

**9.37 SPECIAL PURPOSE DISTRICT – ONONDAGA COUNTY WATER AUTHORITY**

This section presents the jurisdictional annex for the Onondaga County Water Authority.

**A.) HAZARD MITIGATION PLAN POINT OF CONTACT**

Primary Point of Contact	Alternate Point of Contact
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**B.) 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, and parts of 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 168 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 also purchase up to 3 MGD from the Syracuse Water Department with current daily purchases averaging 1.2 MGD.

The OCWA distribution system is comprised of 47 pumping stations, 61 storage tanks that distributes water via 2,200 miles of water main to roughly 101,590 metered accounts and 13,200 hydrants.

OCWA serves east to the Madison and Oneida County including the Villages of Chittenango, Canastota and Sylvan Beach and the Towns of Vienna, Lincoln, Lenox, Sullivan, Verona and Annsville. 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 6<sup>th</sup> 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 Southwood, Nedrow and Jamesville areas.

**SECTION 9.37: ONONDAGA COUNTY WATER AUTHORITY**

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

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

**2.) Population Served:** ~ 500,000 people combined retail and wholesale.

**3.) Land Area Owned:** ~708 acres

**4.) List of Critical Facilities, Infrastructure and Equipment:** Table 1 provides an inventory of all OCWA critical facilities, infrastructure and equipment. Those critical facilities within Onondaga County are highlighted in yellow. Further, those Onondaga County OCWA facilities considered vulnerable to either high wind activity or flooding (due to heavy rains, excessive snow melt or dam failure) are identified.

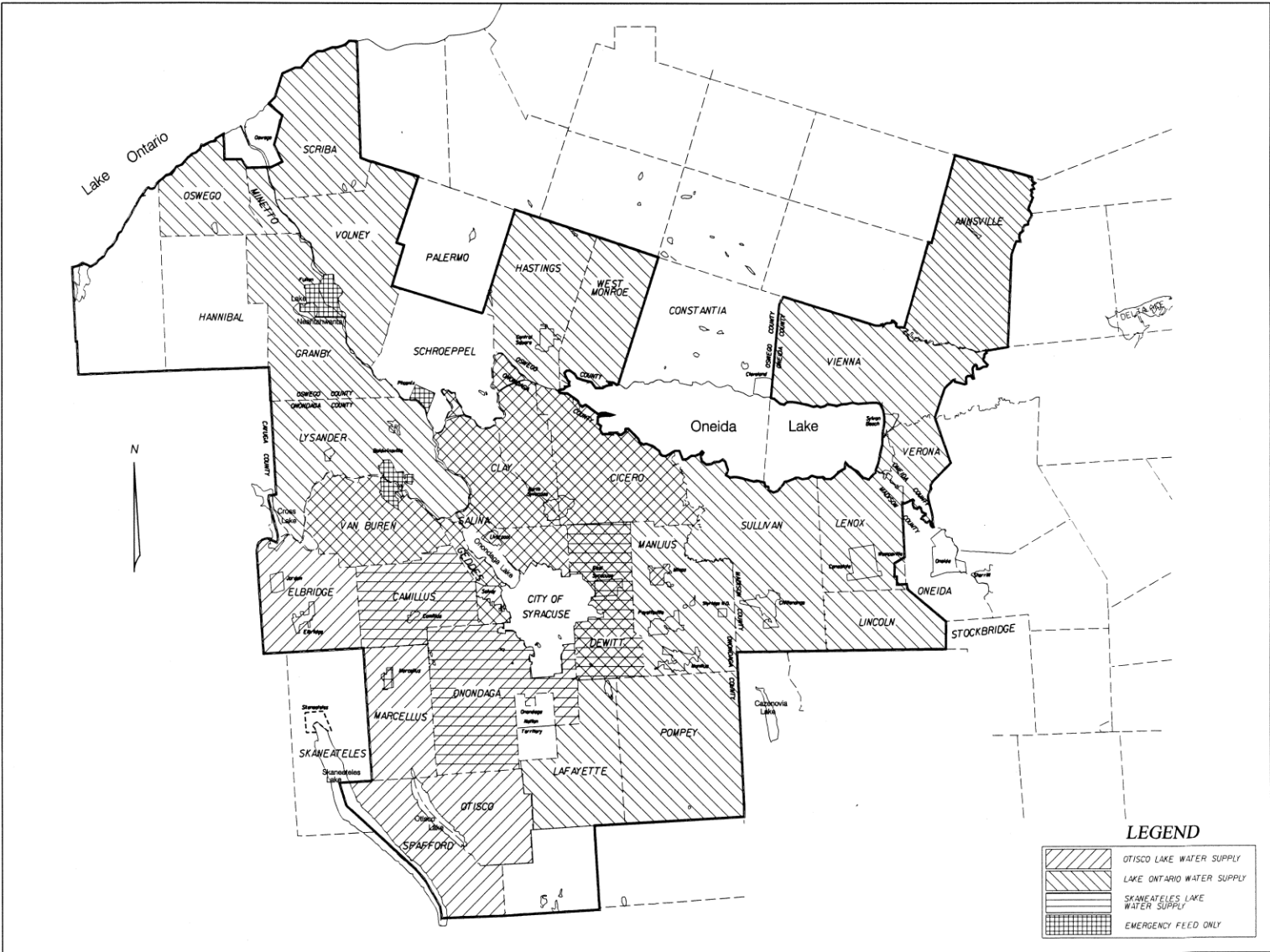
Miles of Main		2,200
Hydrants in Service		13,200
Metered Connections		102,600
Residential	94,706	
Commercial	6,740	
Industrial	50	
Wholesale	17	
Hydrant	77	
Storage Tanks In Service		61
Storage Capacity (Million Gallons)		160
Pump Stations In Service		47

