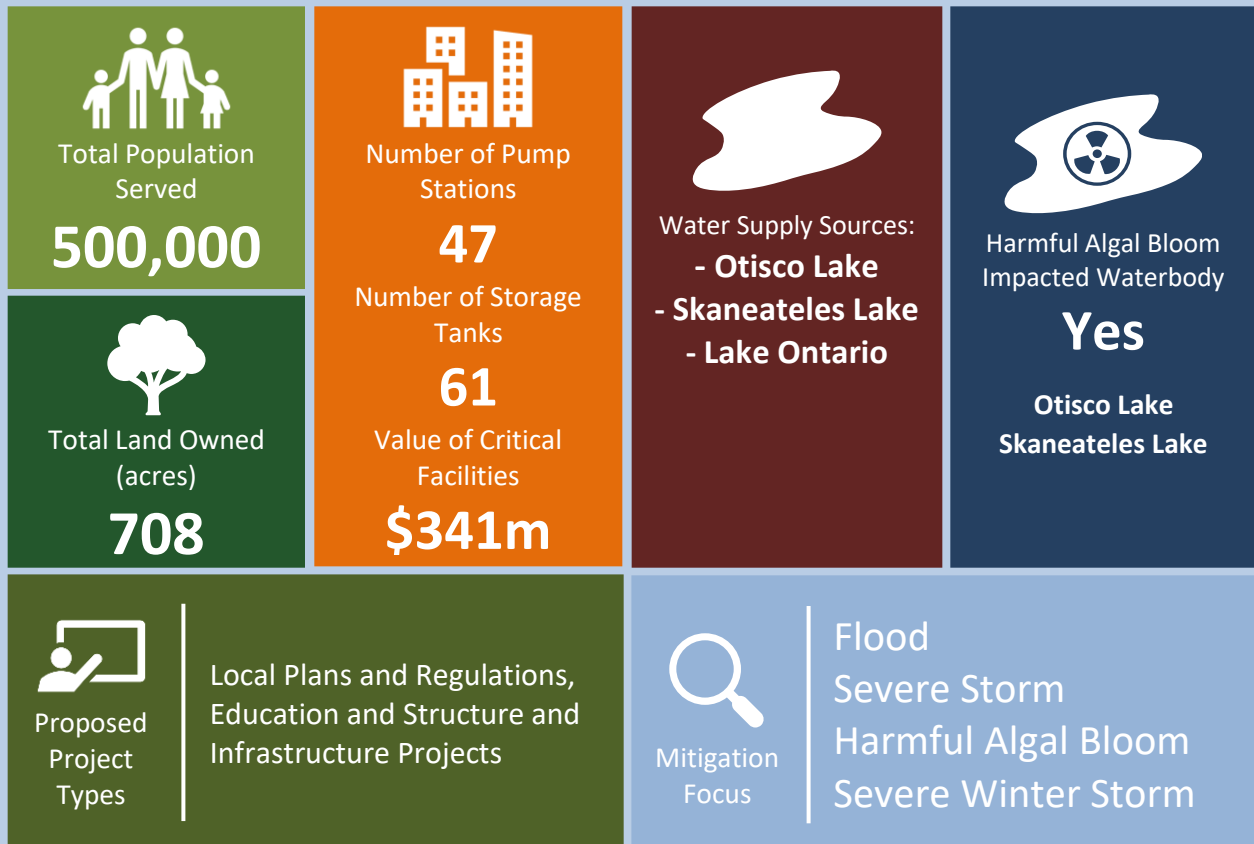




JURISDICTIONAL ANNEX | Onondaga County Water Authority





9.37 ONONDAGA COUNTY WATER AUTHORITY

This section presents the jurisdictional annex for the Onondaga County Water Authority. It includes resources and information to assist public and private sectors to reduce losses from future hazard events. This annex is not guidance of what to do when a disaster occurs. Rather, this annex concentrates on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. This annex includes a general overview of the Water Authority and who in the Water Authority participated in the planning process; an assessment of the Onondaga County Water Authority’s risk and vulnerability; the different capabilities utilized in the Water Authority; and an action plan that will be implemented to achieve a more resilient Water Authority.

9.37.1 Hazard Mitigation Planning Team

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

Primary Point of Contact	Alternate Point of Contact
Name: Geoffrey G. Miller, PE Title: Deputy Executive Director Phone Number: 315-455-7061 x3153 Address: P.O. Box 4949 Syracuse, NY 13221-4949 Email: gmiller@ocwa.org	Name: Kelly L. Caramanna Title: Safety Director Phone Number: 315-455-7061 x3169 Address: P.O. Box 4949 Syracuse, NY 13221-4949 Email: kcaramanna@ocwa.org
Floodplain Administrator	
Name: Kelly L. Caramanna Title: Safety Director Phone Number: 315-455-7061 x3169 Address: P.O. Box 4949 Syracuse, NY 13221-4949 Email: kcaramanna@ocwa.org	

9.37.2 District Profile

The Onondaga County Water Authority is a public benefit corporation created by the New York State Legislature and has the responsibility of supplying and selling potable water in Onondaga, Oswego, Madison Oneida, and Cayuga Counties. OCWA provides water on a retail basis to about 280,000 people, primarily in the suburban areas surrounding the City of Syracuse and another 220,000 people on a wholesale basis in the towns of Clay and Dewitt on a daily basis and the City of Syracuse on an as needed basis. The Authority currently has a staff of 180 employees. The Authority’s mode of operation is based on the sales of water to 103,000 residential, commercial, industrial and municipal wholesale customers.

