APPENDIX 3E.1 – HAZARD RANKINGS AND KEY RISK FINDINGS

HAZARD RANKING BY JURISDICTION

Jurisdiction	Atmospheric							Hydrologic					Geologic		Wildfire
	Extreme Temperatures	Extreme Wind	Hurricane and Tropical Storm	Lightning	Nor'easter	Tornado	Winter Storm	Dam Failure	Drought	Flood	Storm Surge	Wave Action	Earthquake	Landslide	
ULSTER COUNTY	M	M	M	L	M	M	M	L	L	H	L	L	L	M	M
Denning, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Ellenville, Village of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Esopus, Town of	M	M	M	L	M	M	M	L	L	H	L	L	L	M	L
Gardiner, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Hardenburgh, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Hurley, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	#N/A	L
Kingston, City of	M	M	M	L	M	M	M	#N/A	L	H	L	L	L	#N/A	L
Kingston, Town of	M	M	M	L	M	M	M	#N/A	L	H	L	#N/A	L	M	L
Lloyd, Town of	M	M	M	L	M	M	M	L	L	H	L	L	L	M	L
Marbletown, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	#N/A	L
Marlborough, Town of	M	M	M	L	M	M	M	L	L	H	L	L	L	M	L
New Paltz, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
New Paltz, Village of	M	M	M	L	M	M	M	#N/A	L	H	L	#N/A	L	#N/A	L
Olive, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Plattekill, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	#N/A	L
Rochester, Twon of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Rosendale, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	#N/A	L
Saugerties, Town of	M	M	M	L	M	M	M	#N/A	L	H	L	L	L	M	L
Saugerties, Village of	M	M	M	L	M	M	M	#N/A	L	H	L	L	L	M	L
Shandaken, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Shawangunk, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Ulster, Town of	M	M	M	L	M	M	M	L	L	H	L	L	L	M	L
Wawarsing, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L
Woodstock, Town of	M	M	M	L	M	M	M	L	L	H	L	#N/A	L	M	L

#N/A = the hazard is not applicable in this jurisdiction

PRI BY JURISDICTION

Jurisdiction	Atmospheric							Hydrologic					Geologic		Wildfire
	Extreme Temperatures	Extreme Wind	Hurricane and Tropical Storm	Lightning	Nor'easter	Tornado	Winter Storm	Dam Failure	Drought	Flood	Ice Jam	Surge	Earthquake	Landslide	
ULSTER COUNTY	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	1.8	1.9	2.6	2.6
Denning, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Ellenville, Village of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Esopus, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	1.8	1.9	2.6	0.0
Gardiner, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Hardenburgh, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Hurley, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	#N/A	0.0
Kingston, City of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	#N/A	2.2	3.1	1.8	1.8	1.9	#N/A	0.0
Kingston, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	#N/A	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Lloyd, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	1.8	1.9	2.6	0.0
Marbletown, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	#N/A	0.0
Marlborough, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	1.8	1.9	2.6	0.0
New Paltz, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
New Paltz, Village of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	#N/A	2.2	3.1	1.8	#N/A	1.9	#N/A	0.0
Olive, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Plattekill, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	#N/A	0.0
Rochester, Twon of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Rosendale, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	#N/A	0.0
Saugerties, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	#N/A	2.2	3.1	1.8	1.8	1.9	2.6	0.0
Saugerties, Village of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	#N/A	2.2	3.1	1.8	1.8	1.9	2.6	0.0
Shandaken, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Shawangunk, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Ulster, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	1.8	1.9	2.6	0.0
Wawarsing, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0
Woodstock, Town of	2.7	2.9	2.6	2.2	2.4	2.5	2.7	2.2	2.2	3.1	1.8	#N/A	1.9	2.6	0.0

#N/A = the hazard is not applicable in this jurisdiction

Priority Risk Index for Ulster County				
PRI Category	**Degree of Risk**			**Assigned Weighting Factor**
	Level	**Index Value**	**Criteria**	
Probability	Unlikely	1	Less than 1% annual probability	30%
	Possible	2	Between 1 and 10% annual probability	
	Likely	3	Between 10 and 100% annual probability	
	Highly Likely	4	100% annual probability	
Impact	Minor	1	Very few injuries, if any. Only minor property damage and minimal disruption on quality of life. Temporary shutdown of critical facilities.	30%
	Limited	2	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one day.	
	Critical	3	Multiple deaths/injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one week.	
	Catastrophic	4	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	
Spatial Extent	Negligible	1	Less than 1% of area affected	20%
	Small	2	Between 1 and 10% of area affected	
	Moderate	3	Between 10 and 50% of area affected	
	Large	4	Between 50 and 100% of area affected	
Warning Time	More than 24 hours	1	Self explanatory	10%
	12 to 24 hours	2	Self explanatory	
	6 to 12 hours	3	Self explanatory	
	Less than 6 hours	4	Self explanatory	
Duration	Less than 6 hours	1	Self explanatory	10%
	Less than 24 hours	2	Self explanatory	
	Less than one week	3	Self explanatory	
	More than one week	4	Self explanatory	

Summary of PRI Results for Ulster County												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Currently there are no municipalities in Ulster County enrolled in the NFIP's CRS. Many residents and businesses in Ulster County will likely see much higher insurance rates in the near future with approximately 600 of the 1400 policyholders likely to be affected by the removal of pre-FIRM subsidies.

Plank Road is a 3.5-mile County road that is impacted often by flooding. There are several locations where flood damage occurs repeatedly, including several road embankments and at culverts that often plug or are undersized and overtop. This is a vital road for the community as it is the only other way to access points west of Mount Tremper other than State Route 28, which is susceptible to flood damage at an undersized bridge in Mount Tremper and at "Campground Curve" near Phoenicia.

