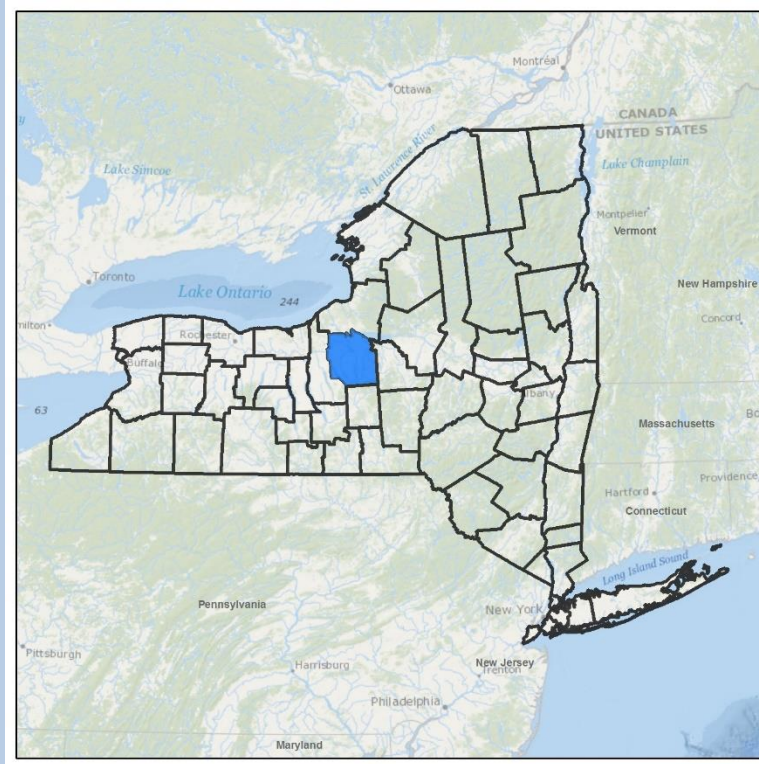












MUNICIPAL ANNEX | Onondaga County



 <p>Total Population (2010 Census)</p> <p>467,026</p>	 <p>Total Number of Buildings</p> <p>221,685</p>	 <p>Number of National Flood Insurance Program (NFIP) Policies and Percent in Regulatory Floodplain</p> <p>1,753 (54%)</p>	 <p>Total Agricultural Land (acres)</p> <p>171,467.7</p>
 <p>Total Land (square miles)</p> <p>805.1</p>	<p>Percent of Buildings in Regulatory Floodplain</p> <p>3%</p>	<p>Number of Repetitive Loss (RL) Properties</p> <p>46</p>	 <p>Harmful Algal Bloom Impacted Waterbody</p> <p>Yes</p>
 <p>Proposed Project Types</p> <p>Structure and Infrastructure Projects, Education and Awareness Programs, Local Plans and Regulations, and Natural Systems Protection</p>		 <p>Mitigation Focus</p> <p>Drought Severe Storm Severe Winter Storm</p>	



9.1 ONONDAGA COUNTY

This section presents the jurisdictional annex for Onondaga County.

9.1.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan’s primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Ilana M. Cantrell, Planner Syracuse–Onondaga County Planning Agency 421 Montgomery Street, Syracuse, NY 13202 (315) 435-8573 IlanaCantrell@ongov.net	Megan Costa, Assistant Director for County Planning Syracuse-Onondaga County Planning Agency 421 Montgomery Street, Syracuse, NY 13202 (315) 435-2611 MeganCosta@ongov.net

9.1.2 Municipal Profile

Section 4 (County Profile), Volume I of this HMP includes details on Onondaga County’s population, location, climate, history, growth, and development.

9.1.3 Hazard Event History Specific to the County

Onondaga County has a history of natural hazard events, as detailed in Volume I, Section 5.0 (Risk Assessment) of this HMP. A summary of historical events appears in each hazard profile of the plan and includes a chronology of events that have affected the County and its municipalities.

Table 9.1-1. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Onondaga County Designated?	Summary of Event	Municipal Summary of Damages and Losses
April – May 2011	Severe Storms, Flooding, Tornadoes, and Straight-Line Winds (FEMA-DR-1993)	Yes	A slow moving warm front pushed northward across central New York late in the afternoon on April 25th. Severe weather developed, and in addition to reports of severe wind damage and hail, plenty of wind shear in the vicinity of the warm front allowed for a few super-cell thunderstorms and tornadoes to develop. In addition, areas of heavy rain caused significant flash flooding in several locations of central New York. On May 26, a deep upper level low pressure system shifted east from the mid-Mississippi Valley region through the afternoon and evening, allowing numerous showers and thunderstorms to develop. Many reports of large hail and damaging winds occurred in central New York.	Though the County was impacted, there were no damages or impacts to County owned
June 30- July 1, 2015	Flash Flood	No	An unseasonably strong storm system tapping into above normal moisture sources across the Great Lakes and Northeast triggered multiple heavy rain producing thunderstorms across the	The County DOT in Pleasant Valley was impacted by flooding.



Dates of Event	Event Type (Disaster Declaration if applicable)	Onondaga County Designated?	Summary of Event	Municipal Summary of Damages and Losses
			region. Localized torrential rainfall in central New York caused serious urban flash flooding in the Syracuse, NY metropolitan area. Damages are estimated between three and five million dollars.	
July 1, 2017	Flash Flood	No	A tropical moisture laden air mass produced numerous showers and thunderstorms which traveled repeatedly over the same areas of the Finger Lakes Region and Upper Mohawk Valley. Widespread flash and urban flooding developed in portions of Cayuga, Onondaga, Madison and Oneida counties. Hardest hit areas were the villages and towns of Moravia, Chittenango, Oneida, and Utica to name a few. Total rainfall amounts along a narrow corridor from Moravia to Utica generally ranged from 2.5 to 5 inches, most of which fell in less than 1 to 2 hours. Total damages from this event range from \$10-\$15 million dollars Countywide.	Emergency Management- approximately \$3 million. The County DOT on W. Valley Road experienced flooding.

9.1.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5 (Risk Assessment) of this HMP convey detailed information regarding each participating jurisdiction’s vulnerability to the identified hazards. The risk ranking methodology is presented in Section 5.3 (Risk Ranking). The County had the opportunity to adjust the final ranking based on feedback from planning partners. The following summarizes the hazard vulnerabilities and their ranking in Onondaga County. Section 5 (Risk Assessment) includes additional vulnerability information relevant to this jurisdiction.

Hazard Risk Ranking

This section provides county-specific identification of the primary hazards of concern based on identified problems, impacts, and the results of the risk assessment as presented in Section 5 (Risk Assessment) of this plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy as well as community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for Onondaga County. The table indicates that drought, severe storm, and severe winter storm are the highest ranked hazards for the county.



Table 9.1-2. Onondaga County Calculated Risk Ranking

HAZARD	Drought	Earthquake	Flood	Geologic	Harmful Algal Bloom	Invasive Species	Severe Storm	Severe Winter Storm
RELATIVE RISK FACTOR	High	Low	Medium	Low	Medium	Low	High	High

*Note: The scale is based on the following hazard rankings as established in Section 5.3.
 High = Total hazard priority risk ranking score of 5 and above
 Medium = Total hazard priority risk ranking of 3.9 – 4.9
 Low = Total hazard risk ranking below 3.8*

Identified Issues

The County has identified the following vulnerabilities:

- Sewer and storm sewer failure from inflow and infiltration during heavy rain events. Aged infrastructure; combined sanitary-storm sewers in certain locations.
- Need for backup power/generators in county sewer system (pump stations)
- Flood prone culverts on county roads
- Need for sediment control
- Erosion from private property into ROWs
- Many Wastewater facilities have single point of entry
- Parkland in floodplain
- Aging septic systems/undersized septic/septics susceptible to flooding.
- Staffing/Fiscal resources – focus of capital program and dept budgets is overwhelmingly maintenance activities versus system enhancement
- Development along waterways/adjacent to floodplains/wetlands; impervious surface impacts from development; replacement of forested areas with residential development.
- Unfiltered drinking water system serving City of Syracuse (150,000 residents); HAB threat to source water
- Invasive species affecting infrastructure (tree loss, effects on water systems, etc.)
- OC DOT North Area Maintenance Facility @ E. Molloy Road – No backup generator
- Repetitive flood prone roadways (Beach Rd, Rt 298 Cicero)
- Flooding in V. Marcellus in 2017
- Harmful Algal Bloom events: Skaneateles Lake; Otisco Lake also a drinking water source.
- Lots of invasives – Emerald Ash Borer, Hemlock Woolly Adelgid, invasive plant species everywhere, water borne invasive plants and animals (milfoil, zebra mussels, etc.), deer ticks a growing issue in suburban and even urban communities’ recent years

9.1.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of mitigation planning into existing and future planning mechanisms





Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to Onondaga County.