The Water Authority operates a 20 MGD treatment plant in Marcellus, which filters and chlorinates an average of 18 MGD of Otisco Lake water. OCWA also operates the Lake Ontario water treatment plant in the Town of Oswego that is capable of delivering 50 MGD to Onondaga County and currently averages 20 MGD of potable filtered water. OCWA also can purchase up to 3 MGD from the Syracuse Water Department with current daily purchases averaging 1.2MGD.

The OCWA distribution system is comprised of 47 pumping stations, 61 storage tanks that distributes water via 2,140 miles of water main to roughly 103,000 meter accounts and 13,400 hydrants.

OCWA serves east to the Madison and Oneida County including the Villages of Chittenango, Canastota, Sylvan Beach and the Towns of Vienna, Lincoln, Lenox, Sullivan, Verona and Annville. Manlius and Pompey





are supplied from OCWA’s Salt Springs pump station, with small booster stations at Academy Hill and Pompey Pines.

Connections along Western Branch supply Van Buren, North Geddes, Radisson, West Phoenix, Lysander, and Clay. The major consumers are Westrock Solvay, LLC (aka Solvay Paper) at 2.2 MGD and Anheuser Busch at 1.8 MGD. Controllable connections on Central Branch supply Clay and Liverpool. The 6th North St. connection is capable of supplying Park St. and Wolf St. pump stations.

The Southern Branch supplies OCWA with City of Syracuse water (from Skaneateles Lake) to OCWA’s Nob Hill connections, which serve the Nedrow, Southwood and Jamesville areas.

Area Served

The OCWA services parts of Onondaga, Madison, Oneida, Oswego and Cayuga counties (see Area Served Map). Within Onondaga County, the OCWA serves the following jurisdictions (~1,879 sq. mi.):

