In Progress/Not Yet Complete,” “Continuous,” “Completed,” “Discontinued”) and provide review comments on each. Municipalities were requested to quantify the extent of progress and provide reasons for the level of progress or why actions were discontinued. Each jurisdictional annex provides a table identifying their prior mitigation strategy, the status of those actions and initiatives, and their disposition within their updated strategy.

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

At the Kick-Off and during subsequent local-level planning meetings, all participating municipalities were further surveyed to identify mitigation activities completed, ongoing and potential/proposed. As new additional potential mitigation actions, projects or initiatives became evident during the plan update process, including as part of the risk assessment update and as identified through the public and stakeholder outreach process (see Section 3 – Planning Process), communities were made aware of these either through direct communication (local meetings, email, phone) or via their draft municipal annexes.

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

Beginning in June 2018, members of the Steering Committee and contract consultants worked directly with each jurisdiction (phone, email, local support meetings) to assist with the development and update of their annex and include mitigation strategies, focusing on identifying well-defined, implementable projects with a careful consideration of benefits (risk reduction, losses avoided), costs, and possible funding sources (including mitigation grant programs).

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

- Local Plans and Regulations – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.



- Natural Systems Protection – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as the National Flood Insurance Program and Community Rating System, StormReady (NOAA) and Firewise (NFPA) Communities.

A mitigation strategy workshop was conducted by NYSDHSES and FEMA Region II representatives on January 14, 2019, for all participating jurisdictions to support the development of focused problem statements based on the impacts of natural hazards in the county and their communities. These problem statements are intended to provide a detailed description of the problem area, including its impacts to the municipality/jurisdiction; past damages; loss of service; etc. An effort was made to include the street address of the property/project location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements form a bridge between the hazard risk assessment which quantifies impacts to each community with the development of actionable mitigation strategies.

A strong effort has been made to better focus local mitigation strategies to clearly defined, readily implementable projects and initiatives that meet the definition or characteristics of mitigation. Broadly defined mitigation objectives have been eliminated from the updated strategy unless accompanied by discrete actions, projects or initiatives.

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

At least two mitigation projects per jurisdiction have been documented with an Action Worksheet, as per the New York State Hazard Mitigation Planning Standards Guide.

As discussed within the hazard profiles in Section 5.4 (Risk Assessment), 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 Mitigation Best Practices

Catalogs of hazard mitigation best practices were developed that present a broad range of alternatives to be considered for use in Onondaga County, in compliance with 44 CFR Section 201.6(c)(3)(ii). One catalog was developed for each hazard of concern evaluated in this plan. The catalogs present alternatives that are categorized in two ways:



- By who would have responsibility for implementation:
 - Individuals – personal scale
 - Businesses – corporate scale
 - Government – government scale
- By what the alternatives would do:
 - Manipulate the hazard
 - Reduce exposure to the hazard
 - Reduce vulnerability to the hazard
 - Build local capacity to respond to or be prepared for the hazard

The alternatives presented include actions that will mitigate current risk from hazards and actions that will help reduce risk from changes in the impacts of these hazards resulting from climate change. Hazard mitigation actions recommended in this plan were selected from among the alternatives presented in the catalogs. The catalogs provide a baseline of mitigation alternatives that are backed by a planning process, are consistent with the established goals and objectives, and are within the capabilities of the planning partners to implement. Some of these actions may not be feasible based on the selection criteria identified for this plan. The purpose of the catalogs was to provide a list of what could be considered to reduce risk from natural hazards within the planning area. Actions in the catalog that are not included for the partnership’s action plan were not selected for one or more of the following reasons:

- The action is not feasible
- The action is already being implemented
- There is an apparently more cost-effective alternative
- The action does not have public or political support.

The catalog for each hazard are presented in Appendix H.

6.5.3 Update of County Mitigation Strategy

Strengths, Weaknesses, Obstacles and Opportunities (SWOO)

The 2013 HMP SWOO was reviewed and updated. The updates were presented to the Steering Committee during the August 8, 2018 meeting. A SWOO session was held to confirm the county’s strengths, weaknesses, obstacles, and opportunities identified for each hazard of concern. The findings were used to update the mitigation catalog which assisted the jurisdictions in developing their mitigation strategies.

The update of the county-level mitigation strategies included a review of progress on the actions/initiatives identified in the 2013 HMP, using a process similar to that used to review municipal mitigation strategy progress. The County, through their various department representatives, was provided with a Mitigation Action Plan Review Worksheet identifying all of the County-level actions/initiatives from the 2013 plan. The County reviewed each action and provided progress. For each action, relevant County representatives were asked to indicate the status of each action (“No Progress/Unknown,” “In Progress/Not Yet Complete,” “Continuous,” “Completed,” or “Discontinued”), and provide review comments on each.

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

County’s updated mitigation strategy. Actions considered ongoing capabilities were marked as “Discontinued” and included in the plan as ongoing capabilities.



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

- Review of the results and findings of the updated risk assessment;
- Review of available regional and county plans reports and studies;
- Direct input from county departments and other county and regional agencies, including:
 - Onondaga County Department of Emergency Management
 - Onondaga County Department of Transportation
 - Syracuse-Onondaga County Planning Agency
- Input received through the public and stakeholder outreach process.
- Outcome of facilitated SWOO (Strengths, Weaknesses, Obstacles and Opportunities) session which are documented in the updated Mitigation Catalog located in Appendix H (Mitigation Catalog).