Table 9.1-3. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master / Comprehensive Plan	Yes, 1998	County	SOCPA	2010 Development Guide and Framework for Growth, SOCPA 1998
Capital Improvements Plan	Yes, Annual	County	Exec/Legislature	2009-2023 Capital Improvement Plan,
Floodplain Management / Basin Plan	Yes	County	County SWCD	OC SWCD has prepared stream stabilization plans and implemented some Best Management Practices (BMPs) for some streams in county.
Stormwater Management Plan	Yes	NYS/local	Municipalities	Save the Rain program http://savetherain.us/ CNY Stormwater Coalition http://www.cnyrpdb.org/stormwater/
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	Yes	Local	Municipalities	Onondaga, Otisco, Oneida, Skaneateles Lakes have watershed management plans http://www.onlakepartners.org/ http://www.cnyrpdb.org/oneidalake/ https://www.ocswcd.org/slwap.html
Economic Development Plan	Yes	County/region	County/Centerstate CEO	CNY Rising – Upstate Revitalization Initiative
Comprehensive Emergency Management Plan	Yes, 2007	County	OEM	Comprehensive Emergency Management Plan (CEMP) – update in progress
Emergency Operation Plan	Yes	County	OEM	See CEMP
Post-Disaster Recovery Plan	Yes	County	OEM	See CEMP
Transportation Plan	Yes	MPO	Syracuse Metro Transportation Council	2050 Long Range Transportation Plan – Moving Towards a Greater Syracuse
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
Regulatory Capability				
Building Code	No	Local and State	N/A	NYS Building Code
Zoning Ordinance	No	Local	N/A	Regulated at local level
Subdivision Ordinance	No	Local	N/A	Regulated at local level
NFIP Flood Damage Prevention Ordinance	No	Local	N/A	Regulated at local level



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
NFIP: Cumulative Substantial Damages	No	Local	N/A	Regulated at local level
NFIP: Freeboard	No	Local	N/A	Regulated at local level
Growth Management Ordinances	No	Local	N/A	Regulated at local level
Site Plan Review Requirements	No	Local	N/A	Regulated at local level
Stormwater Management Ordinance	No	Local	N/A	Regulated at local level
Municipal Separate Storm Sewer System (MS4)	No	Local	N/A	CNY Stormwater Coalition http://www.cnyrpdb.org/stormwater
Natural Hazard Ordinance	No	Local	N/A	Regulated at local level
Post-Disaster Recovery Ordinance	No	Local	N/A	Regulated at local level
Real Estate Disclosure Requirement	Yes	State	NYS Department of State, Real Estate Agent	NYS mandate, Property Condition Disclosure Act, NY Code - Article 14 §460-467
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to Onondaga County.

Table 9.1-4. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Onondaga Co. Planning Board
Mitigation Planning Committee	Yes	SOCPA / Emergency Management
Environmental Board/Commission	Yes	Onondaga Co. Council on Environmental Health
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Regional Economic Development Council
Maintenance Programs to Reduce Risk	Yes	Operating Depts involved in infrastructure/facilities
Mutual Aid Agreements	Yes	Multiple (Fire/EMS, WEP, DOT, etc.)
Technical/Staffing Capability		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Syracuse-Onondaga County Planning Agency; Onondaga County Departments of Water Environment Protection, Transportation, Health; OC SWCD
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Onondaga County Departments of Water Environment Protection, Transportation, Health
Planners or engineers with an understanding of natural	Yes	Various county departments and agencies,



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
hazards		DOT/WEP
NFIP Floodplain Administrator (FPA)	No	Municipal level
Surveyor(s)	Yes	OC SWCD, OCDOT
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	GIS via SOCPA; no particular HAZUS/MH training
Scientist familiar with natural hazards	Yes	Onondaga County Health Department
Warning systems/services	Yes	Reverse 911/Everbridge/EAS/211
Emergency Manager	Yes	Director, Onondaga County Department of Emergency Management
Grant writer(s)	Yes	Various departments, Onondaga County Soil & Water Conservation District (for some agricultural-environmental projects)
Staff with expertise or training in benefit/cost analysis	Yes	Not in FEMA specific BCA's
Professionals trained in conducting damage assessments	Yes	Emergency Management/DOT/WEP/CEDAR program in Codes

Fiscal Capability

The table below summarizes financial resources available to Onondaga County.

Table 9.1-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	Yes, for use in income eligible census block groups
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	Yes
Other	No



Community Classifications

The table below summarizes classifications for community program available to Onondaga County.

Table 9.1-6. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
NYSDEC Climate Smart Community	No	-	-
Storm Ready Certification	Yes	-	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	N/A	-	-
Organizations with mitigation focus (advocacy group, non-government)	N/A	-	-
Public education program/outreach (through website, social media)	N/A	-	-
Public-private partnership initiatives addressing disaster-related issues	N/A	-	-

Notes: N/A Not applicable, NP Not participating, - Unavailable

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule (<https://www.isomitigation.com/bcegs/>)
- The ISO Mitigation online ISO’s Public Protection website at <https://www.isomitigation.com/ppc/>
- New York State Climate Smart Communities (<http://www.dec.ny.gov/energy/56876.html>)
- The National Weather Service Storm Ready website at <https://www.weather.gov/stormready/communities>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of Onondaga County’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

Table 9.1-7. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability		X	
Administrative and technical capability		X	
Fiscal capability		X	





Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Community political capability		X	
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

It is the intention of the County to incorporate hazard mitigation planning and natural hazard risk reduction as an integral component of the County’s administrative, regulatory and operational framework. Such efforts which are now an ongoing part of County operations are identified in the Capability Assessment of Section 6 (Mitigation Strategy), as well as in the completed mitigation initiatives identified in the following Section 9.1.6. In addition, the County identified specific integration activities that will be incorporated into procedures and are included in their updated mitigation strategy. The following textual summary and table identify relevant planning mechanisms and programs that have been/will be incorporated into County procedures, which may include former mitigation initiatives that have become continuous/on-going programs and may be considered mitigation “capabilities”:

Planning

Existing Integration

Onondaga County 2010 Development Guide & Framework for Growth: The 2010 Development Guide & Framework for Growth is currently being updated. The Guide considers areas of natural hazard risk at a countywide scale and aims to foster environmental protection, sound development practice and natural hazard risk management. The update will refer to the Countywide Hazard Mitigation Plan.

Comprehensive Emergency Management Plan (CEMP): The Comprehensive Emergency Management Plan refers to the Countywide Hazard Mitigation Plan and includes a Continuity of Operations Plan. The Plan provides general guidance on mitigation projects. The County continues to develop, enhance and implement existing emergency plans.

Climate Actions Plan: The Climate Action Plan includes a baseline inventory of the County’s carbon emissions, a listing of those emissions by source and recommendations for improving our greenhouse gas inventory.

Onondaga County Hazard Mitigation Plan: The County supports the implementation, monitoring, maintenance, and updating of this Plan.

Planning documents at the County and local level facilitate growth in low hazard areas, foster environmental protection, and designate watershed/riparian protections. The County Comprehensive Plan update and the Long-Range Transportation Plan incorporate resilience themes.

Opportunities for Future Integration

The update to the Onondaga County 2010 Development Guide & Framework for Growth will include references to the Countywide Hazard Mitigation Plan. The County’s resilience plan/strategy will be incorporated in this Hazard Mitigation Plan.





Regulatory and Enforcement (Ordinances)

Existing Integration

Ordinances in Onondaga County are regulated at the local level.

Opportunities for Future Integration

The County can provide guidance to local municipalities on updating ordinances to include information on natural hazards.

Operational and Administration

Existing Integration

Save the Rain Program: The Save the Rain Program is a nationally renowned stormwater program for the Onondaga Lake Watershed. This program has also implemented a number of projects and initiatives that relate to hazard mitigation.

Planning Board: The Onondaga County Planning Board (OCPB) operates under NYS General Municipal Law §239 l, m & n to advise local boards on the potential inter-municipal or countywide impact of local land use decisions. The Board uses the Onondaga County 2010 Development Guide to direct its recommendations on municipal land use referrals and to review the proposed Onondaga County Capital Improvement Program.

Council on Environmental Health: The Bureau of Community Environmental Health provides public health services in the areas of Food Protection, Residential Sanitation and Temporary Facilities.

County Government Environmental Sustainability Advisory Committee: The Environmental Sustainability Advisory Committee is comprised of representatives from all county departments and headed by the Director of the Office of the Environment. One of the charges of the committee was to develop and advance the comprehensive Climate Action Plan for Onondaga County.