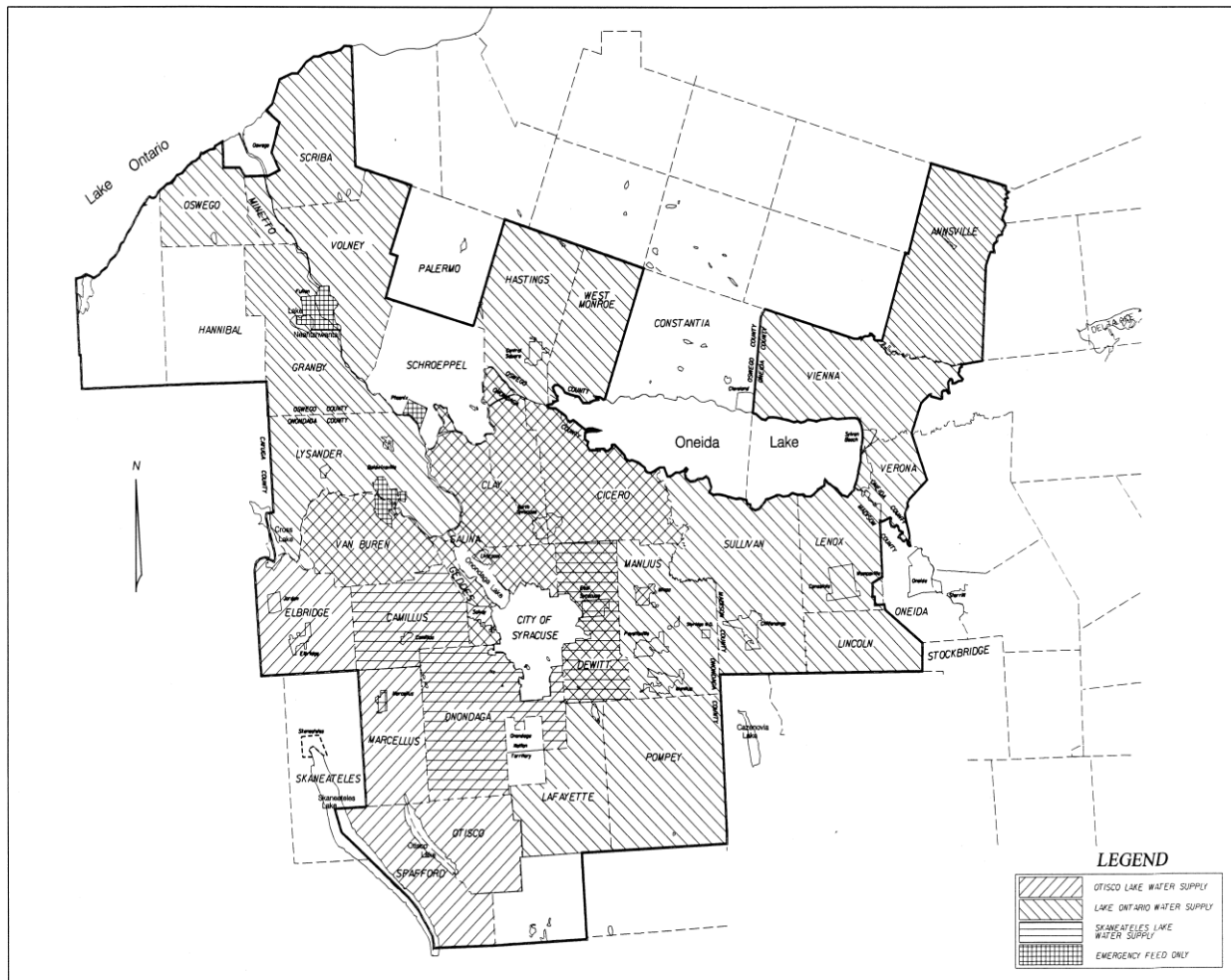
Table 9.37-1. Areas Served

TOWNS / CITIES	WATER SOURCE	VILLAGES	WATER SOURCE
Camillus	Otisco	Baldwinsville	Ontario ***
Cicero	Otisco / Ontario	Camillus	Otisco
Clay	Otisco / Ontario	E. Syracuse	Otisco / Ontario
Dewitt	Otisco / Ontario / Skaneateles	Fayetteville	Ontario
Elbridge	Ontario	Liverpool	Otisco / Ontario
Geddes	Otisco / Ontario / Skaneateles	Manlius	Ontario
LaFayette	Skaneateles	Marcellus	Otisco
Lysander	Ontario	Minoa	Otisco / Ontario
Manlius	Ontario / Skyridge Wells	N. Syracuse	Otisco / Ontario
Marcellus	Otisco	Solvay	Otisco
Onondaga	Otisco / Skaneateles		
Otisco	Otisco		
Pompey	Ontario		
Salina	Otisco / Ontario		
Spafford	Otisco		
Syracuse	Otisco / Ontario ***		
Van Buren	Otisco / Ontario		

*** Emergency Connection Only



Figure 9.37-1. Outline of Area Served



Population Served

The Onondaga County Water Authority serves 500,000 people primarily in the suburban areas surrounding the City of Syracuse.

Land Owned

The Onondaga County Water Authority owns approximately 708 acres.

Value of Critical Facilities

- Gross Value \$352,885,452
- Net Value (after depreciation) \$261,951,551

List of Critical Facilities, Infrastructure and Equipment

- Miles of Main: 2,140
- Hydrants in Service: 13,400
- Metered Connections: 102,600
 - Residential: 95,676





- Commercial: 6,712
- Industrial: 50
- Wholesale: 20
- Hydrant: 146
- Storage Tanks in Service: 61
- Storage Capacity (Million Gallons): 160
- Pump Stations in Service: 47

Growth/Development Trends

The Onondaga County Water Authority did not note any development that has occurred since 2013 or any planned major residential or commercial development, or major infrastructure development anticipated in the next five years.

Table 9.37-2. Growth and Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Location (address and/or Parcel ID)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2013 to present					
None					
Known or Anticipated Development in the Next Five (5) Years					
None					

** Only location-specific hazard zones or vulnerabilities identified.*

9.37.3 Hazard Event History Specific to the Onondaga County Water Authority

Onondaga County has a history of natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the county and its municipalities. The Onondaga County Water Authority’s history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Onondaga County. Table 9.37-3 provides details regarding municipal-specific loss and damages the Water Authority experienced during hazard events. Information provided in the table below is based on reference material or local sources. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.37-3. 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	Although the county was impacted, the Water Authority did not report damages.





Dates of Event	Event Type (Disaster Declaration if applicable)	Onondaga County Designated?	Summary of Event	Municipal Summary of Damages and Losses
			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.	
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 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.	Although the county was impacted, the Water Authority did not report damages.
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.	Although the county was impacted, the Water Authority did not report damages.

Notes:

- EM Emergency Declaration (FEMA)
- FEMA Federal Emergency Management Agency
- DR Major Disaster Declaration (FEMA)
- N/A Not applicable

9.37.4 Hazard Ranking and Jurisdiction-Specific Vulnerabilities

The hazard profiles in Section 5.0 (Risk Assessment) of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazards of greatest concern and risk to the Onondaga County Water Authority. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk Ranking

This section includes the Water Authority specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 of the 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 the Water Authority’s capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each participating town or village may have differing degrees of risk exposure and vulnerability compared to Onondaga County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to them. The table below summarizes the hazard





risk/vulnerability rankings of potential natural hazards for the Onondaga County Water Authority. The Onondaga County Water Authority has reviewed the county hazard risk/vulnerability risk ranking table as well as its individual results to reflect the relative risk of the hazards of concern to the Water Authority.