As discussed within the hazard profiles in Section 5.4 (Risk Assessment), the long-term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards including drought, earthquake, flood, geological, harmful algal bloom, invasive species, severe storm, and severe winter storm. The county has included mitigation actions and initiatives, including continuing and long-term planning and emergency management support, to address these long-term implications and potential impacts.

Various county departments and agencies have included mitigation actions to address vulnerable critical facilities. These actions have been proposed in consideration of protection against 500-year events, or worst-case scenarios.

It is recognized, however, that in the case of projects being funded through Federal mitigation programs, the level of protection may be influenced by cost-effectiveness as determined through a formal benefit-cost analysis. In the case of “self-funded” projects, local government authority may affect the ability to implement. Further, it must be recognized that the County has limited authority over privately-owned critical facility owners with regard to mitigation at any level of protection.

6.5.4 Mitigation Strategy Evaluation and Prioritization

Section 201.c.3.iii of 44 CFR requires how the identified mitigation strategies will be prioritized, implemented, and administered by the local jurisdictions. For this plan update, each mitigation strategy was prioritized using a modified STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) mitigation action evaluation methodology based on a set of evaluation criteria suited to the purposes of hazard mitigation strategy evaluation. This method provides a systematic approach that considers the opportunities and constraints of implementing a particular mitigation action.

The Steering Committee applied an action evaluation and prioritization methodology which includes an expanded set of fourteen (14) criteria to include the consideration of cost-effectiveness, availability of funding, anticipated timeline, and if the action addresses multiple hazards. The 14 evaluation/prioritization criteria used in the 2019 update process are:

1. Life Safety – How effective will the action be at protecting lives and preventing injuries?
2. Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
3. Cost-Effectiveness – Are the costs to implement the project or initiative commensurate with the benefits achieved?
4. Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.



5. Political – Is there overall public support for the mitigation action? Is there the political will to support it?
6. Legal – Does the municipality have the authority to implement the action?
7. Fiscal - Can the project be funded under existing program budgets (i.e., is this initiative currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?
8. Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?
9. Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
10. Administrative – Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?
11. Multi-hazard – Does the action reduce the risk to multiple hazards?
12. Timeline - Can the action be completed in less than 5 years (within our planning horizon)?
13. Local Champion – Is there a strong advocate for the action or project among the jurisdiction’s staff, governing body, or committees that will support the action’s implementation?
14. Other Local Objectives – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

Participating jurisdictions were asked to use these criteria to assist them in evaluating and prioritizing mitigation actions identified in the 2019 update. Specifically, for each mitigation action, the jurisdictions were asked to assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria, defined as follows:

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

Further, jurisdictions were asked to provide a brief summary of the rationale behind the numeric rankings assigned, as applicable. The numerical results were totaled and then used by each jurisdiction to help prioritize the action or strategy as *low*, *medium*, or *high*. Actions that had a numerical value between 1 and 5 were categorized as *low*; actions with numerical values between 6 and 9 were categorized as *medium*; and actions with numerical values between 10 and 14 were categorized as *high*. While this provided a consistent, systematic methodology to support the evaluation and prioritization of mitigation actions, jurisdictions may have additional considerations that could influence their overall prioritization of mitigation actions.

It is noted that jurisdictions may be carrying forward mitigation actions and initiatives from prior mitigation strategies that were prioritized using a different, but not inherently contrary, approach. Mitigation actions in the prior (2013) Onondaga County HMP were “qualitatively evaluated against the mitigation goals and objectives and other evaluation criteria. They were then prioritized into three categories: high, medium, and low.” At their discretion, jurisdictions carrying forward prior initiatives were encouraged to re-evaluate their priority, particularly if conditions that would affect the prioritization criteria had changed.

For the plan update there has been an effort to develop more clearly defined and action-oriented mitigation strategies. These local strategies include projects and initiatives that are seen by the community as the most effective approaches to advance their local mitigation goals and objectives within their capabilities. In addition, each municipality was asked to develop problem statements. With active support from NYS DHSES planning staff, municipalities were able to develop action-oriented and achievable mitigation strategies.



As such, many of the initiatives in the updated mitigation strategy were ranked as *high* or *medium* priority, as reflective of the community's clear intent to implement them, available resources notwithstanding. In general, initiatives that would have had *low* priority rankings were appropriately screened out during the local action evaluation process.

6.5.5 Benefit/Cost Review

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

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

Costs presented include the total project estimation. This can include administrative, construction (engineering, design, and permitting), and maintenance costs.

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

When possible, jurisdictions were asked to identify the actual or estimated dollar costs and associated benefits. Often numerical costs and/or benefits were not identified and may be impossible to quantify. In this case, jurisdictions were asked to evaluate project cost-effectiveness using *high*, *medium*, and *low* ratings. Where estimates of costs and benefits were available, the ratings were defined as the following:

Low \leq \$10,000

Medium = \$10,000 to \$100,000

High \geq \$100,000

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

Table 6-3 Qualitative Cost and Benefit Ratings

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

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



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