National Flood Insurance Program Support: The County supports local government compliance with and good-standing in the National Flood Insurance program.

Mutual Aid Agreements: The County works to create/enhance/ maintain mutual aid agreements with neighboring communities.

Stream Team Program: The County supports/participates in the Stream Team program offered by the Onondaga County SWCD, to assist in the removal of debris, log jams, etc. in flood vulnerable stream sections. The SWCD also provides technical assistance for stream and shoreline stabilization.

Re-Vegetation of Critical Areas: The County SWCD conducts re-vegetation of critical areas through hydroseeding/bale chopper.

Geo-referencing: The County SOCPA keeps a geo-referenced list and information on critical facilities, natural resources, environmentally sensitive areas, and hazard prone areas.

Municipal Guidance on Development and Subdivision: The County SOCPA, County Planning Board and municipalities encourages the incorporation of conservation subdivision principles into subdivision review. The County encourages towns and villages to adopt comprehensive plans and land use regulations to foster sound development principles.



Open Space Strategies and Conservation Standards: The County SOCPA Regional Planning, OC SWCD and other agencies work with existing agencies and organizations to develop open space strategies and conservation standards to be met by new development projects.

Identifying Natural Hazard Areas: The County SOCPA encourages municipalities to establish an additional layer of zoning within identified natural hazard areas.

Agricultural Spills and Cleanup: The County provides technical assistance at agricultural spills and emergencies. The County also develops procedures, protocols, and plans for composting of animal mortality.

The County Department has three countywide planners. These planners operations include hazard mitigation planning, comprehensive planning, municipal assistance, and specific topical projects such as resiliency. Stormwater Management functions in the County are performed by the Save the Rain Program and the Onondaga County Department of Water Environment Protection. NFIP functions are performed at the local level. The County Engineering Department (DOT and WEP) have experience with developing Benefit-Cost Analysis, can perform Substantial Damage Estimates, and have experience in preparing grant applications for mitigation projects. Staff in various departments receive training/continued professional development which supports natural hazard risk reduction. No County staff have specific job descriptions that specifically include identifying and/or implementing mitigation projects/actions or other efforts to reduce natural hazard risk. However, staff participate in associations and groups that support natural hazard risk reduction and build hazard management capabilities such as the Association of Highway Superintendents, the Association of Wastewater Professionals, the Onondaga County Planning Federation, and the Onondaga County Human Needs Task Force.

Other County led environmental hazard management related programs include the Office of the Environment, Department of Health: Environmental Health, and the Department of Water Environmental Protection. The County also has specifically trained emergency response teams and the Emergency Operations Center.

Opportunities for Future Integration

Staff would benefit from training in grant programs, BCA's, and best practices.

Onondaga County Emergency Management: Participate in regional, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including:

- Support the performance of enhanced risk and vulnerability assessments for hazards including flooding, earthquake, wind, and land failure.
- Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use.

Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies, or "Rapid Observation of Vulnerability and Estimation of Risk - ROVER). It is recognized that these programs will likely need to be initiated and supported at the Regional and/or State level, and will likely require training, tools and funding provided at the regional, state and/or federal level.



Funding

Existing Integration

The County operating budget and Capital Improvements budget do not specifically name line items for mitigation projects/activities. The County has not pursued grant funding in the past for mitigation-related projects.

Opportunities for Future Integration

Include mitigation projects as line items in the County budget/capital improvements budget as relevant and pursue grant funding to support hazard mitigation.

Education and Outreach

Existing Integration

Onondaga County operates a website (<http://www.ongov.net/>) which has various information and news. The County conducts outreach through various departments and organizations including the Onondaga County Citizens Corps, the County Health Department outreach programs, the Association of Town Supervisors/Village Mayors, the Association of Highway Superintendents, the Association of Wastewater Professionals, the Onondaga County Planning Federation, the Council on Environmental Health, the Save the Rain program, Disaster Preparedness Committees, the Department of Emergency Communications (E-911), and the County's public warning system (EAS / EBS). In addition, outreach is conducted by the American Red Cross public awareness campaigns, local police/fire/EMS, the Cooperative Extension, the Neighborhood Watch. The National Weather Service also conducts outreach programs/data sharing. The County also conducts outreach through reverse 911 and 211 and creates data sets for the reverse 911 program, targeted to identified hazards of concern.

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



The County also 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.

Opportunities for Future Integration

The County can expand outreach efforts to include the findings of the Hazard Mitigation Plan update.

Repetitive Loss and Severe Repetitive Loss Properties: Within the first year of Plan adoption, request FEMA to conduct a mitigation workshop targeting those communities with significant numbers of flood vulnerable properties and Repetitive Loss/Severe Repetitive Loss (RL/SRL) properties (e.g. Towns of Cicero, DeWitt, Elbridge, Lafayette, Lysander, Manlius; Village of Skaneateles; City of Syracuse). This program should address the specific interests and concerns of these flood vulnerable communities in the County which includes:

- Gaining a better understanding of the available mitigation grant programs, including the procedural requirements of a RL/SRL community under this program;
- Understanding how flood vulnerable and RL/SRL communities can enhance their efforts to encourage and support property owners to mitigate their properties,
- Understanding how flood vulnerable and RL/SRL communities can best leverage existing data, information and studies (e.g. NFIP data) to target specific properties for mitigation, and
- Learning what resources are available to conduct/complete Repetitive Loss Area Analyses, and gather critical data (e.g. structure elevations) to screen and move properties through the applicable mitigation grant programs.
- The County shall promote this workshop through established groups and forums including the OC SWCD and the ongoing County Hazard Mitigation Planning Committee. Further, the County shall continue to conduct meetings as needed with these flood vulnerable communities, with the support of NYS DHSES and FEMA, to assist communities as they work to address their flood vulnerable and RL/RSL properties.

Sheltering, Evacuation, and Temporary Housing

Temporary housing, evacuation routes, and sheltering measures must be in place and available for public awareness to protect residents, mitigate risk, and relocate residents, if necessary, to maintain post-disaster social and economic stability.

Temporary and Permanent Housing

Flooding events in Onondaga County are anticipated to occur most often at a relatively small geographic scale. Onondaga County also has very few dense concentrations of flood prone residences. And the other identified hazards in the plan are not likely to require temporary housing accommodations. As such the need for temporary housing for displaced residents is relatively small in scale, and could likely be absorbed by facilities available through the American Red Cross, Salvation Army, etc. and the existing available housing stock.

In the event that trailers or other temporary housing is necessary, the NYS Fairgrounds has ample parking lots with proximity to infrastructure and services that would likely provide adequate space for temporary housing needs.

Evacuation and Sheltering Needs

The American Red Cross has primary legal responsibility to provide shelter for Onondaga County individuals and families during an emergency occurring in Onondaga County. Services of the ARC include emergency



sheltering needs, mass care, feeding, information and referral, and special population assistance. A confidential shelters list is maintained by the Dept. of EM, and the ARC identifying capacity for 15,000+ residents across Onondaga County. The ARC is responsible for maintaining shelter agreements with selected facilities.

The Special Needs Shelter Task Force is in place to respond to issues regarding sheltering, home care nurses and aides, oxygen, durable medical equipment, supplies and medications. The Committee includes representatives from a variety of county departments. The Onondaga County Health Department shall determine the need for and designate and supervise a Special Needs Shelter. The shelter must have an adequate supply of regulated power to sustain life support equipment such as Kidney Dialysis Machines, continuous ventilation devices and aspiration devices. The Onondaga County Health Department, Syracuse University School of Nursing, and local home care agencies will supply staffing. Routine shelter supplies are the responsibility of the American Red Cross. Special supplies will be supplied by Special Needs Task Force members and patients.

Per the County CEMP, the Dept. of Emergency Management is tasked with coordinating evacuation procedures with the Sheriff's Department, the On-scene Commander, the Transportation Coordinator, the ARC, hospitals, special facilities, the fire service and the Health Department.

The Sheriff's Dept. is responsible for implementing traffic control procedures including coordination of vehicular traffic and protection of resources, facilities and services in the affected areas.

The Onondaga County CEMP includes the NYS Highway Emergency Task Force Policy and Procedures, a product of the NYS Disaster Preparedness Commission.

Responsibilities & Priorities

- 1) State responsibilities - clear debris from impacted roads and public property
- 2) Local jurisdiction responsibilities - removal of debris to a storage/disposal site

First priority - clearance of transportation corridors to allow passage of emergency vehicles

Second Priority - clearance of transportation corridors and other property to allow utility crews access to damaged power lines or other utility infrastructure needing repair to allow for power restoration.

Third Priority - other emergency-related needs as identified by the affected local jurisdictions or by State agencies, and as authorized by the State Coordinating Officer.