**5.) Value of Critical Facilities, Infrastructure and Equipment:** Gross Value \$341,290,168  
(does not include MWB facilities added 1/1/2017)

Net Value (after depreciation) \$249,634,849

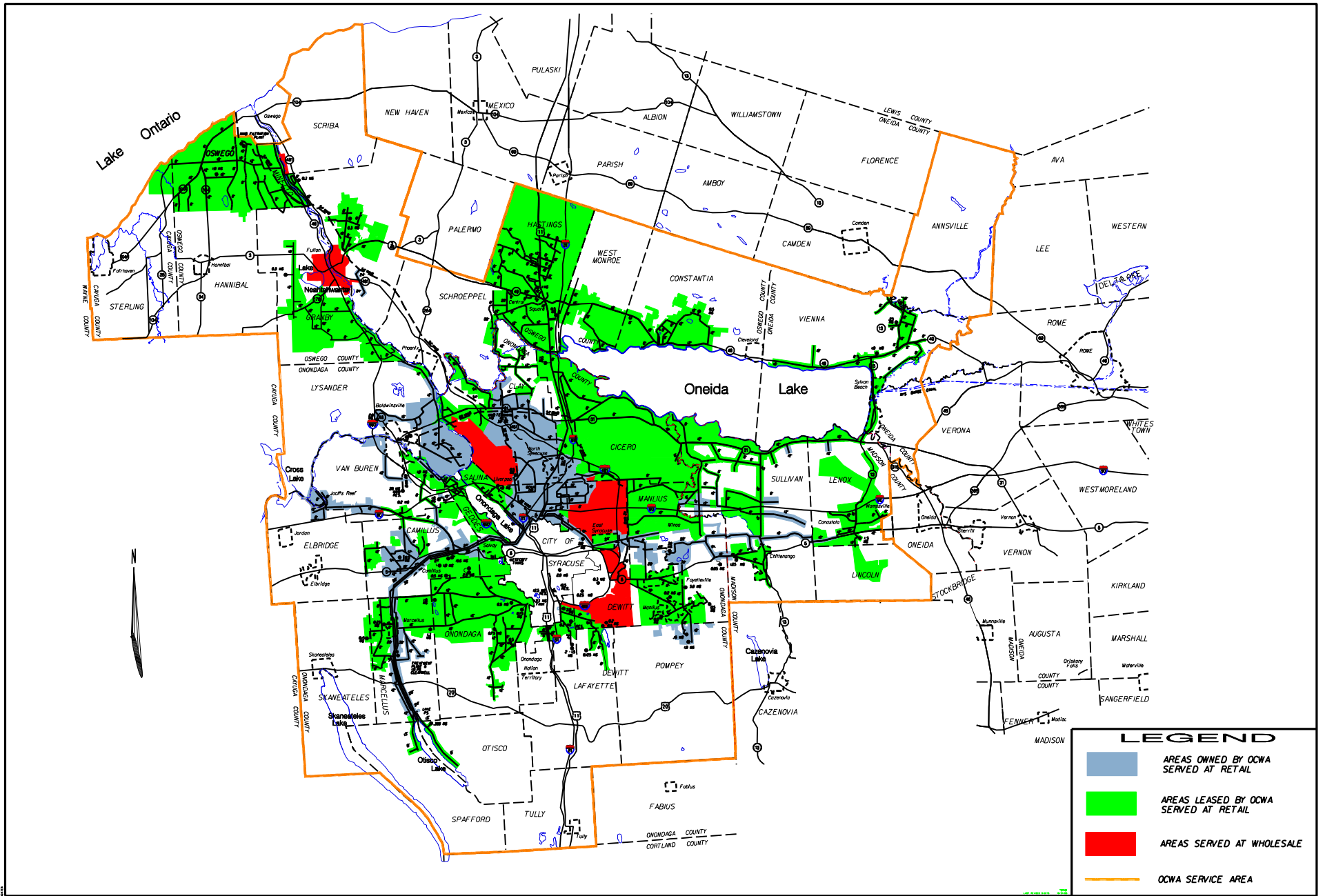






C.) OUTLINE OF AREA SERVED



Source: Onondaga County Water Authority





LEGEND	
	AREAS OWNED BY OCWA SERVED AT RETAIL
	AREAS LEASED BY OCWA SERVED AT RETAIL
	AREAS SERVED AT WHOLESALE
	OCWA SERVICE AREA

**D.) CURRENT AND ANTICIPATED SERVICE TRENDS**

Current system growth has been running at a rate of 1% per year. Additional customer growth has been through the acquisition of existing water systems and the construction of new municipal systems that are subsequently leased to the Authority for operation and maintenance purposes. This trend is slowing, as the number of systems that can be practically served by the Authority has diminished greatly over the past 15 years.

**E.) NATURAL HAZARD EVENT HISTORY SPECIFIC TO THE DISTRICT SERVICE AREA**

Please refer to the Previous Occurrences and Losses section within the hazard profiles located in Section 5.4, Volume I.

**F.) NATURAL HAZARD RISK RANKING**

Rank #	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a,c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
5	Earthquake	\$1,141,199,484	Rare	17	Low
3	Flood	\$1,914,229,000	Frequent	30	Medium
