9.32 Town of Smithtown

This section presents the jurisdictional annex for the Town of Smithtown.

9.32.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Chief John Valentine, Director Department of Public Safety 65 Maple Avenue, Smithtown, NY 11787 (631) 360-7585 jvalentine@smithtowndps.org	Laura E. Feitner, Assistant Civil Engineer Engineering Department 124 West Main Street Smithtown, NY 11787 (631) 360-7550 lfeitner@tosgov.com

9.32.2 Municipal Profile

This section provides a summary of the community.

Population

According to the U.S. Census, the 2010 population for the Town of Smithtown was 117,801.

Location

The Town of Smithtown is bordered on the north by Long Island Sound, the west by Huntington, the south by Islip and the east by Brookhaven, and lies in the western part of Suffolk County, approximately 50 miles east of New York City. The Town's 55 square miles includes 30 miles of shoreline and 4,519 acres of parkland which includes 5 beaches, 3 state parks, 3 county parks, a municipally owned pool and golf course, several marinas, boat mooring areas and boat launching ramps, and over 25 town parks. Smithtown is also host to one of the largest industrial parks in the country, as well as, hundreds of commercial enterprises throughout its geographical boundaries. Three incorporated villages lie within Smithtown. They are the Village of the Branch, the Village of Nissequogue and the Village of Head of the Harbor.

Smithtown enjoys a temperate, maritime climate with an average annual low temperature of 43.2 (^{o}F) and an average annual high temperature of 61.9 (^{o}F). Local officials within the Town have been examining and documenting precipitation conditions over the last thirty-two years, since the Shallow Groundwater Hazard first caused significant damages to private properties. They have found the Town has been subject to higher accumulations of rainfall in twelve (12) of the last thirty-two (32) years. For example, in 2003, over 87 inches (7.25"/month) of rain fell, and the weather history for the past thirty years has shown that the Town may be subject to greater impact from precipitation events than regional analysis indicates.

The Town of Smithtown is unique topographically from other areas of the County of Suffolk as it is characterized by abrupt grade changes from the low flood plain of the Nissequogue River and the Northeast Branch corridors to the higher elevation areas of the Town overlooking the Long Island Sound. The changes in grade create valleys that present challenges from a natural hazard mitigation standpoint – some of these challenges include telecommunications and stormwater management.

Underneath a large percentage of the Town of Smithtown is a geologic layer known as Smithtown Clay. This layer is comprised of native clay, which in some points is over 75 feet deep. The clay exacerbates typical municipal stormwater management issues, and is part of the reason that the Shallow Groundwater hazard is so severely impacting many of the Town residents. In 1983 a comprehensive study regarding the Smithtown Clay was completed. Please refer to the Expansive Soils (Section 5.4.4) and Shallow Groundwater (Section 5.4.11) hazard profiles contained within this plan for additional and more detailed information.

Brief History

Smithtown is named after its founder, Richard Smythe. Mr. Smythe was an English subject who first settled in Southampton. After being banished from that town in 1656, he settled in Setauket for nine years. Then in 1663, he purchased the land that became known as *Smithtown* from Lion Gardiner. Mr. Gardiner had been deeded the lands by Chief Wyandanch, Sachem of the Long Island Montauks, after Mr. Gardiner helped the chief get back his kidnapped daughter. A Royal land patent was officially issued in 1665 to Richard Smythe. Richard Smythe built his home on the site of a Nissequogue Indian village near the intersection of River and Moriches Roads in what is today the Village of Nissequogue (the home is no longer standing). Smythe and his wife, Sarah, had nine children: Jonathan, Obadiah, Richard, Job, Daniel, Adam, Samuel, Elizabeth and Deborah. All the sons, with the exception of Obadiah who drowned in the Nissequogue River in 1680, settled near their father and raised families of their own. After Richard Smythe and his wife died, the lands comprising Smithtown were divided among their children. In 1735, the lands were further subdivided among their grandchildren in approximately fifty acre parcels. Generations of these families have remained in the area populating Smithtown with many direct descendants of Richard Smythe.

Governing Body Format

The Town of Smithtown is governed by a council form of government consisting of 5 elected officials including a Supervisor and four Councilpersons. This body is responsible for the resolution, implementation and update of the All-Hazards Mitigation Plan. The Town provides numerous services to its residents including public safety, parks and recreation services, waste management and road maintenance. In addition, the Town is responsible for all aspects of land use including subdivision, issuance of building permits and environmental revitalization. The Town has an elected Highway Superintendent, Town Clerk and Tax Receiver as well.