The Onondaga County Water Authority reviewed the calculated hazard rankings and agreed with them.

Table 9.37-4. Onondaga County Water Authority Calculated Hazard Ranking

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

Notes: 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

*The jurisdiction changed the initial ranking of this hazard based on event history, experience, and feedback from the jurisdiction

Critical Facilities Flood Risk

New York Department of Environmental Conservation (DEC) Statute 6 CRR-NY 502.4 sets forth floodplain management criteria for State projects located in flood hazard areas. The law states that no such projects related to critical facilities shall be undertaken in a Special Flood Hazard Area (SFHA) unless constructed according to specific mitigation specifications, including being raised 2’ above the Base Flood Elevation (BFE). This statute is outlined at <http://tinyurl.com/6-CRR-NY-502-4>. While all vulnerabilities should be assessed and documented, the State places a high priority on exposure to flooding. Critical facilities located in an SFHA, or having ever sustained previous flooding, must be protected to the 500-year flood event, or worst damage scenario. For those that do not meet this criteria, the jurisdiction must identify an action to achieve this level of protection (NYS DHSES 2017).

The table below identifies critical facilities the Water Authority has located in the 1-percent and 0.2-percent floodplain and presents Hazards United States (HAZUS) – Multi-Hazards (MH) estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 9.37-5. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage
None identified.					

Source: FEMA 2016, SOPA 2018

Identified Issues

The Water Authority has identified the following vulnerabilities:

- The Water Authority sustained damages during the Labor Day Storm of 1998 (FEMA DR-1230) that required repairs to various buildings both temporary and permanent, along with electrical repairs.
- Ontario Water Source – No generators/backup power, single transmission main from Lake Ontario to Onondaga County, aging water treatment plant in need of repairs, maintenance and improvements.
- Otisco Source – Water quality (algae), transmission mains are aging.





- Skaneateles Source – Water quality (algae) but higher concern due to No Water Treatment Plant, along with aging transmission mains.
- Cast Iron Mains in older parts of system including villages.
- Dead End Mains/ single supply main to certain areas.

9.37.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Program participation
- 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 the Onondaga County Water Authority.

Table 9.37-6. 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	Citation and Comments (Name of plan, explanation of authority, etc.)
Planning Capability				
Comprehensive Plan	N/A	-	-	-
Capital Improvements Plan	Yes - ongoing			Capital Improvements Plan
Floodplain Management / Basin Plan	N/A	-	-	-
Stormwater Management Plan	N/A	-	-	-
Open Space Plan	N/A	-	-	-
Stream Corridor Management Plan	N/A	-	-	-
Watershed Management or Protection Plan	Yes, 8/29/74			
Economic Development Plan	N/A	-	-	-
Comprehensive Emergency Management Plan	Yes continually updated			Comprehensive Emergency Management Plan
Emergency Operation Plan	Yes continually updated			Emergency Operation Plan
Evacuation Plan	Yes			In ERP
Post-Disaster Recovery Plan	Yes			In ERP
Transportation Plan	N/A	-	-	-
Strategic Recovery Planning Report	N/A	-	-	-
Climate Adaptation Plan	N/A	-	-	-
Resilience Plan	Yes	-	-	In ERP
Other Plans:	No	-	-	-
Regulatory Capability				



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	Citation and Comments (Name of plan, explanation of authority, etc.)
Building Code	N/A	-	-	-
Zoning Ordinance	N/A	-	-	-
Subdivision Ordinance	N/A	-	-	-
NFIP Flood Damage Prevention Ordinance	N/A	-	-	-
NFIP: Cumulative Substantial Damages	N/A	-	-	-
NFIP: Freeboard	N/A	-	-	State mandated BFE+2 for all construction, both residential and non-residential
Growth Management Ordinances	N/A	-	-	-
Site Plan Review Requirements	N/A	-	-	-
Stormwater Management Ordinance	N/A	-	-	-
Municipal Separate Storm Sewer System (MS4)	N/A	-	-	-
Natural Hazard Ordinance	N/A	-	-	-
Post-Disaster Recovery Ordinance	N/A	-	-	-
Real Estate Disclosure Requirement	N/A	-	-	-
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 the Onondaga County Water Authority.

Table 9.37-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	N/A	-
Mitigation Planning Committee	N/A	-
Environmental Board/Commission	N/A	-
Open Space Board/Committee	N/A	-
Economic Development Commission/Committee	N/A	-
Maintenance programs to reduce risk	Yes	Operations
Mutual aid agreements	Yes	NYWARN
Technical/Staffing Capability		
Planner(s) or engineer(s) with knowledge of land development and land management practices	No	-
Engineer(s) or professional(s) trained in construction	Yes	Engineering





Resources	Is this in place? (Yes or No)	Department/ Agency/Position
practices related to buildings and/or infrastructure		
Planners or engineers with an understanding of natural hazards	Yes	Engineering
NFIP Floodplain Administrator (FPA)	Yes	Safety Director
Surveyor(s)	Yes	Engineering
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Information Technology (GIS)
Scientist familiar with natural hazards	Yes	Water Quality
Warning systems/services	N/A	-
Emergency Manager	Yes	Safety Director
Grant writer(s)	Yes	Administrative
Staff with expertise or training in benefit/cost analysis	Yes	Accounting
Professionals trained in conducting damage assessments	Yes	Engineering/Operations

Fiscal Capability

The table below summarizes financial resources available to the Onondaga County Water Authority.

