

### *10.2.13 Village of Greenwood Lake*

This section presents the jurisdictional annex for the Village of Greenwood Lake.

#### 10.2.13.1 Contacts

Primary and secondary contacts regarding this plan are identified as follows:

- Jesse Dwyer – Mayor, Village of Greenwood Lake  
Church Street, P.O. Box 7  
Greenwood Lake, NY 10925  
(845) 477-9215
- Jeff Feagles – Commissioner of Public Works, Town of Warwick  
(845) 986-3358

#### 10.2.13.2 Municipal Profile

##### *Population*

According to the U.S. Census, the 2010 population for the Village of Greenwood Lake was three thousand, one hundred fifty-four (3,154) persons. The population has decreased by approximately 7.53% from the 2000 census population of three thousand, four hundred eleven (3,411).

##### *Location*

The Village of Greenwood Lake is located at the northern end of Greenwood Lake in the southern portion of the County, approximately 2.1-miles northeast of the New York-New Jersey border. It is encompassed by the Town of Warwick, which also includes the Villages of Warwick and Florida.

##### *Brief History*

Originally a Munsee Tribe village, Greenwood Lake was settled by European farmers in the 1700's. In 1837, a dam was constructed which greatly increased the size of the lake and the area soon became a popular tourist attraction. The Village became incorporated in 1924. Despite a downward population trend, the Village maintains an affluent community.

##### *Governing Body*

The Village is served by the Mayor and a four (4) member Board of Trustees. As the administrative head, the Village Mayor runs the day-to-day operations.

### *Future Growth*

Little development has occurred within the Village in the past five (5) years. The small footprint of the Village combined with population decline has stagnated new construction. Instead, the focus of the Village is rehabilitative in nature.

### 10.2.13.3 Hazard Vulnerabilities

#### *Overall Vulnerability*

Vulnerability was subjectively assigned below using the categories high, moderate, and low. The assessments were based on the Calculated Priority Risk Index (CPRI) values, probability, and severity.

Table 10.2.13a denotes the identified hazard, vulnerability assessment, mitigation priority, and the CPRI score.

<b>Table 10.2.13a: Hazard Vulnerability by Event</b>			
<b>Jurisdiction</b>	<b>Vulnerability</b>	<b>Mitigation Priority?</b>	<b>CPRI Score</b>
Earthquake	Low	No	1.55
Wildfires	Moderate	No	2.30
Landslide	Low	No	2.30
Extreme Temperatures	Moderate	Yes	2.40
Drought	Moderate	No	2.50
Hurricane/Coastal Storm	Moderate to High	Yes	2.55
Winter Storms/Ice Storm	Moderate	Yes	2.55
Severe Storm/Thunderstorm	Moderate	No	2.65
Flood	Moderate	Yes	2.75
Dam Failure	High	Yes	2.80

#### *Critical Facilities*

A list of community Critical Facilities was generated to aid in mitigation planning. The following table summarizes the number of these facilities within the Village of Greenwood Lake which may be impacted by any of the previously noted hazards.

Jurisdiction	Communications Infrastructure	Electrical Power Systems	Gas and Oil Facilities	Banking and Finance Institution	Transportation Network	Water Supply Systems	Government Services	Emergency Services	Educational	Shelter and Evacuation Facilities	Business	Nursing Home/Senior Care
Village of Greenwood Lake	3	-	-	1	-	1*	4	3	2	-	4	-
<b>Notes:</b> (*) Awosting Dam (controls Greenwood Lake levels) not included because the physical address is located within the state of New Jersey.												

Critical facilities were identified by the Village as meeting this definition: “Any structure(s) and/or infrastructure within a community whose incapacity or destruction would:

- Have a debilitating impact on the defense or economic security of that community.
- Significantly hinder a community’s ability to recover following a disaster.”

Discretion was left up to the participating jurisdiction to select these facilities. This information was used to identify potential improvements to existing Critical Facilities.

Locations of select CFI are noted in the table below.

Facility Name	Address (Street, Town/Village/Hamlet)
<b>Emergency Services</b>	
Greenwood Lake Joint Fire District	Waterstone Road, Greenwood Lake
Greenwood Lake Police Department	16 Church St., Greenwood Lake
Warwick Community Ambulance Services	South Street Extension, Warwick (V)
<b>Educational</b>	
Greenwood Lake Elementary	Waterstone Road, Greenwood Lake
Greenwood Lake Middle School	Lakes Road, Greenwood Lake
<b>Government</b>	
Village Offices	Church Street, Greenwood Lake

The Village of Greenwood Lake has zero (0) critical facilities within the 500-year floodplain or the high hazard Landslide Rating<sup>1</sup> area. The following table identifies the structures and hazard issues.