The Terrorism Incident Annex also includes evacuation planning. Depending upon the assessment of the terrorist incident and the risks to the public evacuation planning may commence under the direction of law enforcement, the fire service, emergency management, the health department, and other agencies, as may be determined at the time of the incident.

9.1.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2013 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own



table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.

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SECTION 9.1: ONONDAGA COUNTY

Table 9.1-8. Status of Previous Mitigation Actions

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)	Next Steps	
OC-0	Onondaga County, working along with the inclusive municipalities, shall conduct and facilitate community and public education and outreach to include, but not be limited to, the following to promote and effect natural hazard risk reduction: <ul style="list-style-type: none"> 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 							
	See Above	All	Enhance County and municipal web and related resources as a source of information for the plan, updates, mitigation grant announcements, and related mitigation guidance and resources. Provide information for municipal, agency, and neighborhood distribution and posting related to hazard mitigation actions and programs.	County (through SOCPA and EM) – working with local officials and floodplain administrators	Ongoing Capability	Cost	-	1. Include in the 2019 HMP as an ongoing capability
						Level of Protection	-	2. -
					Damages Avoided; Evidence of Success	-	3. Ongoing capability for Onondaga County	
OC-1	Continue to support the implementation, monitoring, maintenance and update of this Plan, as defined in Section 7.0	All	Program Maintenance	SOCPA, Emergency Management, Participating Jurisdictions	Ongoing Capability	Cost	-	1. Include in the 2019 HMP as an ongoing capability
						Level of Protection	-	2. -
						Damages	-	3. Ongoing capability for Onondaga County





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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Evidence of Success	
OC-2	Support local government compliance with and good-standing in the National Flood Insurance program.	Flood, Severe Storm	Flood hazard risk reduction	County (through SOCPA and EM)	Ongoing Capability	Cost	Evidence of Success	1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-3	Continue to develop, enhance and implement existing emergency plans.	All		OC Emergency Management	Ongoing Capability	Cost	Evidence of Success	1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-4	Create / enhance / maintain mutual aid agreements with surrounding Counties and DHSES.	All		OC Emergency Management	Ongoing Capability	Cost	Evidence of Success	1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-5	Newport Road Drainage Improvement Project	Flood, Severe Storm	Roadside drainage on Warners and Fire Dept running south 800+/- feet	County DOT	No Progress	Cost	Evidence of Success	1. Discontinue 2. - 3. No longer a priority
OC-6	Canton Street Drainage Improvement Project	Flood, Severe Storm	Street drainage problem at Canton St south of Thruway bridge	County DOT	No Progress	Cost	Evidence of Success	1. Discontinue 2. - 3. No longer a priority



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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						of Success	Cost	
OC-7	Limestone Creek Bank Stabilization (North Street Reconstruction Project)	Flood, Severe Storm	Bank Destabilization	County DOT	Complete	Level of Protection		1. Discontinue 2. - 3. Project has been completed; therefore, it will not be included in the 2019 HMP. Bank is stabilized with no indication of further erosion or slope failure.
						Damages Avoided; Evidence of Success		
						Cost	\$100,000	
OC-8	Hitchings Road Bridge Scour Protection	Flood, Severe Storm		County DOT	Complete	Level of Protection		1. Discontinue 2. - 3. Project has been completed and the bridge was replaced; therefore, it will not be included in the 2019 HMP. Scour at bridge has been eliminated providing stable streambanks and roadway.
						Damages Avoided; Evidence of Success		
						Cost	\$60,858	
OC-9	Watervale Road Bridge Scour Protection	Flood, Severe Storm		County DOT	Complete	Level of Protection		1. Discontinue 2. - 3. Project has been completed by replacing stone with county forces; therefore, it will not be included in the 2019 HMP. Large stone revetment has eliminated scour issues.
						Damages Avoided; Evidence of Success		
						Cost	\$10,000	
OC-10	Tully Farms Road Culvert Replacement	Flood, Severe Storm		County DOT	In Progress	Level of Protection	-	1. Include in 2019 HMP 2. bridge replacement and drainage correction measures; road bank stabilization, realign stream 3. -
						Damages Avoided; Evidence of Success	-	
						Cost	-	
OC-11	Tanner Road Culvert Replacement	Flood, Severe Storm		County DOT	Complete	Level of Protection		1. Discontinue 2. 3. Project has been completed. Previous culvert was determined to be undersized causing flow restriction, backwater condition, and bank scour. New structure with proper revetment has eliminated previous conditions.
						Damages Avoided; Evidence of Success		
						Cost	\$175,000	





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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
OC-12	Stream gage/flood forecasting project along canal system with USGS and NWS	Flooding, Severe Storm	Varying water levels due to flooding and flow regulation particularly along the NYS canal waterways impact shorelines and shoreline properties.	OC Office of Environment w/ USGS and NWS support	Complete			1. Discontinue 2. - 3. Project has been completed; therefore, it will not be included in the 2019 plan.
OC-13	Work with the NYSDEC and other stakeholders (e.g. CNY Waterways, NYS Canal Corporation, Oneida Lake Advisory Committee) to promote the Flood Mitigation Task Force which may serve as a tool to provide better coordination and communication for regional water level management (problem and initiative further detailed below).	Flood, Severe Storm	Water management decisions are not well coordinated among stakeholders; need for a more coherent and comprehensive water level management system in the basin; input from Onondaga County should be presented.	OC Flood Advisory Committee	In Progress			1. Include in 2019 HMP 2. - 3. -
OC-14	Help to promote awareness and use of NYAlert by communities and citizens – include information on county website, etc.	All hazards		County OEM	Ongoing capability			1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-15	Run a parallel line of 24 miles of 54” water pipeline from Lake Ontario to the City of Syracuse, built to seismic standards. The existing water supply line is now more than 40 years old, is vulnerable to damage including seismic impacts, and has inadequate redundant	Earthquake		OCWA	In Progress			1. Include in 2019 HMP 2. - 3. -





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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Success	Cost	
	supply in the event of damage or loss.							
OC-16	Southwestern Branch Pipeline Project. Install ~7 miles of 48" water supply main, built to seismic standards, to provide an alternate water supply to the City of Syracuse.	Earthquake		OCWA	In Progress	Success		1. Include in 2019 HMP 2. 3.
						Cost		
						Level of Protection		
OC-17	Support/Participate in the Stream Team program offered by the Onondaga County SWCD, to assist in the removal of debris, log jams, etc. in flood vulnerable stream sections.	Flooding	Removal of debris, log jams, etc. in flood vulnerable stream sections.	County, OCSWCD (Mark Burger)	Ongoing capability	Success		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Cost		
						Level of Protection		
OC-18	Keep a geo-referenced list and information on critical facilities, natural resources, environmentally sensitive areas, and hazard prone areas.	All Hazards	Need for accessible digitally available data on facilities and environmental resources	SOCPA GIS, Emergency Management, E911, working with all municipalities and agencies	Ongoing capability	Success		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Cost		
						Level of Protection		
OC-19	Encourage the incorporation of conservation subdivision principles into subdivision review.	Flood, Ground Failure, Earthquake	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA, Regional Planning, OC SWCD, other appropriate agencies	Ongoing capability	Success		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Cost		
						Level of Protection		
OC-20	Encourage towns and villages to adopt comprehensive plans and land use regulations to foster sound development principles.	Flood, Ground Failure, Earthquake	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA, County Planning Board and municipalities	Ongoing capability	Success		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Cost		
						Level of Protection		



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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
OC-21	Continue to authorize the Onondaga County Planning Board to review subdivisions under NYS GML 239.	Flood, Ground Failure, Earthquake	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA, County Planning Board and municipalities	Ongoing capability	Cost		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Level of Protection		
						Damages Avoided; Evidence of Success		
OC-22	Work with existing agencies and organizations to develop open space strategies and conservation standards to be met by new development projects.	Flood, Ground Failure, Earthquake	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA, Regional Planning, OC SWCD, other appropriate agencies	Ongoing capability	Cost		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Level of Protection		
						Damages Avoided; Evidence of Success		
OC-23	Promote public awareness of hazard mitigation planning activities and provide a venue for ongoing public and stakeholder input.	All Hazards	Enhance County and municipal web and related resources as a source of information for the plan, updates, mitigation grant announcements, and related mitigation guidance and resources. Provide information for municipal, agency, and neighborhood distribution and posting related to hazard mitigation actions and programs.	SOCPA with municipalities	Ongoing capability	Cost	-	1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost		
OC-24	Encourage municipalities to establish an additional layer of zoning within identified natural hazard areas.	Flood, Ground Failure	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA with municipalities	Ongoing capability	Cost		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Level of Protection		
						Damages Avoided; Evidence of Success		
OC-25	Undertake a countywide comprehensive plan to foster environmental protection, sound development practice and natural hazard risk management.	All Hazards	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA with municipalities	In Progress	Cost		1. Include in the 2019 HMP 2. - 3. Undertake a countywide comprehensive plan to foster environmental protection, sound development practice and natural hazard risk management.
						Level of Protection		
						Damages Avoided; Evidence of Success		
OC-26	Create data sets for reverse 911, targeted to identified hazards of concern	All Hazards (Response)	Need for accessible digitally available data on facilities and environmental resources	SOCPA GIS, EM, E911	Ongoing capability	Cost		1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
						Level of Protection		
						Damages Avoided; Evidence of Success		
OC-27	Develop procedures, protocols and plans for composting of animal mortality	Flood, Earthquake, Severe Storm, Severe Winter Storm (Post-Disaster - Recovery)		DOH, OCSWCD	No Progress	Cost	-	1. Discontinue 2. - 3. At the time of this plan update, the county chose to remove this action from their mitigation strategy. Therefore, it will not be included in this plan update.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OC-28	Provide technical assistance at agricultural spills/emergencies	Flood, Earthquake, Severe Storm (Post-Disaster - Response)		County and Local OEM	No Progress	Cost	-	1. Discontinue 2. - 3. At the time of this plan update, the county chose to remove this action from their mitigation strategy. Therefore, it will not be included in this plan update.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	