Table 9.37-8. Fiscal Capabilities

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

Program Participation

The table below summarizes participation in programs available to the Onondaga County Water Authority.

Table 9.37-9. Program Participation

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)





Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Storm Ready Certification	No	-	-
Public education program/outreach (through website, social media)	Yes	-	-
Other	No	-	-

Note:

- N/A Not applicable
- NP Not participating
- Unavailable

The classifications listed above relate to the Water Authority’s ability to provide effective services to lessen its vulnerability to the hazards identified. Criteria for classification credits for the Storm Ready program are outlined on the National Weather Service Storm Ready website at <https://www.weather.gov/stormready/communities>.

Self-Assessment of Capability

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

Table 9.37-10. Self-Assessment Capability for the Water Authority

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	
Water Authority political capability	N/A		
Water Authority resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities			X

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For the Onondaga County Water Authority to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day operations. As part of this planning effort, the Water Authority was surveyed to obtain a better understanding of their progress in plan integration. A summary is provided below. In addition, the Water Authority identified specific integration activities that will be incorporated into procedures, which is also indicated below.

Planning

Existing Integration

Onondaga County Hazard Mitigation Plan: The Onondaga County Water Authority supports the implementation, monitoring, maintenance, and updating of this Plan. The Water Authority supports county-wide initiatives identified in Section 9.1 of the county Annex.





Emergency Plans: The Water Authority's Comprehensive Emergency Management Plan and Post-Disaster Recovery Plan/Post-Disaster Redevelopment Plan/Strategic Recovery Plan refer to the Hazard Mitigation Plan. The Water Authority has a Continuity of Operations/Continuity of Government (COOP/COG) plan(s). The Water Authority continues to develop, enhance, and implement existing emergency plans.

Otisco Lake Level Operation Plan: The Water Authority has developed guidelines and takes the historical data and all the variables into account to assist decision making and to ensure proper operation of the Lake level system in the future. OCWA currently also relies on the expertise and experience of our Water Plant Manager in maintaining the proper lake level.

The Onondaga County Water Authority also has a Watershed or Stream Corridor Management Plan.

Opportunities for Future Integration

Updates to existing plans or new plans could include information on natural hazard risk and refer to the Countywide Hazard Mitigation Plan.

Operational and Administration

Existing Integration

Onondaga County Water Authority Board: The OCWA board is composed of civic-minded individuals with various business backgrounds. They oversee the progress of the water system together with the OCWA management staff to make sure a plentiful supply of water for communities and economic development.

Retrofitting/Removal of Structures from Hazard Prone Areas: Where appropriate, the Water Authority supports the retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. The Water Authority works to identify facilities that are viable candidates for each strategy based on cost-effectiveness. Implementation of these actions are based on available funding.

Mutual Aid Agreements: The Onondaga County Water Authority works to create/enhance/ maintain mutual aid agreements with the communities it services.

Otisco Lake Debris Maintenance: The Water Authority removes lake debris after major storm incidents. Ongoing maintenance typically removes branches and other small items. However after a major storm (for example the 2009 Labor Day storm) the OCWA deals with a larger volume of branches, sometimes whole trees, and an occasional boat or two.

The Onondaga County Water Authority does not have staff that are trained in or have job responsibilities that include hazard mitigation and natural hazard risk.

Opportunities for Future Integration

Staff could receive training regarding natural hazard mitigation.

Funding

Existing Integration

The Onondaga County Water Authority does not currently have funding dedicated to support hazard mitigation projects. The Capital Improvement Program is a twenty (20) year program that is updated annually to identify and prioritize improvements to OCWA's Water System. Like many utilities across the country, OCWA has an aging infrastructure in need of replacement and rehabilitation. Projects to address these issues are chosen based



on periodic master planning that looks at numerous factors, including infrastructure age, condition, and risk of failure, regulatory requirements, and changes in demand. These projects focus on rehabilitation, replacement, and upgrades to the water treatment, pumping and storage facilities, and major transmission mains within the distribution system. Projects range from several thousand to several million dollars. Over the past ten years, \$129 million has been reinvested in new and renovated tanks, mains, pump stations and treatment facilities.

Opportunities for Future Integration

The Water Authority could apply for grants and allocate funding from the Water Authority budget to support hazard mitigation projects.

Education and Outreach

Existing Integration

Water Education Program: The Water Authority operates a Water Education Program page (<https://www.ocwa.org/water-education-program/>) which is designed to provide educational information for children and teachers. The program includes information on water conservation.

Opportunities for Future Integration

The Water Authority could include additional information on natural hazards on the Water Authority website, focusing on the need to conserve water during times of drought.