Stony Clove Lane Bridge is a County-owned bridge located at the base of a dead end town road. It provides access to nearly 40 homes and is likely undersized. The bridge has proven to be subject to repetitive erosion/depositional-related damages.

Bridge 202 on Plank Road is a County-owned bridge that has been shown through recent HEC-RAS modeling to cause a significant backwatering effect during 50-year storms that inundates Miller Road, a dead-end road with about 20 homes.

Bridge Street Bridge is a County-owned bridge that provides crucial ingress and egress from the Hamlet of Phoenicia. The structure has been damaged (and closed for several months) on two occasions since 2005.

The Old Mount Tremper Bridge is a County-owned bridge that has been closed since 1986 because of its deteriorated condition and could pose a downstream flood hazard if it collapses into the Esopus Creek.

A section of Ulster County Route 47 downstream of McKenely Hollow, as well as the terminus of the road itself (intersection with County Route 47) and surrounding homes, is very vulnerable to moderate storms and has been inundated by flooding on several occasions since the 1980s. Several locations within one mile upstream and downstream are very vulnerable to embankment failure from flooding, which would also force road closure if it were to fail. This is a critical road for access to several businesses, State land, and a large and remote YMCA Campus.

Creekside Drive is a County road that is impacted often by flooding. There are several locations where flood damage occurs repeatedly, including several road embankments and at the location of a critical bridge. This is a vital road for the community as it is the only other way to access the western portion of the County other than State Route 28, which is susceptible to flood damage.

Just outside of the Hamlet of Woodstock, a portion of Ohayo Mountain Road (300 feet) is slumping into the Saw Kill. There are areas where guard rails are sinking into the stream, where the road is eroding into the stream, and where the stream is undermining the road.

Currently an under-sized/clogged culvert causes inundation on well-traveled Glenford-Wittenberg Road in a populated neighborhood during small flow events. The impasse results in a 15-mile detour over the top of Ohayo Mountain.

Currently an under-sized culvert causes inundation of well-traveled Zena-Sawkill Road during moderate flows resulting in a roadway that becomes impassable and results in a 2-mile detour through a dense residential neighborhood.

Currently an under-sized culvert on Zena-Sawkill Road, in conjunction with a low spot in the road, causes backwatering and inundation of a well-traveled road even during moderate flows resulting in a roadway that becomes impassable and results in a 5-mile detour through a residential neighborhood.

A critical mountainous road in a rural portion of the Town is extremely vulnerable to washouts during flash flooding events, resulting in loss of ingress/egress (County Route 42) through remote areas located above a susceptible structure and unpredictable stream section.

County Route 3 routinely floods during small storms cutting of ingress/egress.

Debris-accumulating at Route 42 Maltby Hollow Bridge causes flooding up and downstream and erosional hazard to the road and bridge abutments. More than 100 homes upstream would be cut off from the rest of the town.

Because of diminishing capacity to convey floodwaters effectively, water is scouring out eastern abutment of the Route 42 Watson Hollow Bridge as well as causing a backwatering effect upstream of the bridge, resulting in inundation and other erosion problems.

Unstable banks, gravel deposition, and accumulation of woody debris are problems along County Route 42 in the Hamlet of West Shokan. The problem area is roughly a mile from Ashokan Reservoir to Maltby Hollow. This area is the only access/egress for 183 homes. Two of the highest importance areas are at Longitude: -74.283762/ Latitude: 41.967746; and at Longitude: -74.286900/Latitude: 41.966992.

In the Dry Brook Watershed there are several vulnerable locations that frequently become inundated or routinely wash out during the flash floods that often hit the steep mountainsides and narrow valleys in the Town. Because many of the town roads are dead-ends, residents and emergency responders get cut-off.

The Dry Brook stream has deposited a large gravel bar and threatens to encroach into Dry Brook Road (County Route 49) cutting off ingress egress by the residents upstream. Location is on dead end road which would cut-off access to residents and emergency personnel if it fails.

A section of Ulster County Route 47 along the West Branch Neversink River (a very remote mountainous area less than 5 miles away from Frost Valley YMCA, a camp that hosts roughly 38,000 people annually), is very vulnerable to even moderate (10-year) storms and has been inundated and washed out by flooding on several occasions since the 1980s. Not only is this is a critical road for access to State land and the remote YMCA Campus, it also serves as the only ingress/egress for a hundred homes (and emergency service personnel) other than a 70 mile, two hour detour.

With several significant flooding events within the past decade, gravel bars have formed and large woody debris has accumulated at many locations throughout the Town along the West Branch Neversink River. Several of these depositional areas are in locations that either direct streamflow alongside or directly at Frost Valley Road, or are located just upstream of bridges.

The Wallkill River (and the Klein Kill Creek), in the vicinity of the Village of New Paltz, inundates portions of several Ulster County roads in this populated area, resulting in dangerous rescue conditions for emergency responders and lengthy detours for residents and first responders alike. Of particular concern are three areas prone to inundation along sections of: County Rd #18A between State Route 299 and Mountain Rest Road, as well as the portion along the Klein Kill (Humpo Creek); County Road #117 between Springtown Road and Libertyville Road; County Road #61 from its junction with State Route 299 going 3/4-mile south.

Kyserike Road (Ulster County Road 29A) is an important local road that services several homes and farms. In this location, a low-lying stretch of road frequently becomes inundated by the Kripplebush Creek causing detours and requiring routine maintenance.

Bruynswick Road is a critical road that services dozens of homes and businesses. In this location, a decaying culvert continues to cause backwatering and requires constant maintenance. Inundation of the roadway is common and results in lengthy detours.

Binnewater Road is a critical road that services dozens of homes and businesses. In this location, a decaying culvert continues to cause backwatering and requires constant maintenance. Inundation of the roadway is common and results in lengthy detours.