4	Ground Failure	Not available	Frequent	18	Low
1	Severe Storm	< \$500	Frequent	48	High
2	Severe Winter Storm	\$2,007,150,900	Frequent	48	High

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. High = Total hazard priority risk ranking score of 40 and above  
Medium = Total hazard priority risk ranking of 20 - 39  
Low = Total hazard risk ranking below 20
- c. The valuation of general building stock and loss estimates determined in Onondaga County were based on the default general building stock database provided in HAZUS-MH MR3 (RSMMeans 2006).
- d. Severe storm and severe winter storm hazard 500-year MRP loss estimate is structural value only; does not include the value of contents. For severe winter storm, the loss estimate is 5% of total general building stock value.
- e. Loss estimates for both structure and contents (500-year MRP for the flood hazard and 2,500-year MRP for the earthquake hazard).
- f. Approximately 47% of the County's general building stock is located within the landslide hazard area.
- g. Potential losses for severe storm are underestimated by HAZUS.

**G.) EXISTING APPLICABLE HAZARD MITIGATION CODES, ORDINANCES OR POLICIES**

**H.) EXISTING APPLICABLE NATURAL HAZARDS MITIGATION ASSOCIATED PLANS AND/OR DOCUMENTS**

**I.) DISTRICT MITIGATION RELATED CLASSIFICATIONS**

Not applicable.