9.37.6 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table indicates progress on the Water Authority'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.



Table 9.37-11. 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 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	
OCWA-1a	Where appropriate, support retrofitting of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.	Flood, Severe Storm		OCWA with support from jurisdictions where facility or structure is located	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-1b	Where appropriate, support purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for relocation based on cost-effectiveness versus retrofitting. Where relocation is determined to be a viable option, consider implementation of that action based on available funding.	Flood, Severe Storm		OCWA with support from jurisdictions where facility or structure is located	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-2	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	All Hazards		OCWA (through mitigation planning point of contacts)	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-3	Continue to develop, enhance, and implement existing emergency plans.	All Hazards		OCWA Emergency Management with support from local and county OEMs and SEMO	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-4	Create/enhance/ maintain mutual aid agreements with neighboring	All Hazards		OCWA Emergency	Complete	Cost	-	1. Discontinue 2. -
						Level of Protection	-	





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.
						Protection	Cost	
	communities.			Management with support from local and county OEMs and SEMO		Damages Avoided; Evidence of Success	-	3. Project has been completed.
OCWA-5	Support county-wide initiatives identified in Section 9.1 of the county Annex.	All Hazards		OCWA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-6	Create Inventory of OCWA Buildings – This will include risk and vulnerability information as applicable (typically including the elevation and construction type). However OCWA does not publish the majority of the information (mainly risk and vulnerability) for security purposes.	All Hazards		OCWA	Complete	Cost	-	1. Discontinue 2. Completed 3.
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-7	Otisco Lake Flood – Remove lake debris to address clean-up after a major storm incident. Ongoing maintenance typically removes branches and other small items. However after a major storm (for example the 2009 Labor Day storm) OCWA deals with a larger volume of branches, sometimes whole trees, and an occasional boat or two.	Flood, Severe Storm, Severe Winter Storm		OCWA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA-8	Otisco Lake Level Operation Plan to develop written guidelines and possibly a software application that takes the historical data and all the variables into account to assist decision making and to ensure proper operation of the Lake level system in the future. Currently OCWA is using historical lake level data (58 year history available) with the goal of staying on the historical curve throughout the year, keeping in mind that the lake should be full on June 1st of each year.	Flood, Severe Storm	Did not implement level indicator connected to SCADA	OCWA	Ongoing Capability	Cost	-	1. Discontinue 2. - 3. Ongoing capability
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	





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	
	OCWA currently also relies on the expertise and experience of our Water Plant Manager in maintaining the proper lake level in the absence of written guidelines.							
OCWA-9	Watershed Monitoring – Snow & Rain Levels. At the present, OCWA has a watershed monitoring program in place, but OCWA would like to expand the program to take more variables into account in the future. Currently factors including the number of people in the watershed, the number of farm animals, the amount of crop land, and pesticides, herbicides, fertilizers used are taken into account. In addition routine testing of residential septic systems around the lake is provided to ensure there is no septic effluent short-circuiting into the lake. OCWA would like to expand the program to take into account the more frequent and larger storms occurring (generally tied to global climate change by many experts, which may be the new “normal”). Accordingly OCWA plans to monitor other nutrients that could be making their way into the lake from further away than the contiguous properties on the lake shore. OCWA’s concern ties to overall water quality both during the short term event and the long term impact on overall water quality and the impact on OCWA water treatment plant operations.	Flood, Severe Storm, Severe Winter Storm		OCWA	In Progress	Cost	-	1. Include in 2019 HMP 2. Project is currently in progress; include in the 2019 HMP Update 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	
OCWA - 10	Extend Central Branch and City of Syracuse intake into Skaneateles Lake	Harmful Algal Bloom		OCWA & City of Syracuse	No progress	Cost	-	1. Include in 2019 HMP 2. Project is currently in progress; include in the 2019 HMP Update 3. -
						Level of Protection	-	
						Damages Avoided; Evidence of Success	-	





Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Onondaga County Water Authority 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:

- Town of Cicero: OCDOT Mud Mill Road Culvert Replacement – 200’ of 8” main to accommodate new bridge