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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
OC-29	Provide technical assistance for Stream / Shoreline Stabilization	Flooding, Severe Storm		OCSWCD	Ongoing capability			1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-30	Re-vegetation of critical areas w/ hydroseed / bale chopper	Flooding, Severe Storm, Ground Failure (Post Disaster - Recovery)		OCSWCD	Ongoing capability			1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-31	Support the potential mitigation actions identified in the 2006 Beartrap-Ley Creek Drainage District Study. More specific actions are identified in the following jurisdictional annexes: City of Syracuse; Towns of Cicero, Dewitt, Manlius and Salina; Villages of East Syracuse and North Syracuse.	Flooding, Severe Storms		OC Dept of Water Environment Protection; Beartrap-Ley Creek Drainage District	In Progress			1. Include in 2019 HMP 2. 3.
OC-32	Erie Boulevard Storage System – alter and expand this system to capture more combined sewer overflows during wet weather events.	Flooding, Severe Storms		OC Dept of Water Environment Protection	Complete			1. Discontinue 2. 3. Complete
OC-33	Assist local municipalities with training opportunities for municipal planning and zoning officials	All Hazards	Increased hazard resilience of new development; retrofitting of existing communities for resilience	SOCPA, Onondaga County Planning Federation	Ongoing capability			1. Include in the 2019 HMP as an ongoing capability 2. - 3. Ongoing capability for Onondaga County
OC-34	Participate in regional, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts. Such programs may include developing a detailed inventory of critical facilities based upon FEMA’s Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes							





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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)	Next Steps						
	including: <ul style="list-style-type: none"> Support the performance of enhanced risk and vulnerability assessments for hazards including flooding, earthquake, wind, and land failure. Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies, or "Rapid Observation of Vulnerability and Estimation of Risk - ROVER). It is recognized that these programs will likely need to be initiated and supported at the Regional and/or State level, and will likely require training, tools and funding provided at the regional, state and/or federal level.						<ol style="list-style-type: none"> Project to be included in 2019 HMP or Discontinue If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). If discontinue, explain why. 						
	See above	All Hazards	Detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes	OC EM	Ongoing Capability	<table border="1"> <tr><td>Cost</td><td></td></tr> <tr><td>Level of Protection</td><td></td></tr> <tr><td>Damages Avoided; Evidence of Success</td><td></td></tr> </table>	Cost		Level of Protection		Damages Avoided; Evidence of Success		<ol style="list-style-type: none"> Include in the 2019 HMP as an ongoing capability - Ongoing capability for Onondaga County
Cost													
Level of Protection													
Damages Avoided; Evidence of Success													
OC-35	Within the first year of Plan adoption, request FEMA to conduct a mitigation workshop targeting those communities with significant numbers of flood vulnerable properties and Repetitive Loss/Severe Repetitive Loss (RL/SRL) properties (e.g. Towns of Cicero, DeWitt, Elbridge, Lafayette, Lysander, Manlius; Village of Skaneateles; City of Syracuse). This program should address the specific interests and concerns of these flood vulnerable communities in the County which includes: <ul style="list-style-type: none"> Gaining a better understanding of the available mitigation grant programs, including the procedural requirements of a RL/SRL community under this program; Understanding how flood vulnerable and RL/SRL communities can enhance their efforts to encourage and support property owners to mitigate their properties, Understanding how flood vulnerable and RL/SRL communities can best leverage existing data, information and studies (e.g. NFIP data) to target specific properties for mitigation, and Learning what resources are available to conduct/complete Repetitive Loss Area Analyses, and gather critical data (e.g. structure elevations) to screen and move properties through the applicable mitigation grant programs. The County shall promote this workshop through established groups and forums including the OC SWCD and the ongoing County Hazard Mitigation Planning Committee. Further, the County shall continue to conduct meetings as needed with these flood vulnerable communities, with the support of NYSOEM and FEMA, to assist communities as they work to address their flood vulnerable and RL/SRL properties.						<ol style="list-style-type: none"> Include in the 2019 HMP 						
	See above	Flood, Severe Storm	Reduce number of RL/SRL properties	SOCPA, County Emergency Management	No Progress	<table border="1"> <tr><td>Cost</td><td></td></tr> <tr><td>Level of Protection</td><td></td></tr> <tr><td>Damages Avoided; Evidence of Success</td><td></td></tr> </table>	Cost		Level of Protection		Damages Avoided; Evidence of Success		<ol style="list-style-type: none"> Include in the 2019 HMP
Cost													
Level of Protection													
Damages Avoided; Evidence of Success													
OC-36	Within the first year of plan implementation, identify order of magnitude costs for county-sponsored structural and infrastructure mitigation projects identified in the County annex, and identify the mitigation benefits associated with each of these initiatives. An updated project prioritization for county-sponsored projects shall be provided as part of the 1st year annual review and update. Further, work with members of												





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Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if project status is complete)	Next Steps
	the ongoing mitigation planning committee and project implementation leads to complete a similar effort for local initiatives identified in each community's annex.						
See above	All Hazards	Need to identify and prioritize capital expenses related to hazard mitigation, response and recovery	County Engineer working with local project leads	Ongoing Capability	Cost	-	1. Include in the 2019 HMP as an ongoing capability
					Level of Protection	-	2. -
					Damages Avoided; Evidence of Success	-	3. Ongoing capability for Onondaga County

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Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

Onondaga County has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2013 Plan:

- The County has performed ongoing maintenance projects to reduce the impact of flooding but has not identified specific mitigation projects/activities that have been completed but were not identified in the previous mitigation strategy in the 2013 Plan.

Proposed Hazard Mitigation Initiatives for the Plan Update

Onondaga County participated in a mitigation action workshop on January 14, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.1-9 summarizes the comprehensive-range of specific mitigation initiatives Onondaga County would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as ‘High’, ‘Medium’, or ‘Low.’ The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.1-10 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
Onondaga County-1	Abbey Road Drainage	1	Flood, Severe Storm, Severe Winter Storm	<p>Problem: Stormwater flow related erosion from nearby hillside affecting residential properties, right of way, and road base, in vicinity of the 3700-3900 block of Abbey Road in the Town of Onondaga. Intention is to mitigate roadway and drainage infrastructure impacts from large stormwater flows, reduce potential flooding threats to residences along Abbey Rd.</p> <p>Solution: Cross culvert/streamway realignment along Abbey Road and potentially upstream parcels in the Town of Onondaga. Project yet to be designed, in scoping phase.</p>	No	None	Within 5 years	Onondaga County Department of Transportation	\$175,000	Increased stability of road bed, thereby increasing lifespan of road and drainage structures. Avoiding roadway reconstruction and maintenance expenditures, and private property impacts.	HMGP, TIP, local dollars.	High	SIP	SP
Onondaga County-2 (former OC-10)	Tully Farms Road Bank Stabilization	1	Flood, Severe Storm, Severe Winter Storm	<p>Problem: The existing stream channel is eroding the roadside embankment threatening the stability and alignment of the road edge.</p> <p>Solution: Armor the bank adjacent to energy flows and/or alter stream channel alignment. Project yet to be designed, in scoping phase.</p>	No	Yes, permitting necessary	Within 5 years	Onondaga County Department of Transportation	\$75,000	Increased stability of road bed, thereby increasing lifespan of road and drainage structures. Avoiding roadway reconstruction and maintenance expenditures, and private property impacts.	HMGP, TIP, local dollars.	High	SIP	SP