Creek Locks Road (UC Road #73) is a critical road that services dozens of homes and businesses. In this location, a large embankment continues to slump into the Rondout Creek. This site continues to worsen each year, and soon the failure will impact the road, resulting in lengthy detours.

Ulster County Rd #13 (Tongore Road) is a critical road that connects the Lower Esopus Valley with NYS Route 213. In this location, a large embankment continues to slump into the Esopus Creek. This site continues to worsen each year, and soon the failure will impact the road, resulting in lengthy detours.

River Road (Ulster County Road #81) is a critical road that serves dozens of homes, businesses, and highly-used pubic access areas on the hillside along the Hudson River. Due to erosion, multiple locations along this road continually slump and slide down to the river, cutting off access and resulting in lengthy detours.

Summary of PRI Results for Denning, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Two rapidly aggrading gravel bars are re-directing streamflow alongside County Route 42/Peekamoose Road in Sundown and threatening this critical road.

Dirt roads that repeadetly washout in town result in a lack of access and eggress for residents (roughly 30) and emergency personnel. These sections are steep and very susceptible to washouts.

Two undersized and deteriorating bridges along Denning Road are frequently causing constrictions during higher flows and abutments are being undermined.

A massive failing hillslope (landslide) along the Rondout Creek below Balace Rd (near Sundown) jeopardizes several private properties and is beginning to threaten the downstream abutment of the Balace Rd bridge.

Culvert on dead end road is partially plugged and in a deteriorated condition. If is were to wash out or fail, access would be cut off to all residents and emergency personnel in this very inaccessible location.

A large hillslope began to fail years ago (and has progressively gotten worse) along Denning Road. Loss of roadway due to landslide would result in lack of access to a dozen properties at the end a this dead end road.Town DPW must regularly (post-storms) clear debris off of the roadway.

With several significant flooding events within the past decade, gravel bars have formed and large woody debris has accumulated in many locations throughout the Town. Several of these depositional areas are in locations that either direct streamflow alongside or directly at Denning Road (a dead end road), or are located just upstream of bridges.

With several significant flooding events within the past decade, gravel bars have formed and large woody debris has accumulated is many locations throughout the Town. Several of these depositional areas are in locations that either direct streamflow alongside or directly at Frost Valley Road, or are located just upstream of bridges.

A large, and recent (appeared after TS Irene) hillslope failure along Peekamoose Rd on the upper Rondout Creek is starting to erode the base of the County Road. This problem started in 2011, and each high water event since continues to take more embankment away, causing stream to migrate toward road.

A recent (appeared after TS Irene) embankment failure along Peekamoose Rd on the upper Rondout Creek, just downstream of the impoundment at Peekamoose Lake is starting to erode the base of the Town Road. This problem started in before 2011, and each high water event since continues to take more embankment away, causing stream to migrate toward road.

This project would remediate an ongoing hillslope failure along Raymond George Road that requires ongoing attention and maintance by the Town.

This project would replace an undersized bridge over Erts Brook along the town-owned Denning Road. This dead end road provides the only access for a YMCA facility and 15 private homes.

This project would replace an undersized and degrading culvert along the town-owned Round Pond Road.This road provides direct access to more than two dozen properties and the resulting detour would be in excess of two hours.

Two under-sized culverts (0.4-mile apart) routinely become over-topped with flood flows during heavy storms that force the Town to close Peekamoose Rd (a crucial road that serves half of the town in an extremely remote area) prevent ingress/egress by residents and emergency personnel.

This project would replace an undersized and deteriorating bridge over a tributary to the East Branch Neversink along the town-owned Denning Road. This dead end road provides the only access for a YMCA facility and 15 private homes.

The town hall and several residential structure in the hamlet of Claryville have been repeatedly flooded by the waters of the East Branch Neversink and sheet flow off of the steep mountainsides. At this location, dozens of properties upstream are isolated in storm events, including two YMCA facilities.

Summary of PRI Results for Ellenville, Village of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Potential for flooding, several local buildings at risk from flood water including a 32 unti senior citizens center and a 24 unit assisted living care center. During past events both have been flooded and required evacuation.

The generator at village hall is inadequate. When power has failed the generator has not worked for police purposes. As a result, the general public is placed at risk unnecessarily.

Past flooding events have shown the need for temporary shelter. At least two occasions in 5 years, a senior citizens center and apartment complexes had to be evacuated with no local shelter. Local churches provided shelter in these events.

Stream corridor is not flood protected and has overflowed and flooded in the past causing displaced families, damage to critical infrastructure, and stretched emergency services capability.

Summary of PRI Results for Esopus, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Did not participate in the plan update.

Summary of PRI Results for Gardiner, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Areas located on Forest Gale Road extension, Bevier Road, and Farmers Turnpike are subject to repeated flooding.

The town is subject to natural weather occurrences and lacks adequate backup power and sheltering supplies when Town Hall is used as an emergency shelter facility.

There is presently no means of communication with the community when power is out.

Central Hamlet of town has no central water supply.

Public understanding of hazard mitigation and its benefits is limited.

Potential loss of critical road and culvert infrastructure due to flooding and ice dams.

A vast area of the town is heavily wooded and at the base of the Shawangunk Ridge.

Several bridges within the town are subject to flood damage, ice damage, storm damage.

Summary of PRI Results for Hardenburgh, Town of												
Hazard	Category/Degree of Risk											azard Rankin
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.7	M
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	2.9	M
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	2.6	M
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.2	L
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.4	M
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.5	M
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.7	M
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.2	L
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	2.2	L
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	3.1	H
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	1.8	L
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A	#N/A
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	1.9	L
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	2.6	M
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	2.6	M

Key Risk Findings:

Under-sized and deteriorating culverts along Millbrook Road are frequently inundated and overtopped with floodwaters. If they wash out, the detour for residents and emergency personnel if the bridge were to fail is 1 hour.

