

9.21 SPECIAL PURPOSE DISTRICT – SLEEPY HOLLOW LAKE

This section presents the jurisdictional annex for the Special Purpose District: Sleepy Hollow Lake.

A.) HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Laurel Mann, Project Manager Unit 1095 92 Randy Rd., Athens, NY 12015 518-731-6175 E-mail: lmann@sleepyhollowlake.org	Julia Stoddard, Assistant Project Manager Unit 1095 92 Randy Rd., Athens, NY 12015 518-731-6175 E-mail: jstoddard@sleepyhollowlake.org

B.) DISTRICT PROFILE

Sleepy Hollow Lake is a private residential community with a 324 acre man-made lake that is within the municipalities of the Town and Village of Athens, and the Town of Coxsackie. The lake was made in 1972 as a private lakefront community with over 2,000 building lots. Full and part time residents are evenly divided among the 775 homes in the Association. The lake itself is called the ‘centerpiece of the Sleepy Hollow Lake community’ and is a private 324 acre, two and a half mile long lake, providing opportunities for boating, swimming, fishing and waterskiing.

The day to day operations are managed by the Association of Property Owners of Sleepy Hollow Lake, Inc. at the direction of the Board of Directors. The Board of Directors governs Sleepy Hollow Lake. There are 20 Full Time employees, 9 Part Time employees and 4 seasonal employees. The Department of Public Safety operates 24-hours a day, 7-days a week. Other departments include the Department of Community Services which includes the water and wastewater treatment facilities and the highway department that maintains 27 miles of private roads; the ECC (similar to a Building Department); the recreation department (handles boats, camping, marina, pools, other); customer service; and accounting.

Each lot owner pays annual dues and sewer standby fees to help cover the cost of maintaining the community. Homeowners pay annual dues, water and sewer fees, as well as taxes to the municipality in which the property is located.

Sleepy Hollow Lake is a class “A” drinking water reservoir for the community and Lake Management and Storm Water Management are taken very seriously. Lake water quality testing, fisheries and aquatic plant species are monitored regularly. Construction management includes strict rules to protect the water with erosion and sediment control requirements.

The Dam is a Class “C” high hazard dam and is monitored regularly to meet state requirements. It is an earthen dam with a clay soil core. Local Engineers are consulted on a regular basis for proper maintenance and repair of areas including the spillway, the plunge pool, the sluice gate as well as the entire dam structure as a whole. The New York State DEC department of Dam Safety has the Sleepy Hollow Lake Dam Emergency Action Plan on file.

The Coxsackie-Athens School District encompasses the entire Sleepy Hollow Lake community.

1.) Land Area Served: Approximately 2200Acres

2.) Population Served: Approximately 2250

3.) Land Area Owned: 471.4 Acres

4.) List of Critical Infrastructure/Equipment:

- Water Treatment Plant
 - 64 Miles of Water Lines
 - 64 Flushing Hydrants
 - 100 Fire Hydrants
 - Raw Water Pump Station
 - 4 Water Towers
- Wastewater Treatment Plant
 - 64 Miles of Wastewater Lines
 - 3 Pump Stations
 - 2 Cantex Tanks
 - 2 Drying Beds
 - 1 Reed Bed
- 753 foot Earthen Dam, Spillway & Sluice Gate
- 27 Miles of Roadway
- 26 Acres of Storm Water Drainage Easements

5.) Value of Critical Infrastructure/Equipment:

- Water Treatment Plant - \$8,949,035
 - 64 Miles of Water Lines
 - 64 Flushing Hydrants
 - 100 Fire Hydrants
 - Raw Water Pump Station
 - 4 Water Towers
- Wastewater Treatment Plant - \$7,791,790
 - 64 Miles of Wastewater Lines
 - 3 Pump Stations
 - 2 Cantex Tanks
 - 2 Drying Beds
 - 1 Reed Bed
- Earthen Dam, Spillway & Sluice Gate - \$12.5M
- Miles of Roadway – \$8M
- 26 Acres of Storm Water Drainage Easements - \$4M

6.) List of Critical Facilities (owned by District): The following facilities are located within the identified risk zone:

- **APO Administration /Maintenance Facility** – 92 Randy Road
- **APO Offices/Distribution Facility** – Tommy Trail
- **Main Entrance Building** – Rte 385

7.) Value of Critical Facilities:

- **APO Administration /Maintenance Facility** – \$500,000
- **APO Offices/Distribution Facility** – \$160,000
- **Main Entrance Building** - \$100,000

8.) Value of Area Served:

- **Private Lots, developed and undeveloped:** \$151,652,746
- **APO Owned Property:** \$3,994,957

C.) OUTLINE OF AREA SERVED

See map in volume 1 and in Section N below.