<b>Table 10.2.13d: Village of Greenwood Lake Critical Facilities and Infrastructure in Hazard Areas</b>		
<b>Critical Infrastructure</b>	<b>500-Yr Flood</b>	<b>Landslide Rating Area</b>
Note: No Critical Facilities/Infrastructures within the Village of Greenwood Lake are within the 500-year floodplain or high risk landslide area.		

As indicated in Section 2.8, participating municipalities did not wish to disclose the locations of public water systems facilities due to security concerns. However, they acknowledge the criticality of such facilities. While it is assumed that most municipal water systems facilities are not located within the floodplain, these jurisdictions will explore hardening/relocation opportunities for those that are located within the floodplain should such actions become necessary due to the incidence of flooding impacts.

By necessity, critical wastewater facilities are located within the 500-year floodplain due to discharge requirements and gravity-fed systems optimization. While relocation is neither desired nor feasible, participating municipalities will seek to harden these facilities where feasibly and fiscally possible.

Table 2.8a – Orange County NPDES Data lists all wastewater facilities in the County, including the Village of Greenwood Lake, with a NPDES (National Pollutant Discharge Elimination System) permit. In the case of New York State, NPDES permit listing match State Pollutant Discharge Elimination System (SPDES) permit listings.

### **Priority Hazard Events**

The following sections detail the priority hazard events identified by the jurisdiction. Additional information about each hazard including frequency, history, and severity within Orange County is included within Section 5.0 of the main body of the Hazard Mitigation Plan (Volume I).

The probability of climate-related hazard events is generally expected to increase in the future within the Village of Greenwood Lake. This anticipated increase results from the expected increase in weather volatility associated with climate change. Greenwood Lake is part of the larger Passaic-Hackensack Watershed. The Village’s proximity to the lake contributes to increased flooding occurrences.

Past occurrences of hazard events are indicated in their respective profiles below. Some hazards may not have locally available documentation of past occurrence, but are nonetheless profiled in this annex to instill future mitigation planning consideration.

<sup>1</sup> Areas with a landslide rating in of greater than 37 are considered hazardous. The data was derived from HAZUS software analysis.

*Flood*

The Village is located at the northern end of Greenwood Lake. Heavy rain events have created past flooding associated with this waterbody as well as flood control structure failures.

FEMA’s Flood Insurance Mapping Program designates areas that are at risk for flooding; low flood risk are areas unlikely to flood, moderate risk are areas within the 500-year floodplain (.2% likely to flood in any given year), and high risk are areas that frequently flood, up to the 100-year flood risk zone (1% likely to flood in any given year). A total of thirty (30) percent of the land acreage within the Village of Greenwood Lake is designated as within flood hazard areas, designated as high risk as listed in the Table 10.2.13e.

<b>Table 10.2.13e: Summary of Land Areas in Flood Hazard Areas</b> <i>(Source: FEMA DFIRM Data 2011)</i>						
Municipality	Total Land Area (Acres)	High Flood Risk (Acres)	Moderate Flood Risk (Acres)	Low Flood Risk (Acres)	Land in High Flood Risk %	Land in Moderate Flood Risk %
		A, AE, AH, AO	X500	X	A, AE, AH, AO	X500
Greenwood Lake, Village of	1,394	414	0	980	30%	0%

Additionally, 8.7% of the Village’s improved value areas (defined as property that is either actively utilized or has been developed) are located within the high risk flood areas (91.3% is within low risk areas).

The National Flood Insurance Program (NFIP) tracks properties that have had several claims. The Village’s 2014 local hazard mitigation plan detailed of these properties which are noted below.

<b>Table 10.2.13f: Community NFIP Repetitive Loss Properties</b>								
Community	# of RL Properties	Type of Properties	Total Number of Paid Losses	Total Payments	Average Individual Payment	Located in Mapped Floodplains		
						A (1% Annual Chance)	X500 (.2% Annual Chance)	X (Low Risk)
Village of Greenwood Lake	3	Residential	7	\$20,773	\$2,968	-	0	1

Below is a table that illustrates the value of property in the Village of Greenwood Lake that is located within the 500-year floodplain and is categorized by land use type. This table was derived from FEMA floodplain mapping and parcel data from the Orange County Property Assessor.

Type of Structure	# Structures in Hazard Area	Value of Structures (in millions)
Residential	128	\$23.0
Commercial	9	\$0.9
Industrial	0	\$0
Agricultural	0	\$0
Religious/Non-profit	0	\$0
Government	1	\$0.5
Education	0	\$0
Utilities	0	\$0
Dams	0	\$0
Parks	0	\$0
<b>Total</b>	<b>138</b>	<b>\$24.4</b>

#### Historical Occurrence:

One historic major flooding (excluding Hurricanes Lee, Irene, and Sandy) event has affected the Village.