## J.) PROPOSED HAZARD MITIGATION INITIATIVES

Initiative #	Mitigation Initiative	Applies to New or Existing Structures*	Hazard(s) Mitigated	Goals / Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
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.	Existing	Flood, Severe Storm	1-1, 1-2, 1-6; 2-5, 2-6; 3-2, 3-5, 6-1	OCWA with support from jurisdictions where facility or structure is located	High	FEMA Mitigation Grant Programs and OCWA and/or local jurisdiction match	Long-term DOF
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.	Existing	Flood, Severe Storm	1-1, 1-2, 1-6; 2-5, 2-6; 3-2, 3-5; 6-1	OCWA with support from jurisdictions where facility or structure is located	High	FEMA Mitigation Grant Programs and OCWA and/or local jurisdiction match	Long-term DOF
OCWA-2	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New & Existing	All Hazards	All Goals and Objectives	OCWA (through mitigation planning point of contacts)	Low	Local Budget, possibly FEMA Mitigation Grant Funding for 5-year update	Ongoing
OCWA-3	Continue to develop, enhance, and implement existing emergency plans.	New & Existing	All Hazards	1-4; 5-5; Goal 6 – All Objectives	OCWA Emergency Management with support from local and County OEMs and SEMO	Low - Medium	Local Budget	Ongoing
OCWA-4	Create/enhance/ maintain mutual aid agreements with neighboring communities.	New & Existing	All Hazards	3-3; 5-2, 5-3, 5-5, 5-6; 6-5, 6-6	OCWA Emergency Management with support from local	Low - Medium	OCWA, County and local budgets	Ongoing

**SECTION 9.37: ONONDAGA COUNTY WATER AUTHORITY**

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					and County OEMs and SEMO			
OCWA-5	Support County-wide initiatives identified in Section 9.1 of the County Annex.	New & Existing	All Hazards	All Goals and Objectives	OCWA	Low – High (depending on specific initiative)	Dependent on specific initiative	Ongoing
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.	New	All Hazards	1-2, 1-7; 2-3; 3-2, 3-4, 3-5, 3-6; 6-1, 6-3, 6-5	OCWA	Low	OCWA, County and local budgets	Ongoing
OCWA-7	Otisco Lake Flood – Remove lake debris at the dam 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.	Existing	Flood, Severe Storm, Severe Winter Storm	1-2; 3-2, 3-4, 3-5; 4-1, 4-2; 5-1, 5-2, 5-3, 5-5; 6-1, 6-5, 6-6	OCWA	High	OCWA, County and local budgets	Ongoing
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 (50 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 1 <sup>st</sup> of each year. OCWA currently also	New & Existing	Flood, Severe Storm	1-2, 1-4, 1-5, 1-7; 2-3; 3-2, 3-4, 3-5; 4-1, 4-4; 5-1; 6-3, 6-5	OCWA	High	OCWA, County and local budgets	Ongoing



**SECTION 9.37: ONONDAGA COUNTY WATER AUTHORITY**

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	relies on the instinct 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 would like 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.	New & Existing	Flood, Severe Storm, Severe Winter Storm	1-2; 2-3; 3-2, 3-4; 4-2; 6-1,6-3, 6-5	OCWA	Medium	OCWA, County and local budgets	Ongoing

Notes: DOF = Depending on Funding. FEMA = Federal Emergency Management Agency. Long = 5 years or greater. N/A = Not applicable. Short = 1 to 5 years. TBD = To be determined

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure?





**G.) ANALYSIS OF MITIGATION ACTIONS**

This table summarizes the participant’s mitigation actions by hazard of concern and the six mitigation types to illustrate that the Onondaga County Water Authority has selected a comprehensive range of actions/projects.