An old and under-sized bridge on Millbrook Road in frequently inundated and overtopped with floodwaters. The detour for residents and emergency personnel if the bridge were to fail is 1 hour.

An old and under-sized bridge on Rider Hollow Road in frequently inundated and overtopped with floodwaters. This cuts off access to the Town Hall, DPW garage, and dozens of homes along a dead end road.

An old and under-sized bridge on Rider Hollow Road in frequently inundated and overtopped with floodwaters. This cuts off access to the dozens of homes along a dead end road.

Recent flooding events have continued to further erosion along this vulnerable location along a well-traveled road in the town. If this dead-end road were to wash out, access to more nearly 100 properties would be lost as there is no alternate route

A rapidly-deteriorating road/stream embankment threatens Dry Brook Town Road, a dead end road which would cut-off access to residents and emergency personnel if it washes out

The Dry Brook stream has deposited a large gravel bar and threatens to encroach into Dry Brook Road (County Rte 49) cutting off ingress egress by the residents upstream. Location is on dead end road which would cut-off access to residents and emergency personnel if it fails.

A critical bridge on Millbrook Road is continually threatened by high flow events in the Mill Brook. One of the abutments is failing, and it it washes out, the detour for residents and emergency personnel would be 1 hour.

Several homes become inaccessible during higher flows due to streambank erosion causing rootwads and gravel debris to flow to the bridge below the site. Debris accumulation at bridge causes overflow and erosion and road closure.

Two old and very unders-sized box culverts in the Rider Hollow watersed continue to collect debris during storm events and divert water over roadways. Both affected roads are dead-end town-maintaned roads.

Recent flooding events, particularly TS Irene, have caused the Beaverkill to migrate towards the main roadway that provides access to the entire western portion of the town. Without intervetion and stream re-alignment, this vulnerable location will ultimately collapse into the stream.

Recent flooding and other storm events, have caused the loss of power for extended periods at a time when the need for assisting the public and responding to emergencies is at its peak. By providing backup power capabilities at loctions where the public congregate and where equipment are housed is essential.

Without communications improvements throughout the town, and with only half of the town being served by Broadband, the other portion of Hardenburgh (the western half) is very susceptible to loss of communication by town, state, and federal officials during and after storms. A need for better and alternative means of communications exists in this portion of the town.

All of the currently designated helicopter landing zones (for emergency situations) are located in floodplains. The majority of natural hazards that exist in the Town are floods, therefore a need exists to identify areas outside of these locations that are routinely inundated during emergencies.

Recent flooding events, particularly TS Irene, have caused the Beaverkill to migrate from the main roadway that provides access to the entire western portion of the town. Without intervetion and stream re-alignment, this vulnerable location will ultimately collapse into the stream.

In the Mill Brook watershed there are several undersized culverts that routinely become plugged with gravel and woody debris during storm events. The debris accumulation often also causes the roadways and infrastrucutre to wash out or become over-topped with water during the flash-floods that oftern hit the steep mountainsides and narrow valleys in the Town. Because many of the town roads are dead-ends, residents and town offices, and emergency responders get cut-off.

In the Dry Brook watershed there are several under-sized culverts that frequently become inundated or completely wash out during the flash-floods that oftern hit the steep mountainsides and narrow valleys in the Town. Because many of the town roads are dead-ends, residents and emergency responders get cut-off.

In the Mill Brook watershed there are several locations that frequently aggrade with gravel and large woody debris during storm events causing streams to shift course. Addtionally, many exposed embankments are located along roads. Flash floods oftern hit the steep mountainsides and narrow valleys in the Town. Because many of the town roads are dead-ends, residents and town offices, and emergency responders get cut-off.

Recent flooding events, particularly TS Irene, have brought to light several culverts in the Beaverkill watershed that are either undersized, routinely collect gravel and woody debris (and plug), or are structurally compromised. If not addressed, each of these could result in residents being cut off from the rest of the Town and loss of ingress/egress during emergencies.

Several homes and NYS land access become inaccessible during higher flows due to streambank erosion.

Summary of PRI Results for Hurley, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Capacity of existing drainage system is insufficient to accommodate storm runoff; culverts are undersized, and easement widths in some areas are insufficient. Kemble Terrace, Woodland Drive.

Culverts undersized in the area of Witchtree and Tanglewood Roads result in flooding, roadway damage, and stream damage.

Stormwater drainage from County Road (Zandhoek) to confluenc eo fht eoutfall at Millbrook is insufficient, damaging roadways, residential property, and water quality. Width of existing easemetns is insufficient.

Summary of PRI Results for Kingston, City of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Not yet provided by local JAT.

Summary of PRI Results for Kingston, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Mitigate local road flooding on Sawkill Road with Storm Water Management Plan; stream overflow and stream pushback during storm events.

Town Hall, highway building, and fire house are subject to flooding, impeding continuity of operations for critical facilities.

Homes in the Sweet Meadow neighborhood are in danger of repetitive flooding from the Sawkill creek which borders.

Summary of PRI Results for Lloyd, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Not yet provided by local JAT.

Summary of PRI Results for Marbletown, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Did not participate in the plan update.

Summary of PRI Results for Marlborough, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Not yet provided by local JAT.

Summary of PRI Results for New Paltz, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Users of the Ohioville area experience service interruption during periods of heavy rain and flooding.

Inability for emergency services to reach residents during flooding on Cragswood Road because the road dips below the BFE.