- March 2010 – Flooding caused by heavy rain and snow melt took place in the Village of Greenwood Lake.

Additionally, there are ten (10) flood hazard areas in the Village of Greenwood Lake that have been identified based on their location to the 100 floodplain as listed below:

- NYS Route 210/ Jersey Avenue
- Edgemere Avenue/Sterling Road to the Waterstone Road Bridge
- Sterling Road/Ten Eyck Avenue/Starlight Lane
- North of the NYS Route 17A bridge, eastern arm of the lake & inland along NYS Route 17A
- NYS Route 17A/Linden Avenue/Waterstone Road between the NYS Route 17A bridge and the Waterstone Avenue bridge
- Grove Avenue/Maple Street/Poplar Street

- Murray Road/Lakewood Road
- Southern portion of the Village along Windemere Avenue/Myrtle Avenue/Woodbine Avenue to Laurel Avenue
- Village Department of Public Works Complex on Elm Street
- Village Drive/Random Road

#### *Extreme Temperatures*

For a description of this hazard, please see section 5.1.

#### Historical Occurrence:

In the past ten (10) years there is no record of any Extreme Temperatures that have explicitly impacted the Village of Greenwood Lake, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

#### *Severe Storm/ Thunderstorm*

For a description of this hazard, please see section 5.2.

#### Historical Occurrence:

In the past 10 years, two (2) severe storms have been recorded by NOAA Storm Events Database for the Village of Greenwood Lake.

- November 18, 2013 - A tree was reported down on a wire along Sterling Road.
- July 3, 2014 - As a cold front slowly moved across the area, moisture from Tropical Cyclone Arthur passing to the south and east converged along the boundary resulting in severe thunderstorms, heavy rain and flash flooding in portions of southeast New York. Multiple trees were reported down in the Village.

#### *Hurricane*

Due to the inland location of the Village of Greenwood Lake, the majority of hurricanes that reach the area are classified as tropical storms and risk of true hurricanes is relatively low. However, due to the severe nature of these storms, numerous costly damages can occur due to high winds, rainfall, and lightning.

#### Historical Occurrence:

Descriptions of significant hurricane events that have occurred within the Village over the last twenty years are summarized below:

- July 1996 – Hurricane Bertha made landfall and dumped 4.5 inches of rain on Greenwood Lake.

### *Drought*

For a description of this hazard, please see section 5.5.

#### Historical Occurrence:

In the past ten (10) years there is no record of any Droughts that have explicitly impacted the Village of Greenwood Lake, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

### *Earthquake*

For a description of this hazard, please see section 5.7.

#### Historical Occurrence:

In the past ten (10) years there is no record of any Earthquakes that have explicitly impacted the Village of Greenwood Lake, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

### *Winter Storms*

For a description of this hazard, please see section 5.8.

#### Historical Occurrence:

In the past ten (10) years there is no record of any Winter Storms that have explicitly impacted the Village of Greenwood Lake, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

### *Ice Storm*

For a description of this hazard, please see section 5.8.

#### Historical Occurrence:

In the past ten (10) years there is no record of any Ice Storms that have explicitly impacted the Village of Greenwood Lake, however, there have been a number of recorded occurrences within Orange County. The information can be found in the main body of the document.

### *Dam Failure*

Two (2) Class “C” dams are located near the Village; the Lower Warwick Dam (capacity of forty-eight (48) acre-feet) and the Glenmere Lake Dam (Town of Chester- three thousand, three hundred twenty-seven (3,327) acre-feet). The Village would be critically affected in the event of breach. Work is on-going at the Glenmere Lake Dam.



### 10.2.13.4 Capability Assessment

#### *Planning and Regulatory Capability*

<b>Table 10.2.13h: Legal and Regulatory Capabilities for Village of Greenwood Lake</b>		
<b>Regulatory Tools for Hazard Mitigation</b>	<b>Description</b>	<b>Responsible Department/Agency</b>
Codes/Ordinances	2010 NYS Building Code, Village of Greenwood Lake Code	Building Planning Board, Village Zoning Board of Appeals (ZBA)
Plans, Manuals, and/or Guidelines	Comprehensive Plan, Flood Maps	Building Planning Board, Village Zoning Board of Appeals (ZBA)
Studies	Floodplain Studies	FEMA