D.) CURRENT AND ANTICIPATED SERVICE TRENDS

Sleepy Hollow Lake has experienced 26% growth in new home construction over the last 5-years. This increase in homes increases the use of our water and sewer facilities as well as an increase in wear on our roads and amenities. The increase in houses represents an increase in impervious surface which contributes to storm water issues and sediment loading into the lake. Current water treatment volume is 115,225 gallons/day and current wastewater treatment volume is 77,345 gallons/day. These numbers will continue to rise as the community builds out.

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

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Flood (Hurricane Diane)	DR-45	August, 1955	Not available
Flood (Hurricane Katie)	DR-52	October, 1955	Not available
Snowstorm / Extreme Cold	Not applicable	January, 1961	Not available
Extreme Cold	Not applicable	January, 1963	Not available
Extreme Cold	Not applicable	January, 1971	Not available
Flood (Tropical Storm Agnes)	Not applicable	June, 1972	\$806,000 (countywide)
Tornado (F3)	Not applicable	June, 1974	\$2,500,000 (countywide)
Extreme Cold	Not applicable	February, 1980	Not available
Flood	DR-792	April, 1987	\$2,000,000 (countywide)
Severe Winter Storm	DR-801	October, 1987	Not available
Ice Storm	Not applicable	December, 1991	\$385,000 (countywide)
Blizzard / Extreme Cold	EM-3107	March, 1993	Not available
Extreme Cold	Not applicable	January, 1994	Not available
Lightning	Not applicable	May, 1995	\$20,000
Flood	Not applicable	October, 1995	\$3,000,000 (countywide)
Blizzard	DR-1083	January, 1996	\$160,000 (countywide)
Severe Storm and Flooding	DR-1095	January, 1996	\$10,000,000 (countywide)
Snowstorm	Not applicable	March /April, 1997	\$709,000
Severe Storm/Flooding (Hurricane Floyd)	DR-1295	September, 1999	\$3,000,000 (countywide)
Severe Storms	DR-1335	May/Sept. 2000	Not available
TSTM / Hail / Lightning	Not applicable	June, 2001	\$370,000 -\$400,000. 2 houses caught fire (countywide)
Snowstorm	EM-3173	Dec. 2002/Jan. 2003	Not available
Landslide	Not applicable	March, 2003	Not available
Snowstorm	EM-3184	February, 2003	Not available
Severe Storms, Tornado, and Flooding	DR-1486	July/August, 2003	\$75,000 - \$1,100,000 (countywide)
Flood (Hurricane Ivan)	Not applicable	September, 2004	Not available
Severe storms and Flooding	DR-1589	April, 2005	\$1,300,000 (countywide)
Severe storms and Flooding	DR-1650	June/July, 2006	Not available
Snowstorm (Valentine's Day Storm)	Not applicable	February, 2007	Not available
Snowstorm (St. Patrick's Day Storm)	Not applicable	March, 2007	Not available
Severe Storms and Inland and Coastal Flooding (Nor'Easter)	DR-1692	April, 2007	\$1,300,000 - \$111,000,000 (may be inaccurate) (countywide)
Severe Ice Storm	DR-1827	12-13 to 12-31-08	Approximately \$1,200,000 county-wide

F.) NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Rank #	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
4	Earthquake	\$2,892,642 ^{e, f}	Low	10	Low
1	Flood	\$1,595,000 ^e	High	54	High
3	Ground Failure	Not available ^g	Medium	24	Medium
1	Severe Storm	\$277,209 ^d	High	54	High
2	Severe Winter Storm	\$7,708,200 ^d	High	48	Medium

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 Greene County were based on the default general building stock database provided in HAZUS-MH MR3 (R.S. Means 2006).

d. 500-year MRP structural value loss estimate only; does not include the value of contents. For severe winter storm, the loss estimate is 10% 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. Estimated losses include the total for the entire Town of Athens and Village of Athens. This, more than likely, over-estimates the earthquake potential losses for Sleepy Hollow Lake.

g. 100% of the community's general building stock inventory is exposed or located within the approximate landslide hazard area.