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
Onondaga County-3	Onondaga County facility 500-year floodplain analysis	1, 2, 6	Flood, Severe Storm	<p>Problem: County owned critical facilities are located within the 500-year floodplain. This puts the facilities at risk to flooding and subsequent damage, leading to losses and structural damages, and impacts to operations.</p> <p>Solution: Onondaga County will analyze each county-owned critical facility for the following: Elevation of the facility; Assess facility facilities and risks; Identify mitigation measures as necessary; Send prioritized mitigation measures to facility manager.</p>	Yes 💧	None	Ongoing until complete	OC WEP	\$1+ million	Reduction in flood exposure	FEMA HMGP and PDM, WQIP, county budget	High	SIP	PP
Onondaga County-4	Countywide Forest Management Plan	2, 3, 4	Severe Storm, Invasive Species	<p>Problem: The County needs a Forest Management Plan to address the following needs: Vulnerability analysis; Proactive tree removal; Guiding policies for management.</p> <p>Solution: The County will create a Forest Management Plan to address the following areas: Forest management policies; Invasive species: identification of invasive species, prior invasive impact areas; Stream corridor plans; Public access; Protection of critical facilities within forests</p>	No	Yes, work within environmental areas	2 years	SWCD/ Office of the Environment/ DOTS/Utilities	\$5+million	Infrastructure stability	NYS DEC, County budget	High	LPR	PR
Onondaga County-5	Three Rivers and Cross Lake Water Chestnut Control	4	Invasive Species	<p>Problem: Invasive Water Chestnut covers approximately 140 acres in this water system, impacting economic, environmental, and recreational uses.</p> <p>Solution: The County will purchase a “mower” (weed harvester) and use to remove Water Chestnut.</p>	No	Yes, permitting	1 year	OC Health, SWCD, Lake Associations	\$200,000	Reduction in Water Chestnut population	County budget, HMGP, PDM	Medium	NSP	NR



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
Onondaga County-6	Backup Generators and for Onondaga County Department of Transportation Facilities	1, 3, 6	All Hazards	<p>Problem: The North Area Maintenance Facility is a repurposed UPS facility and is where the snow plows are housed that services the entire north east quadrant of Onondaga County. At the moment we do not have a generator for this facility, while our other 3 facilities do. When we have a power outage we cannot perform emergency maintenance to plows that become damaged or are in need of repairs to return to servicing their routes. We have had several blackouts over the years that brings all operations in and around the facility to a halt. The facility location is 6230 East Molloy Road East Syracuse NY 13057.</p> <p>Solution: Purchasing a generator will allow the maintenance facility to continue operations even in the worst winter storms, which is a necessity to allow normal operations for businesses and residents. The proposed generator will be wired to restore all life safety and operational components of the building in an emergency event.</p>	Yes	None	2 years	Onondaga County Department of Transportation	\$100,000	Continuity of service; potential as large facility to serve as evacuation/ sheltering location	HMGP, local funds	High	SIP	ES
Onondaga County-7 (former OC-10)	Tully Farms Road Culvert Replacement	1, 3	Flood, Severe Storm	<p>Problem: Culvert is in need of replacement</p> <p>Solution: Replace culvert to increase capacity and improve flow.</p>	No	None	Within 1 year	County DOT	\$50,000	Reduced localized flooding	County Budget	Medium	SIP	SP
Onondaga County-8 (former OC-13)	Promote the Flood Mitigation Task Force	1, 4, 5	Flood, Severe Storm	<p>Problem: Water management decisions are not well coordinated among stakeholders; need for a more coherent and comprehensive water level management system in</p>	No	Water management could involve need for permitting	Ongoing	OC Flood Advisory Committee	\$100,000	Increased coordination and planning for water level	NYS Canals	High	LPR, NSP, SIP	SP, NR



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
				<p>the basin; input from Onondaga County should be presented.</p> <p>Solution: Water management decisions are not well coordinated among stakeholders; need for a more coherent and comprehensive water level management system in the basin; input from Onondaga County should be presented</p>						management				
Onondaga County-9 (former OC-15)	Run a parallel line of 24 miles of 54" water pipeline from Lake Ontario to the City of Syracuse, built to seismic standards.	1, 3, 6	Earthquake, HAB	<p>Problem: The existing water supply line is now more than 40 years old, is vulnerable to damage including seismic impacts, and has inadequate redundant supply in the event of damage or loss.</p> <p>Solution: Run a parallel line of 24 miles of 54" water pipeline from Lake Ontario to the City of Syracuse, built to seismic standards</p>	No	None	5-10 yrs	OCWA	\$10m+	Critical infrastructure built to seismic standards; redundancy in case of damage or loss	NYS Water Grants, OCWA, HMGP	Medium	SIP	PP
Onondaga County-10 (former OC-16)	Southwestern Branch Pipeline Project. Install ~7 miles of 48" water supply main, built to seismic standards, to provide an alternate water supply to the City of Syracuse.	1, 3, 6	Earthquake, HAB	<p>Problem: Water supply main needs to be built to seismic standards.</p> <p>Solution: Install ~7 miles of 48" water supply main, built to seismic standards, to provide an alternate water supply to the City of Syracuse.</p>	No	None	5-10 yrs	OCWA	\$10m+	Critical infrastructure built to seismic standards; redundancy in case of damage or loss	NYS Water Grants, OCWA, HMGP	Medium	SIP	PP



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
Onondaga County-11	Multi-agency coordination to address harmful algal blooms in Skaneateles Lake	1, 2, 4	Harmful Algal Bloom	<p>Problem: HABs contain cyanobacteria which can produce toxins and other harmful components that can pose a public health risk to people and animals through ingestion, skin contact, or inhalation. Since Skaneateles is a drinking water source for the City of Syracuse, our office coordinates to address HABs as they arise and find ways to prevent future outbreaks.</p> <p>Solution: Coordinate with NYSDEC, City of Syracuse, and Skaneateles Lake Association to address Harmful Algal Blooms in Skaneateles Lake and other waterbodies as issues arise.</p>	No	No	Ongoing	NYSDEC, City Syracuse, OC SWCD, and/or County Office of the Environment	\$100,000	Coordinated approach to HAB threat to waterbodies and public health	NYS EFC, CFA, HMGP	High	SIP	PP
Onondaga County-12	Implementation of invasive species mitigation strategies into county and local plans	1, 2, 4	Invasive Species	<p>Problem: Aquatic, plant, and animal invasive species are a common threat to our County's natural environment.</p> <p>Solution: Develop and implement invasive species mitigation plans -- coordinate with State and federal agencies to determine actions to take.</p>	No	No	Ongoing	Onondaga County Health Department, Cornell Cooperative Extension, Office of the Environment	\$100,000+	Refined actions and strategies to address threats from invasive species	HMGP, County and local budgets	High	LPR, NSP	NR



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
Onondaga County-13	Mudboils Planning and Directional Drilling Project	1, 5	Ground Failure and Flooding	<p>Problem: Tully mudboils are artesian pressure wells that have sprung up in multiple locations in the Tully valley and caused extreme sedimentation and fish die off in Onondaga Creek, as well as ground failure issues related to landslides and other pressurized failures throughout the valley.</p> <p>Solution: Mudboils Planning and Directional Drilling Project coordinated with NYSDEC, Onondaga Nation and Onondaga Environmental Institute</p>	No	Unknown at this time	10 years	Office of the Environment, NYSDEC	\$500,000+	Decreased sedimentation in local waterways, decreased risk of ground failure, land subsidence	OEI, HMGP	High	LPR	PR
Onondaga County-14	Livestock water management during droughts	1, 3	Drought	<p>Problem: Twice in the last five years dairy farmers on the hilltops of Otisco and Skaneateles Lake Watersheds have had to resort to hauling and/or pumping water to resupply farm drinking water ponds. Additionally, there is little pond water reserve for fire suppression in the rural communities should the droughts occur</p> <p>Solution: Identify and develop livestock water management backup water supplies/cost effective alternatives for farmers in times of drought.</p>	No	No	Ongoing	Onondaga County SWCD	\$100,000	Minimize loss of livestock, minimize cost to farmers	NYS Dept. Ag& Markets, NYS DEC	Low	LPR	ES
Onondaga County-15	Extension of Skaneateles Lake Intake 2 to a point deeper than the current location.	1, 3	Harmful Algal Bloom	<p>Problem: The relatively shallow Intake 2 is experiencing low but detectable levels of cyanotoxins during late summer months. Would help with turbidity issues</p> <p>Solution: Extending Lake water intakes into deeper water-The City's shallowest water intake is located at a depth of 20 ft. By extending the Intake (a 2004 Engineering Study</p>	Yes	No	5 years	County Health Department, City of Syracuse Water Department	\$12 million	Toxins removed from drinking water source; avoid building filtration plant	NYS EFC, CFA, HMGP	High	SIP	PP