#### *Administrative and Technical*

<b>Table 10.2.13i: Summary of Administrative and Technical Staff Capabilities for Village of Greenwood Lake</b>		
<b>Staff/Personnel Resources</b>	<input checked="" type="checkbox"/>	<b>Department/Agency - Position</b>
Planner(s) or engineer(s) with knowledge of land development and land management practices	<input checked="" type="checkbox"/>	Village Engineer/Department of Public Works, Building Department
Engineer(s) or professional(s) trained in construction practices related to buildings and /or infrastructure	<input checked="" type="checkbox"/>	Building Department, Village Engineer/ Department of Public Works
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	<input checked="" type="checkbox"/>	Building Department, Village Engineer/ Department of Public Works
Floodplain Manager	<input checked="" type="checkbox"/>	Building, Village Engineer
Surveyors		*N/A
Staff with education or expertise to assess the community's vulnerability to hazards	<input checked="" type="checkbox"/>	Department of Public Works, Building Department, Village Engineer, Mayor
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	<input checked="" type="checkbox"/>	Engineer
Scientists familiar with the hazards of the community		N/A
Emergency manager	<input checked="" type="checkbox"/>	Mayor
Grant writer(s)	<input checked="" type="checkbox"/>	*N/A

\*N/A – indicates that such staff or personnel are not currently employed by the Town. Outside providers are often contracted by the Town to provide such services.

*Fiscal*

<b>Table 10.2.13j: Fiscal Capabilities for Village of Greenwood Lake</b>	
<b>Financial Resources</b>	<b>Accessible or Eligible to Use (Yes, No, Don't Know)</b>
Community Development Block Grants	Yes
Capital Improvements Project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric service	Yes
Impact fees for homebuyers or new developments/homes	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes

*NFIP: Administrator, Vulnerability, Resources, Compliance*

The Village of Greenwood Lake has participated in NFIP (ID #360616) since 3/22/1974. Administration is provided through the Village Clerk and Building Department. As of January 31, 2018, the Village has a total of fifty-one (51) policies for a value of \$12,409,600. The Village has adopted means to follow NFIP as noted:

“The process entails permit review, code compliance and certifier’s compliance. The most recent (floodplain mapping) revisions were reviewed and commented on by the Village.”

According to Table 8.2c, as of February 28, 2017, there are two (2) repetitive flood loss residential properties within the Village of Greenwood Lake, neither of which qualify as severe repetitive flood loss properties.

The Village has been maintaining NFIP participation by performing the duties and actions that were listed in the local laws that their municipal boards adopted. (Local Law #5 of 2009)

The Villages Floodplain Administrator has been provided a NFIP best practices incorporation guidance document and will be using it to improve local participation in NFIP standards going forward. This package of documents was provided by NYSDHSES and can be found in Appendix F - NFIP Floodplain Administrator Guidance Package.

*Hazard Mitigation: Existing and Planning Mechanisms*Emergency Communications, Routes, and Shelters:

Orange County utilizes the CodeRED system for emergency notifications. The Village follows emergency route rules set by Orange County. The Village has one (1) designated emergency shelter: Greenwood Lake Elks Lodge 2067 (35 Chestnut St., Greenwood Lake, NY 10925). More information on these sites can be found in Attachment III.

Comprehensive Plan:

The Village's Comprehensive Plan is in the process of being updated. Flood mapping will likely be included in the document and mitigation or planning strategies in regards to hazards will be discussed.

Planning Mechanisms:

While this annex has provided a summary and description of existing plans, policies, and regulatory mechanisms that support hazard mitigation, the 2018 Orange County Hazard Mitigation Plan Update is intended to allow for the integration of its recommendations and data into local plans. Listed below are several planning and policy mechanisms that lend themselves to the integration of materials and objectives from this hazard mitigation plan. Columns to the right indicate whether the municipality has utilized hazard mitigation planning elements in the past (as in the aftermath of a previous local hazard mitigation plan) and whether they intend to be utilized in the future (which most, if not all, do).