During Sandy power outages disabled the municipal highway fuel depot and garage. Fuel shortages were widespread through out the region

EMERGENCY VEHICLE ACCESS IS CUT OFF TO WESTERN PORTIONS OF THE WALLKILL RIVER DURING A FLOOD

POTENTIAL LOSS OF LIFE AND REPETETIVE PROPERTY DAMAGE; PROVIDE THE PROPERTY OWNERS WITH THE ABILITY TO VOLUNARILY SEEK ACQUISITION FROM THE COMMUNITY AT A FAIR MARKE VALUE OF THE PROPERTY PRIOR TO AN EVENT

POTENTIAL LOSS OF LIFE AND REPETETIVE PROPERTY DAMAGE; PROVIDE THE PROPERTY OWNERS WITH THE ABILITY TO VOLUNARILY SEEK FUNDING TO ELEVATE EXISTING STRUCTURES TO CURRENT FEMA STANDARDS.

Summary of PRI Results for New Paltz, Village of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

This roadway intersection in the floodplain is a mjor access route between the eastern and the western portions of the community and it is regularly inundated.

During 100 year flood events, as occurred during Tropical Storms Irene and Lee, the wastewater treatment plant becomes incapacitated by flood waters in the floodplain and by storm water runnoff.

The Carmine Liberta Bridge is in need of repair or replacement due to damage from Tripical Storms Irene and Lee. The bridge is the only access betweem the western and the eastern sides of the community.

The existing sewer collection system was overwhelmed during Hurricane Irene and Tropical Storm Lee. That caused untreated sewage to contaminate the waters of the Wallkill River. Similar rain events cause similar discharges according to the amount of excessive rainfall.

Hurricane Irene and Tropical Storm Lee caused the Wallkill River and its tributaries to flood and damage nearby properties. Flood resiliancy and prevention strategies may be available to significantly reduce damage by flooding. But there is confusion about which ones are practical and which ones are not.

Village homes, businessses, and its wastewater treatment plant are located in the floodplain of the Wallkill River. Parts of the wastewater treatment plant are even the floodway. Some of those structures have suffered repetative losses due to flooding.

The Village is preparing its 10 year Dam Engineering Assessment Report for submission to NYS DEC. Indications are that Village municipal water supply dam facilities located within the Town on Mountain Rest Road, if breached or experieincing liquefaction, could present a risk to the downstream Catskill Aqueduct infrastructure owned by the City of New York. This is one of the main water supply conveyance systems for New York City, a city of 25 million persons, but it is unknown if the City is aware of the presence of a potetnial hazard or has performed risk assessment. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam. Dam failure can result from natural events, human-induced events, or a combination of the two. The most common cause of dam failure is prolonged rainfall that produces flooding. Failures due to other natural events such as hurricanes, earthquakes or landslides are significant because there is generally little or no advance warning.

An urbanized 1st order catchment drains a roughly one quarter mile square area in the core of the Village through pipes and stream channel. The conveyance system runs east to west north of Mohonk Avenue and Water Street and then underneath Water Street and the Wallkill Valley Rail Trail before reaching the Walkill River. The main culverts are collapsing and need replacement. If there was an intense rain storm, Village Engineers indicate infrastructure could be compromised, including by severely damaging and washing away part of the high berm the rail trail sits on.

Public understanding of this hazard; potential forms of mitigation; and the potetnial for co-benefits from proactive mitigation and comprehensive, multistakeholder planning

Summary of PRI Results for Olive, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.7	M
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	2.9	M
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	2.6	M
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.2	L
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.4	M
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.5	M
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.7	M
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.2	L
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	2.2	L
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	3.1	H
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	1.8	L
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A	#N/A
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	1.9	L
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	2.6	M
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	2.6	M

Key Risk Findings:

Firehouse is inundated from flooding and inaccessible during flood events. The new firehouse would be located outside of the floodplain eliminating its existing vulnerability, and ensuring the ability for the emergency service providers to access their equipment and vehicles during future flooding events.

Construct a new firehouse for the West Shokan Firehouse Co. #3 that is outside of the floodplain so that the fire company can continue to provide emergency services during flooding events. During Hurricane Irene and Tropical Storm Lee, apparatus, equipment and personnel had to be relocated to higher ground, severely compromising the ability of emergency service providers to assist in the recovery effort. Relocating the firehouse out of the flood plain would eliminate its existing vulnerability, and ensure the ability for the emergency service providers to access their equipment and vehicles during future flooding events.

The town and highway offices (currently located in the floodplain) would be relocated. A new facility outside the floodplain would be built. The new facility would be constructed using green technology and infrastructure. The new location would enable the Town and Highway offices to serve as a Command Center during disasters to meet the FEMA'S National Incident Command System requirements.

Implementation from the Local Flood Analysis currently planned (2015) to address issues of repetitive flooding in the Rte 28 corridor and the Esopus Creek in Boiceville. During Hurricane Irene and Tropical Storm Lee, the Esopus Creek experienced extreme localized flooding. The LFA will identify implementable measures to mitigate flooding. The mitigation measure can be implemented in phases.

Implementation from the Local Flood Analysis currently planned (2015) to address issues of repetitive flooding in the Watson Hollow, County Route 42 area in West Shokan. During Hurricane Irene and Tropical Storm Lee, the Bush Kill experienced extreme localized flooding. Above a County Rte 42 bridge there are 183 homes that could cutoff from services and food and fuel supplies. The LFA will identify implementable measures to mitigate flooding and look at the undersized bridge. The mitigation measure can be implemented in phases.

Action will keep town offices and equipement up and running during diasters by providing power during outages. Fuel would be available for equipment. Communications would be avaialbe, etc.

Replace three (3) Culvert Pipes on Jomar Lane that are too small to handle water runoff and causing road damage & private property damage as a result from heavy rains

The existing bridge over Beaver Dam Creek along Sahler Mill Rd is too small and frequently overtopped with floodwaters.

Upgrade small bridge on Brown Road: Existing Culvert Pipe on Brown Road over the Rochester Creek is too small to handle flood water. NYS DEC has recommended it be replaced with a small bridge.