Proposed Hazard Mitigation Initiatives for the Plan Update

The Onondaga County Water Authority participated in a mitigation action workshop on January 14, 2019 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 9.37-12 summarizes the comprehensive-range of specific mitigation initiatives the Onondaga County Water Authority 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 9.37-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.37-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of the Problem and Solution	Critical Facility?	EHP Issues?	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
OCWA-1	Backup Generators and Electrical Resiliency for Key Facilities	1, 6	Severe Storm, Severe Winter Storm	<p>Problem: Key facilities including Park St PS, Wolf St PS, Raw Water, Clearwater, and Ontario WTP are lacking a permanently installed generator, electrical service facilities at raw water, clearwater and Ontario WTP are 50 years old.</p> <p>Solution: Install permanent generators at the critical facilities for emergency power during failures. Improve reliability and resiliency of electric service at raw water, clearwater and Ontario WTP.</p>	Yes	None	2 years	OCWA	\$10,000,000	To fulfill continuity of operations needs	HMGP, OCWA Capital projects/budget funding	High	SIP	PP
OCWA-2	Extend Central Branch and City of Syracuse intake into Skaneateles Lake	1, 6	Harmful Algal Bloom	<p>Problem: The Central Branch and City of Syracuse intake is vulnerable to harmful algal bloom impacts due to being close to the shoreline.</p> <p>Solution: The Central Branch and City of Syracuse intake will be extended into deeper water away from the shoreline where Harmful Algal Bloom impacts will be limited.</p>	Yes	Permitting likely needed for extension into the Lake.	Short	OCWA & City of Syracuse	\$12 million	Potential loss of water service due to bacteria associated with Algal Bloom	OCWA, county and local budgets	High	SIP	PP
OCWA-3 (former OCWA-9)	Watershed Monitoring – Snow & Rain Levels.	1, 2, 3	Flood, Severe Storm, Severe Winter Storm	<p>Problem: At the present, OCWA has a watershed monitoring program in place, but OCWA would like to expand the program to take more variables into account in the future. Currently factors including the number of people in the watershed, the number of farm animals, the amount of crop land, and pesticides, herbicides, fertilizers used are taken into account. In addition routine testing of residential septic systems around the lake is provided to ensure</p>	No	None	Ongoing	OCWA	Medium \$10,000 to \$100,000	High (> \$100,000)	OCWA, county and local budgets	High	LPR	PR





Table 9.37-12. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of the Problem and Solution	Critical Facility?	EHP Issues?	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
				<p>there is no septic effluent short-circuiting into the lake.</p> <p>Solution: OCWA would like to expand the program to take into account the more frequent and larger storms occurring (generally tied to global climate change by many experts, which may be the new “normal”). Accordingly OCWA plans to monitor other nutrients that could be making their way into the lake from further away than the contiguous properties on the lake shore. OCWA’s concern ties to overall water quality both during the short term event and the long term impact on overall water quality and the impact on OCWA water treatment plant operations.</p>										

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

Acronyms and Abbreviations:

- CAV Water Authority Assistance Visit
- CRS Water Authority 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

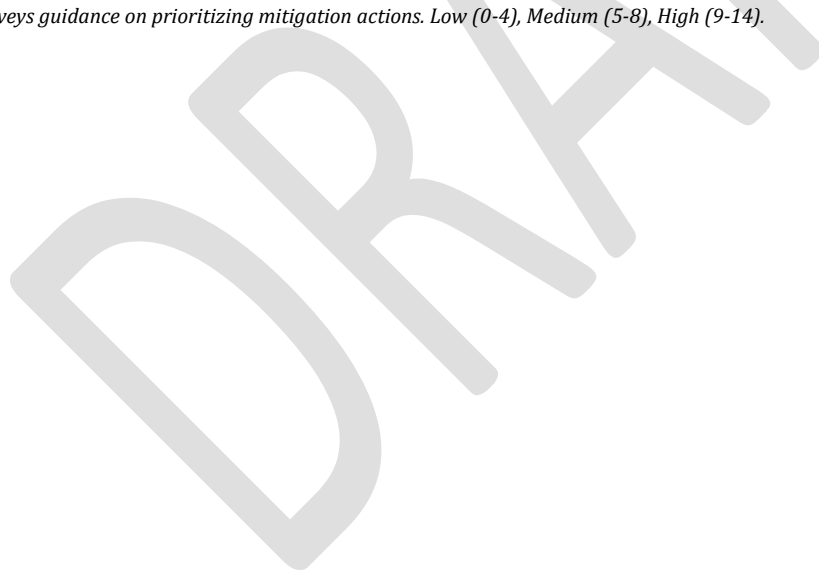
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Table 9.37-13. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Water Authority	Total	High / Medium / Low
OCWA-1	Backup Generators and Electrical Resiliency for Key Facilities	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13	High
OCWA-2	Extend Central Branch and City of Syracuse intake into Skaneateles Lake	1	0	1	1	1	1	1	0	1	1	0	1	1	1	11	High
OCWA-3	Watershed Monitoring – Snow & Rain Levels, Water Quality of Otisco Lake	1	0	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).





9.37.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.37.8 Staff and Local Stakeholder Involvement in Annex Development

The Onondaga County Water Authority 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 Water Authority departments, including: the Deputy Executive Director and Safety Director. The Safety Director represented the Water Authority 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 Water Authority's planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meetings).

9.37.9 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Onondaga County Water Authority that illustrate the probable areas impacted within the Water Authority. 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 the Onondaga County Water Authority has significant exposure. A map of the Onondaga County Water Authority 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 Water Authority.