Table 10.2.13k: Incorporation of Hazard Mitigation Planning into Existing and Future Planning Mechanisms		
Planning Mechanism	Has been Utilized	May be Utilized
<b>Capital Improvement Budget:</b> Hazard Mitigation Actions to be considered during the development of annual capital improvement plans. Compliance with Hazard Mitigation goals and objectives as well as the hazard vulnerability of site will be a consideration during the evaluation of infrastructure and facilities projects.	X	X
<b>Operating Budget:</b> Hazard Mitigation Actions to be considered within day-to-day operating budgets as funding permits.	X	X
<b>Building &amp; Zoning Ordinances:</b> Review of the hazard mitigation plan and hazard analyses are part of the evaluation of land use, zoning, and development review ordinances and permitted processes.	X	X
<b>Comprehensive Land Use Plan:</b> Elements such as hazard vulnerability and hazard area extents will be considered during the development of future land use maps and other elements of comprehensive planning.	X	X
<b>Human Resource Manual:</b> Employee job descriptions may contain elements related to hazard mitigation planning and associated recommendations.		X
<b>Grant Applications:</b> Support for funding requests in the form of data, maps, and priority recommendations will be drawn from the hazard mitigation plan.	X	X
<b>Fire Plan:</b> Fire Plans for the municipality and local fire departments can utilize data and mapping in the hazard mitigation plan.	X	X
<b>Local School Service Projects:</b> Municipal officials and staff can explore the possibility of collaboration with local school districts to provide avenues for student community service projects as well as educational opportunities.		X
<b>Economic Development:</b> Local chambers of commerce and other economic development agencies can utilize the hazard mitigation plan to better inform new/expanding businesses in finding a location.		X

### 10.2.13.5 Mitigation Strategy and Prioritization

#### *Past, Existing, and Proposed*

The Village did not identify any past, existing, or proposed mitigation actions. Only those proposed mitigation actions that were incomplete were included in this plan as re-issued proposed mitigation actions in Table 10.2.13l.

#### *Proposed Initiatives*

<b>Table 10.2.13l: Mitigation Actions/Projects Identified by Village of Greenwood Lake</b>					
<b>Action</b>	<b>Hazard(s) Mitigated</b>	<b>Description</b>	<b>Estimated Cost</b>	<b>Primary Agency</b>	<b>Funding Source(s)</b>
GL-1: Steep Slope Best Management Practices	Landslide	Develop municipal guidelines based on State Best Management Practices for local properties on steep slopes to promote soil retention and stability through vegetative measures.	\$10,000	Village	General Fund
GL-2: Storm Sewer Infrastructure Map	Flooding, Winter Storm, Hurricane	Update municipal mapping of catch basin and storm sewer infrastructure to assist in prioritizing response during storm events.	\$20,000	DPW	General Fund
GL-3: Gas Pumps Back-up Power	Winds, Hurricane, Extreme Storms	Install generator to run DPW Yard gas pumps during power outage	\$80,000	DPW	General Fund
GL-4: Shelter	All	Provide showers and reserve natural-gas fired power for Elks Lodge to enable shelter designation during emergencies and provide warming/cooling center capability	\$30,000	DPW/Building & Grounds	General Fund
GL-5: Salt Barn Replacement	Winter Storm	Replace structurally deficient/functionally obsolete salt storage facility to improve hazard response.	\$70,000	DPW & Engineer	Grant
GL-6: Single Plow Snow Removal Equipment	Winter Storm	Purchase smaller snow removal equipment to improve response capability in steep/narrow/remote sections of the municipality	\$30,000	DPW	General Fund
GL-7: East Shore Road Mountain Runoff Control	Flooding, Winter Storm, Hurricane	Study potential locations to install improvements (roadside swales, drainage facilities, and roadway modifications) that intercept mountain runoff and direct discharge to lake to mitigate flooding and icing conditions on critical access route.	\$40,000	DPW	Grant
GL-8: Design & Construct Lakelands/Fernwood Drainage Improvements	Flooding, Winter Storm, Hurricane	Construct a stormwater trunk line supplemented with smaller inlets/piping to collect the runoff that floods 10 properties and associated streets and convey same to the lake.	\$800,000	DPW & Engineer	HMGP
GL-9: Chronic Flooding and Property Damage Study	Flooding, Winter Storm, Hurricane	Study to examine drainage patterns, watercourse characteristics, and potential mitigation actions to address chronic flooding and property damage in area between Elm Street, Vine Street, Village Drive, and Crane Road	\$40,000	DPW	Grant
GL-10: North Arm Flood Study	Flooding, Landslide, Hurricane	Study to examine potential mitigation of flooding impacts due to continued loss of lake storage in shallow North Arm region from chronic erosion/sedimentation off Sterling Forest lands.	\$40,000	DPW	Grant

<b>Table 10.2.13: Mitigation Actions/Projects Identified by Village of Greenwood Lake</b>					
<b>Action</b>	<b>Hazard(s) Mitigated</b>	<b>Description</b>	<b>Estimated Cost</b>	<b>Primary Agency</b>	<b>Funding Source(s)</b>
GL-11: Random Road Culvert Replacement	Flooding, Winter Storm, Hurricane	Improve the waterway opening to current design standards to mitigate overtopping and backwater impacts to critical access route.	\$250,000	DPW & Engineer	Grant
GL-12: Mountain Lakes Bridge Replacement	Flooding, Winter Storm, Hurricane	Improve the waterway opening to current design standards to mitigate overtopping and backwater impacts to critical access route.	\$400,000	DPW & Engineer	Grant

STAPLEE forms were completed for each of these actions. A table with these evaluations can be found in Attachment II of this jurisdictional annex.