Bridge installed on Desilva Road: Large culvert pipe is too narrow and constrictive. Will be replaced with bridge of adequate size over the Trib 8 Stream. Causing flooding issues on roads and NYS Rte 28 and Desilva Road.

Upper Boiceville Road: Bridge is too narrow and constrictive & should be replaced with a larger bridge. This bridge is located upstream & uphill from bridge on Desilva Road at Trib 8. This is the only artery around Boiceville when Rte 28 floods. This project should be done in conjunction with the DeSilva Road Bridge project

Butternut Stream at Red Maple Road has filled in with sediment and accumulation of woody debris. Stream should be restored and redefined.

The benefits of this project include the removal un-unatural and un-stable material (flood debris) from the streambank immediately above the Town's most populated hamlet and business district. This large pile of steel - whne mobilized by the next flood - would likely cause ba blockage downstream which could divert floodwaters at homes and businesses or threaten downstream infrastructure.

This project would stabilize banks, remove gravel deposition, and remove woody debris along County Route 42in West Shokan hamlet. This is roughly a mile from Ashokan Reservoir to Maltby Hollow. This area is the only aceess/egress for 183 homes.Two of the highest importance areas are at Longitude: -74.283762/ Latitude: 41.967746 and Longitude: -74.286900/Latitude: 41.966992.

Implementation from the the results of the planned stream feature identification (2015) to address issues of repetitive flooding in the Maltby Hollow, County Route 42 area in West Shokan. During Hurricane Irene and Tropical Storm Lee, the Maltby Hollow experienced extreme localized flooding, there are 50 homes on this dead end road that could be cutoff from services and food and fuel supplies.Flood mitigation measures would need to be implemented/addressed.

Implementation of the high priority projects from the townwide Plan which will be completed by 2016.

Public understanding of hazard mitigation and its benefits is limited

no consitent communication throughout the rural area

Butternut Stream at Bostock Road has filled in with sediment and accumulation of woody debris. Stream should be restored and redefined.

Elevation Certificates compilation and filing along with data acquisition to determine actual risk pre & post storm events

The main dam of the Ashokan Reservoir (Olivebridge Dam) is now more than 100 years old (as are all of the other dikes and other infrastructure at this location. The town is in possession of safety reports and other material that are a cause for concern for the safety of its residents downstream.

Because of diminshing capacity to convey floodwaters effectively, water is scouring out eastern abutment as well as causing a backwatering effect upstream of the bridge, resulting in inundation and other erosion problems. UC Route 42 Bridge (Watson Hollow Bridge)

Aging & possibly undersized bridge with low condition rating will be lost to flooding; UC Route 213 Bridge across Tongore Brook

Aging & potentially undersized bridge with low condition rating will be lost to flooding; UC Route 3 Bridge across Mettacahonts Stream

Debris-accumulating at bridge causes flooding up and downstream and erosional hazard to the road and bridge abutments. More than 100 homes upstream would be cut off from the rest of the town.UC Route 42 Bridge across Maltby Hollow

UC Route 3 Road Flooding; Road routinely floods during small storms cutting of ingress/eggress

NYS Route 28 Hazardous Spills Response; Response to spill on Main artery through town- most highly traveled road.

Upper Bushkill Infrastructure Protection and Debris Removal. A critical mountainous road in a rural portion of the Town is extremely vulnerable to washouts during flash flooding events, resulting in loss of ingress/egress (County Rte 42) through remote areas located above a susceptible structure and unpredictable stream section

Summary of PRI Results for Plattekill, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Not yet provided by local JAT.

Summary of PRI Results for Rochester, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Did not participate in the plan update.

Summary of PRI Results for Rosendale, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Not yet provided by local JAT.

Summary of PRI Results for Saugerties, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

It is observed by the local JAT that highway department lacks an effective annual system for annual inspection of culverts, pipes, catch basins and other highway needs to determine priorities for work in the new year.

High water damages to Lower Esopus Creek in the town of Saugerties

Severe impacts of 2011-12 storm events seriously damaged shoreline along the Malden and Glasco riverfront parks

The Town would benefit from a better understanding of local flood impacts throughout the community, as observed by the general public.

Significant washouts of Cantine/Veteran Memorial Field Complex roads during storm events

Summary of PRI Results for Saugerties, Village of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.7	M
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	2.9	M
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	2.6	M
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.2	L
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.4	M
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	2.5	M
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	2.7	M
Hydrologic Hazards												
Dam Failure		#N/A		#N/A		#N/A		#N/A		#N/A	#N/A	#N/A
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	2.2	L
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	3.1	H
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	1.8	L
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	1.8	L
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	1.9	L
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	2.6	M
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	2.6	M

Key Risk Findings:

Flooding occurs in the area of Lighthouse Drive and Ferry Street when storms coincide with high tides and discharges from Ashokan Reservoir.

Previous washout of bulkhead along Esopus Creek at Tina Chorvas Park; missing bulkhead is a hazard for seniors in housing project next door. Floodwaters are eroding park property into the creek.

Damaged ice breaker and bulkhead pilings at the Saugerties Lighthouse could cause washout of lighthouse foundation and damaged bulkhead could interfere with operation of the lighthouse.

Turbidity is observed in Town and Village water supply after severe storms, causing health risks and boil water notices for approximately 9,000 customers.

Summary of PRI Results for Shandaken, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Loss of electricity during storms at critical community facilities

Lack of elevation monuments/markers in public locations in each hamlet to raises costs associated in getting elevation certificates for structures and inhibits a more detailed elevation in relation to the flood elevations.

Community is in need of implementation of digital upgrade for the building department and provide GIS training for local officials to allow electronic post-storm building inspections and reports from the field and to increase the community CRS numbers.

Link Town Flood Hazard Mitigation Plan and Ulster County All-Hazard Mitigation Plan; Ensure link between locally driven projects for flood resiliency, emergency response activities and recovery efforts post-flood.