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
				proposed a 3,400 ft. extension), the water supply will be drawn from a depth of approximately 60 ft. The extended length will allow for a greater margin of safety, affording chlorine gas injected at the Water Intake additional contact time to inactivate microcystin.										
Onondaga County-16	Construction of a filtration facility for the Skaneateles Lake Water Supply	1, 3	Harmful Algal Bloom	<p>Problem: Skaneateles Lake is currently a Filtration Avoidance (FA) supply. If the State deems necessary for HABS, turbidity or other issues, there is a risk of losing FA</p> <p>Solution: Install a water filtration system.</p>	Yes	No	5 years	County Health Department, City of Syracuse Water Department	\$60 – 70 Mil. (1999 cost estimate). Approximately \$100 million in 2018 dollars.	Toxins removed from drinking water source	NYS EFC, CFA, HMGP	High	SIP	PP
Onondaga County-17	Booster chlorination for the Village of Jordan	1, 3	Harmful Algal Bloom	<p>Problem: Chlorination is only supplied in Skaneateles. The length of transmission main to Jordan and low use result in low to no chlorine residuals in the Village</p> <p>Solution: The County will assist the Village of Jordan with an engineering study to install a chlorination boost station. The village will then install the boost station per the results of the study.</p>	Yes	No	TBD	County Health Department, Village of Jordan	TBD	Water supply protected	CDBG, Village budget	High	SIP	PP
Onondaga County-18	Incorporation of climate change projections	1, 2, 3	All Hazards	<p>Problem: County planning and engineering projects should incorporate climate change projections for climate resilience.</p> <p>Solution: While considering planning, engineering and undertaking projects throughout the County, the County Planning Department will review and incorporate the latest information on</p>	No	None	Within 3 months then ongoing	County Planning Department	Staff time	Incorporation of climate change projections to allow for more climate resilience in the county.	County Operating Budget	High	LPR	PR



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Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
				climate change projections. Current climate projections information is available from the following sources: Northeast Regional Climate Center’s Intensity Duration Frequency Curves for New York State, Cornell University’s Climate Change Facts, NYSERDA’s ClimAid report and 2014 updated climate projections, NYS DEC’s Climate Smart Communities program, NYS Community Risk and Resiliency Act.										
Onondaga County-19	Climate Smart Community program	1, 2, 3, 5, 6	All Hazards	<p>Problem: Local municipalities need to take action to reduce greenhouse gas emissions and adapt to a changing climate.</p> <p>Solution: Onondaga County will encourage each municipality to participate in the Climate Smart program and become a Climate Smart Community. Where necessary, the county will work with the municipalities to achieve this status. Onondaga County will take the first steps in becoming a Climate Smart Community, which is outlined online (https://climatesmart.ny.gov/actions-certification/getting-started/). Once registered, the county will be able to review and select actions to implement. As they are implemented or completed, the county will upload the required information to the CSC portal and</p>	No	None	Within 3 months then ongoing	County Planning	Staff time	Greater climate resilience in the county.	County Operating Budget	High	LPR	PR



Table 9.1-9. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	Environmental and Historic Preservation (EHP) Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category	
				apply for certification. The benefits of becoming a Climate Smart Community includes: better scores on grant applications for some state funding; state-level recognition for community leadership; robust framework to organize local climate action and highlight priorities; streamlined access to resources, training, tools and expert guidance; and networking and sharing best practices with peers. Additionally, by implementing identified actions, the county experience additional benefits include, but not limited to: cost savings through greater efficiency; improved air quality from switching to cleaner energy; conservation of green spaces; and reduction of future flood risk through climate change adaptation strategies.											



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Notes:

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

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

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

Timeline:

The time required for completion of the project upon implementation

Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities

Critical Facility:

- Yes  - Critical Facility located in 1% floodplain





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Table 9.1-10. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Onondaga County-1	Abbey Road Drainage	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
Onondaga County-2 (former OC-10)	Tully Farms Road Bank Stabilization	0	1	1	1	1	1	0	1	1	1	1	0	1	1	11	High
Onondaga County-3	Onondaga County facility 500-year floodplain analysis	1	1	0	0	0	1	0	1	1	1	1	0	1	1	9	High
Onondaga County-4	Countywide Forest Management Plan	1	1	1	0	1	0	0	1	1	0	0	0	1	0	7	Medium
Onondaga County-5	3 Rivers and Cross Lake Water Chestnut Control	0	1	1	1	1	0	1	1	0	0	1	1	1	1	10	High
Onondaga County-6	Backup Generators and for Onondaga County Department of Transportation Facilities	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
Onondaga County-7 (former OC-10)	Tully Farms Road Culvert Replacement	0	1	1	1	1	1	1	0	1	0	1	0	0	0	8	Medium
Onondaga County-8 (former OC-13)	Promote the Flood Mitigation Task Force	1	1	0	1	1	0	1	0	1	1	1	0	1	1	10	High
Onondaga County-9 (former OC-15)	Run a parallel line of 24 miles of 54" water pipeline from Lake Ontario to the City of	0	1	0	0	1	1	0	1	1	1	0	0	1	1	8	Medium



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Table 9.1-10. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	Syracuse, built to seismic standards.																
Onondaga County-10 (former OC-16)	Southwestern Branch Pipeline Project. Install ~7 miles of 48" water supply main, built to seismic standards, to provide an alternate water supply to the City of Syracuse.	0	1	0	0	1	1	0	1	1	1	0	0	1	1	8	Medium
Onondaga County-11	Multi-agency coordination to address harmful algal blooms in Skaneateles Lake	1	0	1	1	1	1	0	1	1	1	0	1	1	1	11	High
Onondaga County-12	Implementation of invasive species mitigation strategies into county and local plans	1	1	1	1	1	1	0	1	1	1	0	1	1	1	12	High
Onondaga County-13	Mudboils Planning and Directional Drilling Project	0	1	1	1	1	1	1	1	1	1	0	1	1	1	12	High
Onondaga County-14	Livestock water management during droughts	0	0	1	1	0	1	0	1	0	0	0	0	0	0	4	Low
Onondaga County-15	Extension of Skaneateles Lake Intake 2 to a point deeper than the current location.	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High
Onondaga County-16	Construction of a filtration facility for the Skaneateles Lake Water Supply	1	0	1	1	1	1	0	1	1	1	1	1	1	1	12	High



Table 9.1-10. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Onondaga County-17	Booster chlorination for the Village of Jordan	1	0	0	1	1	1	0	1	1	1	1	0	1	1	10	High
Onondaga County-18	Incorporation of climate change projections	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
Onondaga County-19	Climate Smart Community program	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).

DRAFT



9.1.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.1.8 Staff and Local Stakeholder Involvement in Annex Development

Onondaga County followed the planning process described in Section 3 (Planning Process) in Volume I of this plan update. This annex was developed over the course of several months with input from many County departments, including: the Syracuse-Onondaga County Planning Agency. Ilana Cantrell and Megan Costa represented the community on the Onondaga County Hazard Mitigation Plan Planning Partnership, Steering Committee, and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

9.1.9 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the County that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using County hazard area extent and location is provided on the following page. This map indicates the location of the regulatory floodplain as well as identified critical facilities within the municipality.

Figure 9.1-1. Onondaga County Hazard Area Extent and Location Map

Hazard area extent and location maps have been generated for Onondaga County that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which Onondaga County has significant exposure. County-wide hazard maps are included in Section 5 of this plan. Hazard profiles are included within Section 5.4, Volume I of this Plan.