“STAPLEE” refers to the following lenses of evaluation: social, technological, administrative, political, legal, economic, and environmental.

*Future Needs*

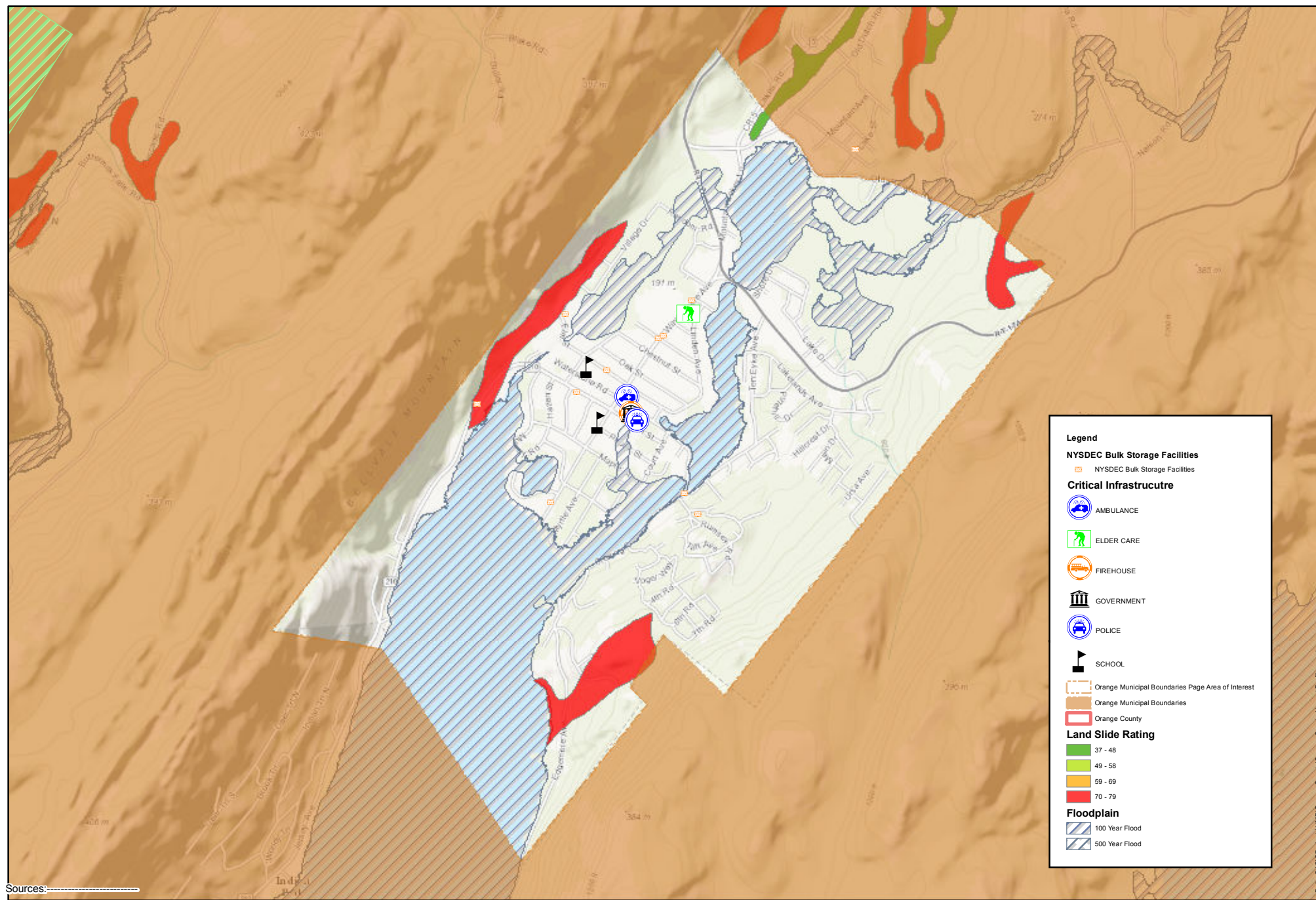
In the future, the Village will investigate the feasibility of improvements to the storm and sanitary treatment systems in order to avoid contamination of Greenwood Lake.

**12.2.13.6 Hazard Area Extent and Location**

A map demonstrating the location of certain hazard areas is attached as Attachment I.