Hazard of Concern	Mitigation Type				
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services
Earthquake	OCWA-2, OCWA-5, OCWA-6	OCWA-2, OCWA-5	OCWA-2, OCWA-5	OCWA-2, OCWA-5	OCWA-2, OCWA-3, OCWA-4, OCWA-5, OCWA-6
Flooding (riverine, flash, coastal and urban flooding)	OCWA-2, OCWA-4, OCWA-5, OCWA-6, OCWA-8, OCWA-9	OCWA-1, OCWA-2, OCWA-5	OCWA-1, OCWA-2, OCWA-5	OCWA-2, OCWA-5, OCWA-7, OCWA-9	OCWA-2, OCWA-3, OCWA-4, OCWA-5, OCWA-6, OCWA-8, OCWA-9
Ground Failure	OCWA-2, OCWA-5, OCWA-6	OCWA-2, OCWA-5	OCWA-2, OCWA-5	OCWA-2, OCWA-5	OCWA-2, OCWA-3, OCWA-4, OCWA-5, OCWA-6
Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)	OCWA-2, OCWA-4, OCWA-5, OCWA-6, OCWA-8, OCWA-9	OCWA-1, OCWA-2, OCWA-5	OCWA-1, OCWA-2, OCWA-5	OCWA-2, OCWA-5, OCWA-7, OCWA-9	OCWA-2, OCWA-3, OCWA-4, OCWA-5, OCWA-6, OCWA-8, OCWA-9
Severe Winter Storm (heavy snow, blizzards, ice storms)	OCWA-2, OCWA-5, OCWA-6, OCWA-9	OCWA-2, OCWA-5	OCWA-2, OCWA-5	OCWA-2, OCWA-5, OCWA-7, OCWA-9	OCWA-2, OCWA-3, OCWA-4, OCWA-5, OCWA-6, OCWA-9

Notes:

1. **Prevention:** Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
2. **Property Protection:** 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.
3. **Public Education and Awareness:** 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 school-age and adult education programs.
4. **Natural Resource Protection:** 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.
5. **Emergency Services:** 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.
6. **Structural Projects:** 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.



**K.) PRIORITAZATION OF MITIGATION INITIATIVES**

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits equal or exceed Costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can Project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
OCWA-1a	8	H	H	Y	Y	N	M-H*
OCWA-1b	8	H	H	Y	Y	N	M-H*
OCWA-2	38	M	M	Y	N (Yes for 5 year update)	Y	H
OCWA-3	8	M	L	Y	N	Y	H
OCWA-4	7	M	L	Y	N	Y	H
OCWA-5	38	M-H	L-M	Y	Dependant on specific initiative	Dependant on specific initiative	M-H (dependant )
OCWA-6	10	M	L	Y	N	Y	H (ongoing)
OCWA-7	13	M-H	H	Y	N	Y	H (ongoing)
OCWA-8	13	M-H	H	Y	Y	Y	H (ongoing)
OCWA-9	8	M-H	H	Y	Y	Y	H (ongoing)

Notes: H = High. L = Low. M = Medium. N = No. N/A = Not applicable. Y = Yes.

\* This initiative has a “Medium” priority based on the prioritization scheme used in this planning process (implementation dependent on grant funding), however it is recognized that addressing repetitive and severe repetitive loss properties is considered a high priority by FEMA and SEMO (as expressed in the State HMP), and thus shall be considered a “High” priority for all participants in this planning process.

**Explanation of Priorities:**

- **High Priority:** A project that meets multiple plan objectives, benefits exceeds cost, has funding secured under existing programs or authorizations, or is grant eligible, and can be completed in 1 to 5 years (i.e., short term project) once project is funded.
- **Medium Priority:** A project that meets at least 1 plan objective, benefits exceeds costs, funding has not been secured and would require a special funding authorization under existing programs, grant eligibility is questionable, and can be completed in 1 to 5 years once project is funded.
- **Low Priority:** Any project that will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is considered long term (5 to 10 years).

Prioritization of initiatives was based on above definitions: Yes

Prioritization of initiatives was based on parameters other than stated above: Not applicable.

**L.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY**

None identified at this time.

**M.) ADDITIONAL COMMENTS**

Hazard area extent and location maps have been generated for the Onondaga County Water Authority and Onondaga County to illustrate the probable areas impacted. 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. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.