Growth/Development Trends

Very little undeveloped land remains in the Town of Smithtown. No future growth or development that would impact hazard mitigation planning is anticipated at this time.

Table 9.32-1. Growth and Development

Property Name	Type (Residential or Commercial)	Number of Structures	Parcel ID(s)	Known Hazard Zone*	Description / Status
None identified at this time					

* Only location-specific hazard zones or vulnerabilities identified.

9.32.3 Natural Hazard Event History Specific to the Municipality

Suffolk County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. The table below presents a summary of natural events that have occurred to indicate the range and impact of natural hazard events in the community. Information regarding specific damages is included if available based on reference material or local sources. For details of events prior to 2008, refer to Volume I, Section 5.0 of this plan.

In addition to the events detailed in the table below, the Town of Smithtown is regularly impacted by the Shallow Groundwater Hazard. Due to the unique topography and soils of the Town, the Shallow Groundwater Hazard frequently creates both private and municipal losses, both in the form of homeowners managing flooded basements using a variety of methods, including sump pumps, and in the form of increased municipal infrastructure maintenance and expansions. Any event detailed in the table below pertaining to severe precipitation or surface flooding also corresponds to a subsequent increased exposure to the Shallow Groundwater Hazard. The cumulative effort of multiple precipitation events can have an exponential effect on the groundwater table. For example, in March of 2010, damages due to the groundwater hazard were so severe they were reported to FEMA under DR-1899, and quantifiable damages exceeded $6 million.

Please note the damage amounts provided below, unless otherwise indicated, are the minimum amount of municipal labor damages experienced. The amounts are provided as a reference to indicate the relative impacts of various events locally experienced within the Town of Smithtown. Additional damages, such as to municipal and/or private property, have not been quantified at this time.

Table 9.32-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
June 26-July 4, 2013	Severe Storms and Flooding	DR-4129	No	Minimum $12,746.97
June 14, 2013	Rain			Minimum $5000
June 11, 2013	Rain			Minimum $5000
June 6-8, 2013	Record Heavy Rain			Minimum $10,000
May 25, 2013	High Winds			Minimum $3000
May 23, 2013	Flash Flooding			Minimum $3000
May 8, 2013	Flash Flooding			Minimum $2,394,30
April 12, 2013	High Winds			Minimum $9,371.33
March 18-19, 2013	Winter Storm			Minimum $18,167.98
March 6-8, 2013	Winter Storm			Minimum $15000
February 26-27, 2013	High Winds and Rain			Minimum $15000
February 18, 2013	High Winds			Minimum $407,853.26 for the event lasting 2/14-2/18 – considered one event by the Town
February 17, 2013	Snowstorm			see above
February 14, 2013	Snowstorm			see above
February 8-9,2013	Severe Winter Storm and Snowstorm	DR-4111	Yes- PA (Public Assistance)	Minimum $40000
February 2,2013	Snowstorm			Minimum $15000
January 31, 2013	High Winds and Rain			Minimum $8000
January 28, 213	Snowstorm			Minimum $8000

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
January 25, 2013	Snowstorm			Minimum $11,000
January 21, 2013	Winter Storm			Minimum $11,000
January 16, 2013	Winter Storm			Minimum $11,000
December 29, 2012	Snowstorm			Minimum $17,719.83
December 26-27, 2012	Nor'Easter			Minimum $3500
December 21, 2012	High Winds and Rain			Minimum $3500
November 7, 2012	Nor'Easter			Minimum $538,803.05
October 27-November 8, 2012	Hurricane Sandy	DR-4085	Yes- IA (Individual Assistance) and PA	Minimum $728,020.89. Refer to Mitigation Action Worksheets for more information
September 18, 2012	Heavy Rain and Wind Event			Minimum $12,092.98
August 6, 2012	Heavy Rain Event			Minimum $10,725.46
June 12-13, 2012	Rain Event			Minimum $9000
June 2, 2012	Rain Event			Minimum $9000
January 21, 2012	Snow Event			Minimum $45000
January 16-17, 2012	Snow Event			Minimum $45000
October 27-29, 2011	Light Snow, Heavy Snow, Rain, and Wind Event			Minimum $13,434.60
September 7-11, 2011	Remnants of Tropical Storm Lee	EM-3341 DR-4031	No	Minimum $497,128.64
August 26-September 5, 2011	Hurricane Irene	EM-3328 DR-4020	Yes- IA and PA	Minimum $20,196.97. Refer to Mitigation Action Worksheets for more information
June 23, 2011	Heavy Rain, Flooding Event			Minimum $11,670.15
April 26-May 8, 2011	Severe Storms, Flooding, Tornado and Straight Line Winds	DR-1993	No	Minimum $8,048.14
February 25-26, 2011	Wind, Snow, Rain, and Wind Event			Minimum $15,000
February 21, 2011	Wind, Snow, Rain, and Wind Event			Minimum $15,000
February 19, 2011	Wind, Snow, Rain, and Wind Event			Minimum $15,000
January 26-27, 2011	Heavy Snow			Minimum $108,710.42
December 26-27, 2010	Severe Winter Storm and Snowstorm	DR-1957	Yes- PA	Minimum $214,227.93
December 12-14, 2010	Rain, Wind, and Light Snow Event			Minimum $75,771.78
September 16, 2010	Severe Storms, Tornados and Straight Line Wind	DR-1943	No	Minimum $3,853.97
June 24, 2010	Severe Weather and QLCS Tornado Event			Minimum $12,860.49
May 9, 2010	Wind Event			Minimum $10,385.80
March 13-31, 2010	Severe Storms and Flooding	DR-1899	Yes-PA	Minimum $6 million, public and private losses. Refer to Mitigation Action Worksheets for more information
March 12-15, 2010	Heavy Snow, Rain, and Wind Event			Minimum $7000
February 25-27, 2010	Heavy Snow, Rain,			Minimum $7000