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

- None

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

- Sleepy Hollow Lake Dam Emergency Action Plan

I.) DISTRICT MITIGATION RELATED CLASSIFICATIONS

DISTRICT CLASSIFICATIONS		
Program	Classification	Date Classified
Public Protection	N/A	N/A
Fire Wise	N/A	N/A
Storm Ready	N/A	N/A

N/A= Not applicable

J.) PROPOSED HAZARD MITIGATION INITIATIVES

Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
SH-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	2, 4, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, FEMA	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF
SH-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	2, 4, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, FEMA	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF
SH-2	Identify District facilities that are viable candidates	Existing	Flood, Severe Storm	2, 4, 11	Municipality (likely through	SEMO, FEMA	High	FEMA Mitigation	Long-term DOF

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Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
	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.				NFIP Floodplain Administrator)			Grant Programs and local budget (or property owner) for cost share	
SH-3	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New & Existing	All Hazards	All Objectives	Municipality (through mitigation planning point of contacts)	County (through Mitigation Planning Coordinator), SEMO	Low – High (for 5-year update)	Local Budget, possibly FEMA Mitigation Grant Funding for 5-year update	Ongoing
SH-4	Deleted								
SH-5	Continue to develop, enhance, and implement existing emergency plans.	New & Existing	All Hazards	1, 7, 8, 9	Municipal Emergency Manager with support from County OEM and SEMO	County Emergency Management, SEMO	Low - Medium	Local Budget	Ongoing
SH-6	Create/enhance/ maintain mutual aid agreements with neighboring communities.	New & Existing	All Hazards	1,7,8, 9	Local Emergency Management, DPW and Roads	Surrounding municipalities and County	Low - Medium	Local Budget	Ongoing
SH-7	Support County-wide initiatives identified in Section 9.1 of the County Annex.	New & Existing	All Hazards	All objectives	Local departments (as applicable for specific initiative)	County and Regional agencies (as appropriate for initiative)	Low - High	Existing programs and FEMA grant funding where applicable	Ongoing – Long-term depending on initiative
SH-8	Create Back-up Emergency Power source at raw water	Existing	All Hazards	2, 3, 6, 11	Local departments	County and Regional	Medium-High	Local Budget	Short



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Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
	pump station				(as applicable for specific initiative)	agencies (as appropriate for initiative)			
SH-9	Evaluate the feasibility of creation of back-up Emergency Power source at water plant and implementing study of costs associated with this project.	Existing	All Hazards	2, 3, 6, 7, 11	Sleepy Hollow Association Directors, Town of Athens/Village of Athens DPW, Town of Athens Board	Greene County Planning	Medium-High	Existing programs and FEMA grant funding where applicable	Short
SH-10	Implement dam structure repairs as required by dam safety report/protocols	Existing	All Hazards	2, 3, 6, 10, 11	Sleepy Hollow Association Directors, Town of Athens/Village of Athens DPW, Town of Athens Board	Greene County Planning	High	Existing programs and FEMA grant funding where applicable	Short
SH-11	Replace damaged road culverts - community wide	Existing	Flood, Severe Storm, Ground Failure	2, 3, 6, 10, 11	Sleepy Hollow Association Directors, Town of Athens/Village of Athens DPW, Town of Athens Board	Greene County Planning	High	Existing programs and FEMA grant funding where applicable	On Going
SH-12	Repair/replace bridge	Existing	All Hazards	2, 3, 6, 11	Sleepy Hollow Association Directors, Town of Athens/Village of Athens DPW, Town of Athens Board	Greene County Planning	High	Existing programs and FEMA grant funding where applicable	Long
SH-13	Implement pump station upgrade to prevent flooding	Existing	Flood	2, 3, 6, 10, 11	Sleepy Hollow Association Directors, Town	Greene County Planning	Medium-High	Existing programs and FEMA	Short