Action Worksheet			
Project Name:	Backup Generators and Electrical Resiliency for Key Facilities		
Project Number:	OCWA-1		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe storm, Severe Winter Storm		
Description of the Problem:	Key facilities including Park St PS, Wolf St PS, Raw Water, Clearwater, and Ontario WTP are lacking a permanently installed generator, electrical service facilities at raw water, clearwater and Ontario WTP are 50 years old.		
Action or Project Intended for Implementation			
Description of the Solution:	Install permanent generators at the critical facilities for emergency power during failures. Improve reliability and resiliency of electric service at raw water, clearwater and Ontario WTP.		
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	Estimated Benefits (losses avoided):	To fulfill continuity of operation's needs.
Useful Life:	20 years	Goals Met:	1, 6
Estimated Cost:	\$ 10,000,000	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 OCWA Capital projects / budget funding
Responsible Organization:	OCWA	Local Planning Mechanisms to be Used in Implementation if any:	none
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Portable generators	\$\$	Time to find and install generators
	Water Tankers	?	Limited resources
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 Electrical Resiliency for Key Facilities	
Project Number:	OCWA-1	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Continuity of operations maintained
Property Protection	1	Facilities protected against power loss
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	The OCWA has the legal authority to complete the project
Fiscal	1	
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Storm, Severe Winter Storm
Timeline	1	
Agency Champion	1	OCWA
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Extend Central Branch and City of Syracuse intake into Skaneateles Lake		
Project Number:	OCWA-2		
Risk / Vulnerability			
Hazard(s) of Concern:	Harmful Algal Bloom		
Description of the Problem:	The Central Branch and City of Syracuse intake is vulnerable to harmful algal bloom impacts due to being close to the shoreline. The algal blooms in the Lake are impacting the water supply for customers in Southwood.		
Action or Project Intended for Implementation			
Description of the Solution:	The Central Branch and City of Syracuse intake will be extended into deeper water away from the shoreline where Harmful Algal Bloom impacts will be limited.		
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:	Central Branch \$20 mill Intake \$12 mill	Estimated Benefits (losses avoided):	Potential loss of water service due to bacteria associated with Algal Bloom
Useful Life:	50 years	Goals Met:	1, 6
Estimated Cost:	12 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Less than 5 years
Estimated Time Required for Project Implementation:	Less than 5 years	Potential Funding Sources:	HMGP, PDM, Grants, OCWA, county and local budgets
Responsible Organization:	OCWA and City of Syracuse	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	Current problem continues
	Alt 1- Install a water filtration system.	\$60 - 70 Mil. (1999 cost estimate). Approximately \$100 million in 2018 dollars.	Effective in controlling cyanobacteria however not effective in large water bodies. Costs are high as multiple applications might be needed per year.
	Alt 2 - Apply algaecide to Skaneateles Lake	\$25,000 - \$40,000 per application	Effective in controlling cyanobacteria. Feasible alternative but costs are high as multiple applications might be needed per year.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Extend Central Branch and City of Syracuse intake into Skaneateles Lake	
Project Number:	OCWA-2	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	0	No impact on property
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	1	
Environmental	0	Permitting likely needed for extension into the Lake.
Social	1	
Administrative	1	
Multi-Hazard	0	Only Harmful Algal Bloom
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Watershed Monitoring – Snow & Rain Levels, Water Quality of Otisco Lake		
Project Number:	OCWA-3		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm, Severe Winter Storm, Harmful Algal Bloom		
Description of the Problem:	At the present, OCWA has a watershed monitoring program in place, but OCWA would like to expand the program to take more variables into account in the future. Currently factors including the number of people in the watershed, the number of farm animals, the amount of crop land, and pesticides, herbicides, fertilizers used are taken into account. In addition, routine testing of residential septic systems around the lake is provided to ensure there is no septic effluent short-circuiting into the lake.		
Action or Project Intended for Implementation			
Description of the Solution:	OCWA will expand the watershed monitoring program to take into account the more frequent and larger storms occurring (generally tied to global climate change by many experts, which may be the new “normal”). Accordingly, OCWA plans to monitor other nutrients that could be making their way into the lake from further away than the contiguous properties on the lake shore. OCWA’s concern ties to overall water quality both during the short-term event and the long-term impact on overall water quality and the impact on OCWA water treatment plant operations.		
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:	NA – Increase the margin of safety for high quality potable water by reducing the potential for algal bloom development and high turbidity in the drinking water.	Estimated Benefits (losses avoided):	High (> \$100,000)
Useful Life:	50+ years	Goals Met:	Goals 1, 2, 3
Estimated Cost:	Medium \$10,000 to \$100,000	Mitigation Action Type:	Local Plans and Regulations
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 6 months of receiving funds
Estimated Time Required for Project Implementation:	Ongoing	Potential Funding Sources:	OCWA, county and local budgets
Responsible Organization:	OCWA	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	Current problem continues
	Increase sample monitoring of lake water and properties around lake	\$100,000	Increase staff and add contractors
	Added water treatment plant process	\$20 mill	Engineering Consultant
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Watershed Monitoring – Snow & Rain Levels, Water Quality of Otisco Lake	
Project Number:	OCWA-3	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Maintains vital water sources
Property Protection	0	No impact on property protection
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	1	
Environmental	1	Positive environmental impact likely as water quality issues will be identified and hopefully addressed.
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm, Severe Winter Storm
Timeline	1	
Agency Champion	1	
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	