Action Worksheet			
Project Name:	Abbey Road Drainage		
Project Number:	Onondaga County-1		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm, Severe Winter Storm		
Description of the Problem:	Stormwater flow related erosion from nearby hillside affecting residential properties, right of way, and road base, in vicinity of the 3700-3900 block of Abbey Road in the Town of Onondaga. Intention is to mitigate roadway and drainage infrastructure impacts from large stormwater flows, reduce potential flooding threats to residences along Abbey Rd.		
Action or Project Intended for Implementation			
Description of the Solution:	Cross culvert/streamway realignment along Abbey Road and potentially upstream parcels in the Town of Onondaga. Project yet to be designed, in scoping phase.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	100-year event	Estimated Benefits (losses avoided):	Increased stability of road bed, thereby increasing lifespan of road and drainage structures. Avoiding roadway reconstruction and maintenance expenditures, and private property impacts.
Useful Life:	20 years	Goals Met:	1
Estimated Cost:	\$5 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	One year from securing funding	Potential Funding Sources:	HMGP, TIP, local dollars.
Responsible Organization:	Onondaga County Department of Transportation	Local Planning Mechanisms to be Used in Implementation if any:	Potential to partner with local SWCD to identify upstream mechanisms to reduce Stormwater flow upstream from hillsides and agricultural fields
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Full reconstruction of roadbed and drainage facilities	\$10 million	Likely too expensive; more time consuming
Upstream flow abatement only	\$1 million	Likely may not fully address problem	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Abbey Road Drainage	
Project Number:	Onondaga County-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Residential properties protected from stormwater flooding and erosion
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The County has the legal jurisdiction to undertake the project
Fiscal	0	HMGP, TIP, local dollars.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Severe Winter Storm
Timeline	0	
Agency Champion	1	Onondaga County Department of Transportation
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Tully Farms Road Bank Stabilization		
Project Number:	Onondaga County-2		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm, Severe Winter Storm		
Description of the Problem:	The existing stream channel is eroding the roadside embankment threatening the stability and alignment of the road edge.		
Action or Project Intended for Implementation			
Description of the Solution:	Armor the bank adjacent to energy flows and/or alter stream channel alignment. Project yet to be designed, in scoping phase.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	100-year event	Estimated Benefits (losses avoided):	Increased stability of road bed, thereby increasing lifespan of road and drainage structures. Avoiding roadway reconstruction and maintenance expenditures, and private property impacts.
Useful Life:	20 years	Goals Met:	1
Estimated Cost:	\$2 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	5 years
Estimated Time Required for Project Implementation:	One year from securing funding	Potential Funding Sources:	HMGP, TIP, local dollars
Responsible Organization:	Onondaga County Department of Transportation	Local Planning Mechanisms to be Used in Implementation if any:	Potential to partner with local SWCD to identify upstream mechanisms to reduce stormwater flow upstream from hillsides and agricultural fields
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Full reconstruction of roadbed and drainage facilities	\$10 million	Likely too expensive; more time consuming
	Upstream flow abatement only	\$1 million	Likely may not fully address problem
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Tully Farms Road Bank Stabilization	
Project Number:	Onondaga County-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Roadway protected from stormwater flooding and erosion
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The County has the legal jurisdiction to undertake the project
Fiscal	0	HMGP, TIP, local dollars.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Severe Winter Storm
Timeline	0	
Agency Champion	1	Onondaga County Department of Transportation
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Onondaga County Action Worksheet			
Project Name:	Onondaga County facility 500-year floodplain analysis		
Project Number:	Onondaga County-3		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	County owned critical facilities are located within the 500-year floodplain. This puts the facilities at risk to flooding and subsequent damage, leading to losses and structural damages, and impacts to operations.		
Action or Project Intended for Implementation			
Description of the Solution:	Onondaga County will analyze each county-owned critical facility for the following: <ul style="list-style-type: none"> Elevation of the facility Assess facility facilities and risks Identify mitigation measures as necessary Send prioritized mitigation measures to facility manager 		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	500-year flood event	Estimated Benefits (losses avoided):	Reduction in flood exposure
Useful Life:	5-20 years	Goals Met:	1, 2, 6
Estimated Cost:	\$1+ million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	10 years for all
Estimated Time Required for Project Implementation:	Ongoing until complete	Potential Funding Sources:	HMGP, PDM, WQIP
Responsible Organization:	OC WEP	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Elevate all critical facilities	\$50+ million	Not feasible
	Continue as budget allows	\$50+ million	Slow time to compliance
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Onondaga County facility 500-year floodplain analysis	
Project Number:	Onondaga County-3	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects critical functions of critical facilities
Property Protection	1	Facilities protected to the 500-year flood level
Cost-Effectiveness	0	
Technical	0	
Political	0	
Legal	1	The County has the legal authority to complete the project
Fiscal	0	Project will require grant funding assistance
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	0	
Agency Champion	1	OC WEP
Other Community Objectives	1	Protection of critical facilities
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Countywide Forest Management Plan		
Project Number:	Onondaga County-4		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm, Invasive Species		
Description of the Problem:	The County needs a Forest Management Plan to address the following needs: <ul style="list-style-type: none"> • Vulnerability analysis • Proactive tree removal • Guiding policies for management. 		
Action or Project Intended for Implementation			
Description of the Solution:	The County will create a Forest Management Plan to address the following areas: <ul style="list-style-type: none"> • Forest management policies • Invasive species: identification of invasives, prior invasive impact areas • Stream corridor plans • Public access • Protection of critical facilities within forests 		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Infrastructure stability
Useful Life:	20 years	Goals Met:	2, 3, 4
Estimated Cost:	\$5+ million	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	10 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	NYS DEC, County budget
Responsible Organization:	SWCD/Office of the Environment/DOTS/Utilities	Local Planning Mechanisms to be Used in Implementation if any:	Local Codes, Onondaga County policies.
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Release non-native species to combat invasive species	\$2 million	May create new invasive species
	Spray all trees	\$2 million	Ineffective, costly, negative environmental impacts
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Countywide Forest Management Plan	
Project Number:	Onondaga County-4	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Minimize erosion from spring melt and soil washout into waterbodies
Property Protection	1	Protection of forests from invasive species
Cost-Effectiveness	1	Timber improvement practices can increase revenue and prevent unnecessary costs to managers
Technical	0	
Political	1	Would support grant applications and secure additional funding.
Legal	0	Would require permission from individual entities.
Fiscal	0	Would require funding assistance.
Environmental	1	Protection of natural systems
Social	1	Better relationships with adjacent landowners and support for cohesive stretches of forest.
Administrative	0	
Multi-Hazard	1	Severe Storm, Invasive Species
Timeline	0	
Agency Champion	1	SWCD/Office of the Environment/DOTS/Utilities
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	



Onondaga County Action Worksheet			
Project Name:	Three Rivers and Cross Lake Water Chestnut Control		
Project Number:	Onondaga County-5		
Risk / Vulnerability			
Hazard(s) of Concern:	Invasive Species		
Description of the Problem:	Invasive water chestnut covers approximately 140 acres in this water system, impacting economic, environmental, and recreational uses.		
Action or Project Intended for Implementation			
Description of the Solution:	The County will purchase a "mower" (weed harvester) and use to remove water chestnuts in the impacted water systems. While this will not completely eliminate the risk of infestation, it will help alleviate the problem and help control the species from taking over the water bodies.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Reduction in Water Chestnut population, harmful algal blooms
Useful Life:	15 years	Goals Met:	4
Estimated Cost:	\$200,000	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	County budget, HMGP, PDM
Responsible Organization:	OC Health, SWCD, Lake Associations	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Hand removal	\$10,000	Not effective for size of impacted area
	Chemical Treatment	\$60,000	Less environmentally desirable.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	3 Rivers and Cross Lake Water Chestnut Control	
Project Number:	Onondaga County-5	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	There is public support for addressing water chestnut
Legal	0	May require NYS DEC permitting
Fiscal	1	
Environmental	1	Protects ecosystem from invasive species impacts
Social	0	
Administrative	0	
Multi-Hazard	0	Invasive species
Timeline	1	1 year
Agency Champion	1	OC Health, SWCD, Lake Associations
Other Community Objectives	1	Protection of natural assets
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Generators and for Onondaga County Department of Transportation Facilities		
Project Number:	Onondaga County-6		
Risk / Vulnerability			
Hazard(s) of Concern:	All Hazards		
Description of the Problem:	The North Area Maintenance Facility is a repurposed UPS facility and is where the snow plows are housed that services the entire north east quadrant of Onondaga County. At the moment we do not have a generator for this facility, while our other 3 facilities do. When we have a power outage we cannot perform emergency maintenance to plows that become damaged or are in need of repairs to return to servicing their routes. We have had several blackouts over the years that brings all operations in and around the facility to a halt. The facility location is 6230 East Molloy Road East Syracuse NY 13057.		
Action or Project Intended for Implementation			
Description of the Solution:	Purchasing a generator will allow the maintenance facility to continue operations even in the worst winter storms, which is a necessity to allow normal operations for businesses and residents. The proposed generator will be wired to restore all life safety and operational components of the building in an emergency event.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	500 year event	Estimated Benefits (losses avoided):	Continuity of service; potential as large facility to serve as evacuation/ sheltering location
Useful Life:	20 years	Goals Met:	1, 3, 6
Estimated Cost:	\$100,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	HMGP, local funds
Responsible Organization:	Onondaga County Department of Transportation	Local Planning Mechanisms to be Used in Implementation if any:	N/A
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Portable Generators	\$50,000	Added time, expense per event, decreased reliability
	Microgrid	\$250,000	High cost, power loss still possible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Generators and for Onondaga County Department of Transportation Facilities	
Project Number:	Onondaga County-6	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of DOT facilities
Property Protection	1	Project will protect
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Project requires financial support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	All Hazards
Timeline	1	
Agency Champion	1	Onondaga County Department of Transportation
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	