## **Attachment I**

# **Hazard Area Extent and Location Map - Village of Greenwood Lake**



**Legend**

**NYSDEC Bulk Storage Facilities**

- NYSDEC Bulk Storage Facilities

**Critical Infrastructure**

- AMBULANCE
- ELDER CARE
- FIREHOUSE
- GOVERNMENT
- POLICE
- SCHOOL

Orange Municipal Boundaries Page Area of Interest

Orange Municipal Boundaries

Orange County

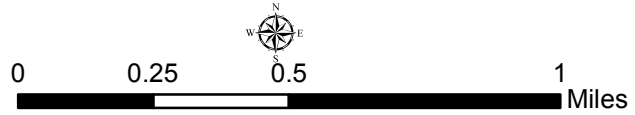
**Land Slide Rating**

- 37 - 48
- 49 - 58
- 59 - 69
- 70 - 79

**Floodplain**

- 100 Year Flood
- 500 Year Flood

Sources: \_\_\_\_\_



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## **Attachment II**

# **STAPLEE Mitigation Action Cost/Benefit Analysis - Village of Greenwood Lake**



**STAPLEE Criteria Consideration Tables**  
**Mitigation Action Prioritization and Comparison**

Jurisdiction: Village of Greenwood Lake

Action ID	Action	S	T	A	P	L	E	E	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
		+ = benefit (favorable), - = cost (unfavorable), 0 = neutral or N/A											Levels = high, medium, or low	
GL-1	Steep Slope Best Management Practices: Develop municipal guidelines based on State best management practices for local properties on steep slopes to promote soil retention and stability through vegetative measures	+	+	+	+	+	+	0	+	0	0	Medium	Low (\$10,000)	Low
GL-2	Storm Sewer Infrastructure Map: Update municipal mapping of catch basin and storm sewer infrastructure to assist in prioritizing response during storm events	+	+	+	+	+	+	0	+	0	0	Low	Low (\$20,000)	Low
GL-3	Emergency Equipment Gas Pumps Back-up Power: Install backup generators to run gas pumps during power outage	+	+	+	+	+	+	0	0	+	0	Medium	Low (\$80,000)	High
GL-4	Shelter: Provide showers and reserve natural-gas fired power for Elks Lodge to enable shelter designation during emergencies and provide warming / cooling center	+	+	+	+	+	+	0	0	+	0	Medium	Low (\$30,000)	High
GL-5	Salt Barn Replacement: Replace structurally deficient / functionally obsolete salt storage facility to improve hazard response	+	+	+	0	+	+	0	0	0	0	Low	Low (\$70,000)	Low
GL-6	Single Plow Snow Removal Equipment: Purchase smaller snow removal equipment to improve response capability in steep/narrow/remote sections of the municipality	+	+	+	+	+	+	0	+	0	+	Medium	Low (\$30,000)	Medium
GL-7	East Shore Road Mountain Runoff Control: Study potential locations to install improvements (roadside swales, drainage facilities, and roadway modifications) that intercept mountain runoff and direct discharge to lake to mitigate flooding and icing conditions on critical route	+	+	+	+	+	+	0	0	+	0	Medium	Low (\$40,000)	Low
GL-8	Design & Construct Lakelands/Fernwood Drainage Improvements: Construct stormwater piping to eliminate flooding of ten (10) properties and roadways	+	+	+	+	+	+	0	-	+	-	High	High (\$800,000)	High

**STAPLEE Criteria Consideration Tables**  
**Mitigation Action Prioritization and Comparison**

Jurisdiction: Village of Greenwood Lake

Action ID	Action	S	T	A	P	L	E	E	Can action be easily implemented?	Does action achieve multiple plan objectives?	Can action be quickly implemented?	Level of action benefits	Level of action overall costs	Priority ranking
		+ = benefit (favorable), - = cost (unfavorable), 0 = neutral or N/A											Levels = high, medium, or low	
GL-9	Chronic Flooding and Property Damage Study: Conduct study to examine drainage patterns, watercourse characteristics, and potential mitigation actions to address chronic flooding and property damage in areas between Elm Street, Vine Street, Village Drive, and Crane Road	+	+	+	+	+	+	0	0	+	0	Medium	Low (\$40,000)	Low
GL-10	North Arm Flood Study: Conduct study to examine the potential mitigation of flooding impacts due to continued loss of lake storage in shallow North Arm region from chronic erosion/sedimentation off Sterling Forest lands	+	+	+	+	+	+	0	0	+	0	Medium	Low (\$40,000)	Low
GL-11	Random Road Culvert Replacement: Improve the waterway opening to current design standards to mitigate overtopping and backwater impacts to critical access route	+	+	+	+	+	+	0	-	+	-	Medium	Medium (\$250,000)	Medium
GL-12	Mountain Lakes Bridge Replacement: Improve the waterway opening to current design standards to mitigate overtopping and backwater impacts to critical access route	+	+	+	+	+	+	0	-	+	-	High	Medium (\$400,000)	High