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Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
					of Athens/Village of Athens DPW, Town of Athens Board			grant funding where applicable	
SH-14	Repair storm Water drainage way.	Existing	Flood, Severe Storm, Ground Failure	2, 3, 6, 10, 11	Sleepy Hollow Association Directors, Town of Athens/Village of Athens DPW, Town of Athens Board	Greene County Planning	High	Existing programs and FEMA grant funding where applicable	On Going
SH-15	Support the Install/Implement Community Emergency Alert System	New	All Hazards	1, 2, 3, 6, 7, 8, 9	Sleepy Hollow Association Directors, Town of Athens/Village of Athens DPW, Town of Athens Board	Greene County Planning	High	Existing programs and FEMA grant funding where applicable	Short

Notes: Short term = 1 to 5 years. Long Term= 5 years or greater. OG = On going program. DOF = Depending on funding. PDM = Pre-Disaster Mitigation Grant Program.



K.) 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 Special Purpose District 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	6. Structural Projects
Earthquake	SH-3, SH-7	SH-3, SH-7, SH-8, SH-9, SH-10, SH-12,	SH-3, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-13, SH-14	SH-3, SH-5, SH-6, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-12
Flooding (riverine, flash, coastal and urban flooding)	SH-2, SH-3, SH-7	SH-1, SH-2, SH-3 SH-7, SH-8, SH-9, SH-10, SH-12,	SH-1, SH-2, SH-3, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-13, SH-14	SH-2, SH-3, SH-5, SH-6, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-12
Ground Failure	SH-3, SH-7	SH-3, SH-7, SH-9, SH-10, SH-13	SH-3, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-13, SH-14	SH-3, SH-5, SH-6, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-12
Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)	SH-2, SH-3, SH-7	SH-1, SH-2, SH-3 SH-7, SH-8, SH-9, SH-10, SH-11, SH-13	SH-1, SH-2, SH-3, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-13, SH-14	SH-2, SH-3, SH-5, SH-6, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-12
Severe Winter Storm (heavy snow, blizzards, ice)	SH-3, SH-7	SH-3, SH-7, SH-8, SH-9, SH-10, SH-12, SH-13	SH-3, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-13, SH-14	SH-3, SH-5, SH-6, SH-7, SH-15	SH-3, SH-7, SH-10, SH-11, SH-12

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.

L.) PRIORITIZATION 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)
SH-1A	3	H	H	Y	Y	N	M-H*
SH-1B	3	H	H	Y	Y	N	M-H*
SH-2	9	M	L	Y	N	Y	H
SH-3	11	M	M	Y	N (Yes for 5 year update)	Y	H
SH-4	-	-	-	-	-	-	deleted
SH-5	4	M	L	Y	N	Y	H
SH-6	4	M	L	Y	N	Y	H
SH-7	11	M-H	L-M	Y	Dependant on specific initiative	Dependant on specific initiative	M-H (dependant)
SH-8	4	H	M-H	Y	Y	Y	H
SH-9	5	H	H	Y	Y	Y	H
SH-10	5	H	H	Y	Y	N	M
SH-11	5	H	H	Y	Y	N	M
SH-12	4	H	H	Y	Y	N	M
SH-13	5	H	M-H	Y	Y	Y	H
SH-14	5	H	H	Y	Y	N	M
Sh-15	7	H	H	Y	Y	N	M

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 objectives (i.e., multiple hazards), benefits exceeds cost, has funding secured or is an on-going project and project meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM) programs. High priority projects can be completed in the short term (1 to 5 years).
- **Medium Priority** - A project that meets goals and objectives, benefits exceeds costs, funding has not been secured but project is grant eligible under, HMGP, PDM or other grant

programs. Project can be completed in the short term, once funding is completed. Medium priority projects will become high priority projects once funding is secured.

- **Low Priority** - Any project that will mitigate the risk of a hazard, benefits do not exceed the costs or are difficult to quantify, funding has not been secured and project is not eligible for HMGP or PDM grant funding, and time line for completion is considered long term (1 to 10 years). Low priority projects may be eligible other sources of grant funding from other programs. A low priority project could become a high priority project once funding is secured as long as it could be completed in the short term.