Enhanced Flood Prediction And Notification System; data acquisition to better determine actual risk of approaching storm events; data collection for better science/planning. Create an enhanced flood prediction and notification system that has real-time flood threat recognition capability and utilizes the best available data, science and technology. Create additional stream gauge locations and support of gauge automation at specific sites, installation of precipitation monitoring stations, new town-wide weather data collection stations, and create command center call-in capability to Birch Creek, Stony Clove, Woodland Valley, Allaben, and any newly established USGS gauges.

Improve access and accessibility to previous and currently issued elevation certificates and Floodplain Development Permits issued for specific parcels

Improve hydraulic and hydrologic information pertaining to floodplains throughout the Town of Shandaken

The Town of Shandaken has difficulty with Town-wide communications due to mountainous geography and vast rural areas with patches of isolated residents between population centers.

Multiple Critical Town Facilities are located in or adjacent to floodplain. (Town Hall, Ambulance Housing, Fire Stations)

Multiple residential and commercial structures are located within the 100-YR Floodplain

Connectivity to Floodplains and Flood Retention areas is in need of imprvement, while performing associated stream bank stabilization projects or stream work associated with infrastructure protection. Locations are primarily in (and immediately upstream of) population centers such as Phoenicia, Mount Tremper, Chichester, Oliverea, Pine Hill, Allaben, and Big Indian, and at additional locations, as yet to be determined.

Municipal Water Supply for Hamlet is inundated and incapacitated during moderate flood events

Fire District and Ambulance Buildings in need of upgrades to ensure resiliency and support Command Post and Emergency response activities

Shandaken #14- Old Mt Tremper Bridge Removal; 'This old County-owned bridge has been closed since the late 1970s because of its deteriorated condition and poses a downstream flood hazard if it collapses

A section of Ulster County Route 47 downstream of McKenely Hollow, as well as the terminus of the road itself (intersection with Co Rte 47) and surrounding homes is very vulnerable to moderate storms and has been inundated by flooding on several occasions since the 1980s. This is a critical road for access to several businesses and a YMCA Camp

Bridge Street Bridge provides crucial ingress and egress from the hamlet of Phoenicia. The structure has been damaged (and closed for several months) on two occasions since 2005.

Plank Road Bridge has been shown through recent HEC-RAS modeling to cause a significant backwatering effect during 50-year storms that inundates Miller Road, a dead-end road with about 20 homes.

Creekside Drive Bridge causes a significant backwatering effect during a 100-year storm (3-4' rise in water surface elevation) based up on new flood profiles contained in the preliminary FEMA Flood Insurance Study for the Bushnellsville Creek.

Stony Clove Lane Bridge at the base of a dead end town road that provides access to nearly forty homes is significantly undersized and subject to repetitive erosion/depositional-related damages.

Summary of PRI Results for Shawangunk, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Not yet provided by local JAT.

Summary of PRI Results for Ulster, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge	Unlikely	1	Critical	3	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Mitigate damage to homes on Orlando Street either by purchase and demolition or retrofitting by raising the homes Orlando St/ Buckley (bank stabilization)/Esopus neighborhood has frontage on the Esopus Creek which is a tributary of the Ashokan resevoir since 2005 this area has experienced 3 major flooding events, it was estimated that the Esopus Creek water rose 22 feet and put 5 and 1/2- 6 feet of water inside the dwelling units.

Mitigate damage to homes on Sandy Road/ Brabrant Neighborhood either by purchase and demolition or retrofitting by raising the homes

Mitigate damage to homes on Lower Katrine Lane either by purchase and demolition or retrofitting by raising the homes

Mitigate soil erosion and undercutting of the Esopus Creek banks that threaten homes on Brigahm Lane by vegetaion management and soil stabilization

Town of Ulster Waste Water Treatment plant off Dogwood Lane is floodprone

Town of Ulster Waste Water Treatment plant off Fording Place Road is floodprone

Summary of PRI Results for Wawarsing, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Town Hall is used as an evacuation center during emergencies. During storm events, the building often loses power.

Key municipal and emergency service facilities (i.e., schools, shelters, gas stations, banks, food stores, etc) lose power for extended pweriods during storm events.

Critical facilities have been damagesd by inundation from floodign, forcing closure and resulting in long term damage to properties, both during the storm events and after from water damage and mold.

Many structures and residentail properties are serviced by roads that frequently experience damage due to erosion or inundation from flooding. These roads are the primary ingress/egress and are located along streams in vulnerable areas.

Many structures and residential properties are serviced by roads that frequently experience damage due to inundation because of blocked culvertsa nd bridges. These raods are the primary ingress/egress and are located along streams in vulnerable areas.

Over the years, the West Branch of the Beer Kill has migrated towards theis road in many locations and is causing erosion to many road ambankments as well as scouring the abutments of a bridge (currently yellow-glagged) at the beginning of a dead end road containing a dozen properties.

In the event of any emergency that requires Route 209 to be closed, Berme Road is the only alternative route between Kerhonkson and Ellenville.