**Attachment III**

**Hazard Mitigation Worksheets -  
Village of Greenwood Lake**

## Mitigation Actions and Strategy Detail Worksheet

<b>Action Worksheet</b>	
Name of Jurisdiction	Village of Greenwood Lake
Name of Hazard Mitigation Plan	Orange County Multi-Jurisdictional Hazard Mitigation Plan
<b>Potential Actions/Projects (not being implemented at this time)</b>	
Action/Project Number	GL – 3
Name of Action/Project	Gas Pumps Back-up Power
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	Install generator to run DPW Yard gas pumps during power outage. \$80,000.
<b>Plan for Implementation</b>	
Responsible Organization	Village DPW
Action/Project Priority	High
Potential Funding Sources	General Fund
Other assisting organizations, entities, etc.	N/A
Local planning mechanisms to be used in project/action implementation, if any	None.
<b>Progress Report</b>	
Date of status report	
Report of progress	
Evaluation of effectiveness	

## Mitigation Actions and Strategy Detail Worksheet

<b>Action Worksheet</b>	
Name of Jurisdiction	Village of Greenwood Lake
Name of Hazard Mitigation Plan	Orange County Multi-Jurisdictional Hazard Mitigation Plan
<b>Potential Actions/Projects (not being implemented at this time)</b>	
Action/Project Number	GL – 4
Name of Action/Project	Emergency Shelter
Summary of Evaluation: Benefits (losses avoided), estimated costs, and other factors considered	Provide showers & reserve natural-gas fired power for Elks Lodge to enable shelter designation during emergencies & provide warming/cooling center capability. \$30,000.
<b>Plan for Implementation</b>	
Responsible Organization	Village DPW, Building & Grounds
Action/Project Priority	Moderate/High
Potential Funding Sources	General Funds, CDBG, FEMA HMGP
Other assisting organizations, entities, etc.	N/A
Local planning mechanisms to be used in project/action implementation, if any	None.
<b>Progress Report</b>	
Date of status report	
Report of progress	
Evaluation of effectiveness	

Orange County  
Multi-Jurisdictional All Natural Hazard Mitigation Plan  
Emergency Shelter Questionnaire

Name of Your Municipality:	<u>Village of Greenwood Lake</u>
Common Name of Your Emergency Shelter:	<u>Greenwood Lake Elks Lodge 2067</u>
Street Address of Your Emergency Shelter:	<u>35 Chestnut St.</u> <u>Greenwood Lake, NY 10925</u>
Name of the Owner of Your Emergency Shelter:	<u>Greenwood Lake Elks Lodge 2067</u>
Name of the Regular Occupant of Your Emergency Shelter:	<u>Greenwood Lake Elks Lodge 2067</u> <u>Thomas Howley Exalted Ruler 477-2067</u>

Name of Jurisdiction: \_\_\_\_\_

**RESOLUTION  
TO AUTHORIZE THE ACCEPTANCE AND ADOPTION OF THE  
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE FOR  
ORANGE COUNTY, NEW YORK**

**WHEREAS**, the Orange County Department of Emergency Services, with the assistance from Barton & Loguidice, D.P.C., has gathered information and prepared the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York; and

**WHEREAS**, the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York has been prepared in accordance with the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations (CFR), Part 201; and

**WHEREAS**, Title 44 CFR, Chapter 1, Part 201.6(c)(5) requires each local government participating in the preparation of a Multi-Jurisdictional Mitigation Plan or Plan Update to accept and adopt such plan; and

**WHEREAS**, the Village of Greenwood Lake, has reviewed the 2016 Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, has found the document to be acceptable, and as a local unit of government, has afforded its citizens an opportunity to comment and provide input regarding the Plan Update and the actions included in the Plan;

**WHEREAS**, the Village of Greenwood Lake, will consider the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County during the implementation and updating of local planning mechanisms, and will incorporate the hazard assessment data, hazard vulnerabilities, and mitigation actions in these mechanisms, where applicable;

**NOW THEREFORE, BE IT RESOLVED**, that the Village of Greenwood Lake, as a participating jurisdiction, adopts the Multi-Jurisdictional Hazard Mitigation Plan Update for Orange County, New York, dated May 2016.

This resolution was thereupon declared duly adopted on \_\_\_\_\_.

\_\_\_\_\_  
(Mayor)

\_\_\_\_\_  
(Clerk)