Prioritization of initiatives was based on above definitions:

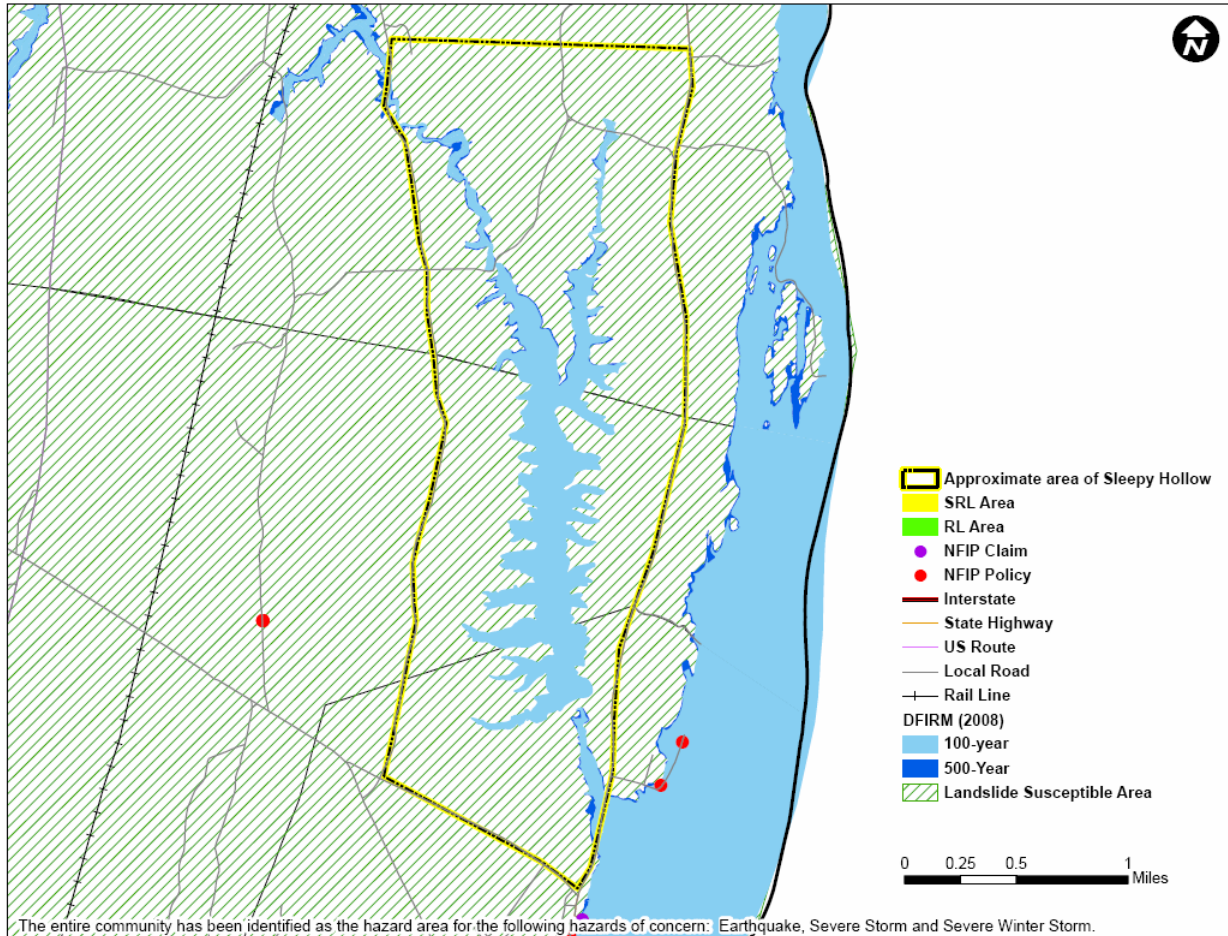
Prioritization of initiatives was based on parameters other than stated above:

M.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

As the community continues to build out, storm water management will become in increasingly important issue to address with regards to flooding, erosion & sediment control and water quality of the lake water, which is the reservoir for the community.

N.) HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map has been generated and is provided below for Sleepy Hollow Lake to illustrate the probable areas impacted within the Special Purpose District. This map is based on the best available data at the time of the preparation of this Plan, and is 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 Sleepy Hollow Lake has significant exposure. The county maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.



Sources: FEMA DFIRM, 2008; FEMA Region II, 2008; Greene County Planning and Economic Development, 2008; NYSDPC, 2008

Notes: DFIRM = Digital Flood Insurance Rate Map. NFIP = National Flood Insurance Program; RL = Repetitive Loss; SRL = Severe Repetitive Loss