Summary of PRI Results for Woodstock, Town of												
Hazard	Category/Degree of Risk											
	Probability	PROBABILITY INDEX VALUE	Impact	IMPACT INDEX VALUE	Spatial Extent	SPATIAL INDEX VALUE	Warning Time	WARNING INDEX VALUE	Duration	DURATION INDEX VALUE	PRI Score	Hazard Ranking
Atmospheric Hazards												
Extreme Temperatures	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Extreme Wind	Highly Likely	4	Limited	2	Large	4	More than 24 hours	1	Less than 24 hours	2	**2.9**	**M**
Hurricane & Tropical Storm	Possible	2	Catastrophic	4	Small	2	More than 24 hours	1	Less than one week	3	**2.6**	**M**
Lightning	Highly Likely	4	Minor	1	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Nor'easter	Likely	3	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.4**	**M**
Tornado	Possible	2	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.5**	**M**
Winter Storm	Highly Likely	4	Minor	1	Large	4	More than 24 hours	1	Less than one week	3	**2.7**	**M**
Hydrologic Hazards												
Dam Failure	Unlikely	1	Catastrophic	4	Negligible	1	Less than 6 hours	4	Less than 6 hours	1	**2.2**	**L**
Drought	Possible	2	Minor	1	Large	4	More than 24 hours	1	More than one week	4	**2.2**	**L**
Flood	Highly Likely	4	Critical	3	Small	2	6 to 12 hours	3	Less than one week	3	**3.1**	**H**
Ice Jam	Likely	3	Minor	1	Negligible	1	More than 24 hours	1	Less than one week	3	**1.8**	**L**
Surge		#N/A		#N/A		#N/A		#N/A		#N/A	**#N/A**	**#N/A**
Geologic Hazards												
Earthquake	Unlikely	1	Minor	1	Large	4	Less than 6 hours	4	Less than 6 hours	1	**1.9**	**L**
Landslide	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**
Other Natural Hazards												
Wildfire	Possible	2	Critical	3	Small	2	Less than 6 hours	4	Less than one week	3	**2.6**	**M**

Key Risk Findings:

Mink Hollow Bridge has been damaged by repetitive flooding and in need of repair; approximately 30 homes above would be cut-off on a dead end road if washed out

Highway communications antenna has limited capability (as it was damaged in a storm event and not adequately repaired) and coverage at present location; Additionally, there is not adequate backup power supply for the load needed.

The main power lines to the municipal water supply are frequently damaged by fallen trees/limbs in wind storms and snowstorms.

Wittenberg / Shultis Farm Road Culvert is in a deteriorated condition, causes a constriction during modest flows which flow across County Route 45. The current culvert does not allow adequate fish passage.

State Route 212 Bridges - The current bridges (five total) are in a very deteriorated conditions, causing a public health and safety hazard, as well as being constrictions during higher flows.

Bellows Lane Intersection - the current culvert is in a deteriorated condition and causes a stream constriction during higher flows resulting in water flowing over the road.

Currently an under-sized culvert, in conjunction with a low spot in Zena/Sawkill Road causes backwatering and inundation of a well-traveled road even during moderate flows resulting in a roadway that becomes impassable and results in a 5-mile detour through a residential neighborhood.

Zena Road, by the Zena Health Center - Currently an under-sized culvert causes inundation of a well-traveled road during moderate flows resulting in a roadway that becomes impassable and results in a 2-mile detour through a dense residential neighborhood.

Glenford-Wittenberg Road - Currently an under-sized/clogged culvert causes inundation on well-traveled road in a populated neighborhood during small flow events. The impasse results in a 15-mile detour over top of Ohayo Mountain.

Ohayo Mountain Road - Just outside of the hamlet of Woodstock, a portion (300' of road) is slumping into the Saw Kill. There are areas where guard rails are sinking into the stream, where the road is eroding into the stream, and where the stream is undermining the road.

Hutchin Hill Rd - Approximately 500' of high, actively eroding streambank is contributing large woody debris to the Sawkill Creek, which ultimately deposits the trees in the vicinity of a downstream bridge that provides access to seveal dozen homes.

Old Keefe Hollow - A large, and recent (appeared after TS Irene) hillslope failure in Old Keefe Hollow slope along the Sawkill Creek is forcing the stream at Old Keefe Hollow Rd. This problem started in 2011, and each high water event since continues to take more embankment away, causing stream to migrate toward road.

Sawkill Stream - Over the course of several large flooding events, two larges piles of large woody debris have accumulated near several homes along the Sawkill Creek. This accumulation has caused the stream to migrate towards several homes and has caused loss of property. Additionally, the threat of mobilization of material during the next high flow events would jeopardize a downstream bridge and road infrastructure.

Mink Hollow Stream - Over the course of large flooding events, a long retaining wall has been compromised and undercut. Each additional high water event causes more collapse and a greater threat to private homes and infrastructure behind it.

NYS Route 212 - Currently, poor drainage leads to roadway inundation because storm drains become overwhelmed. Roadway inundation during Hurricane Irene and Tropical Storm Lee, resulted in road closures cutting off access to Woodstock's Central Business District, impacting business owners, and preventing residents from accessing much needed supplies.

Currently, the town does not have an adequate back up water supply in periods of drought. This project would resolve that by providing better access to the City of Kingston's supply which is located in the Town of Woodstock.

High flow events continue to cause the lateral migration of the Mink Hollow Stream toward Mink Hollow Road, a dead end and serve more than 30 homes above this location.

Mink Hollow Stream - two large, actively-eroding emabankments that continue to supply the stream with debris material (sediment and wood), causing deposition and stream migration downstream. The accumulation of this material is now threatening public infrastructure (Van Hoagland road and bridge).

Route 212 - Particularly after TS Irene, and in subsequent smaller flows, a long embankment has been compromised and continues to undermine a major access roadway for half of the town's population.

Ideal Park Road Bridge - This privately-owned bridge is under-sized and causes a constriction particularly during higher flow events. The bridge has been damaged several times, preventing access to the 13 homes on the other side of the Beaverkill.

Mink Hollow Bridge has been damaged by repetitive flooding and in constant need of repair; approximately 30 homes above this presumably undersized bridge would be cut-off on a dead end road if it washed out

Library Lane- A block in the hamlet of Woodstock, bounded by Rt 212, Library Lane, North Street and Orchard Lane, is relatively flat and has a subterranean stream that runs under a portion of the Funeral Home. In a flood event, the small streams in this area cause the homes and businesses to sustain severe water damage. The Woodstock Library is one of the buildings that is affected.