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
	and Wind Event			
February 23-24, 2010	Heavy Snow, Rain, and Wind Event			Minimum $7000
February 16-17, 2010	Heavy Snow, Rain, and Wind Event			Minimum $7000
February 10, 2010	Snow and Wind Events			Minimum $11,000
February 6, 2010	Snow and Wind Events			Minimum $11,000
February 2-3, 2010	Snow and Wind Events			Minimum $11,000
January 2-3, 2010	Snow and Wind Events			Minimum $88,193.58
December 31, 2010	Blizzard, Wind Event, Light Snow Event			Minimum $18000
December 29, 2010	Blizzard, Wind Event, Light Snow Event			Minimum $18000
December 19-20, 2010	Blizzard, Wind Event, Light Snow Event			Minimum $18000
November 12-14, 2009	Severe Storms and Flooding associated with Tropical Depression Ida and Nor'Easter	DR-1869	Yes-PA	Minimum $2.962.76
August 28-29, 2009	Heavy Rain Associated With Hurricane Danny			Minimum $13,372.48
August 8-10, 2009	Severe Storms and Flooding	DR-1857	No	Minimum $8,352.52
July 24, 2009	Heavy Rain			Minimum $37,373.73
March 1-2, 2009	Heavy Snow and Wind			Minimum $199,566.86
February 25-26, 2009	Snow Squall Event			Minimum $8000
February 21, 2009	Snow Squall Event			Minimum $8000
February 19, 2009	Snow Squall Event			Minimum $8000
January 27-28, 2009	Heavy Snow and Ice			Minimum $123,338.87
December 11-31, 2008	Severe Winter Storm	EM-3299 DR-1827	No	Minimum $202,872.87
June 14, 2008	Heavy Rain Event			Minimum $11,973.50
March 7-9, 2008	Snow, Rain, and Wind Event			Minimum $44,538.73
February 12-13, 2008	Wind, Snow, Ice, and Heavy Rain Events			Minimum $48,000
February 10, 2008	Wind, Snow, Ice, and Heavy Rain Events			Minimum $31,000
January 30, 2008	Snow and Wind Event			Minimum $12,595.36
January 17-18, 2008	Snow and Wind Event			Minimum $12,595.36 $47,096.39
January 13-14, 2008	Snow and Wind Event			Minimum $32000
January 9, 2008	Snow and Wind Event			Minimum $15000

9.32.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Town of Smithtown. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for Town of Smithtown.

Table 9.32-3. Hazard Risk/Vulnerability Risk Ranking

Rank #	Hazard Type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard[a]		Probability of Occurrence[b]	Risk Ranking Score (Probability x Impact)
1	Nor'Easter	100-Year MRP:	$293,791,664	Frequent	54
		500-Year MRP:	$4,115,858,896		
2	Severe Storms	100-Year MRP:	$293,791,664	Frequent	51
		500-Year MRP:	$4,115,858,896		
2	Severe Winter Storm	1% of GBS RCV:	$446,003,952	Frequent	51
		5% of GBS RCV:	$2,230,019,760		
3	Shallow Groundwater	Damage estimate not available(1)		Frequent	36
3	Hurricane	Category 1 SLOSH:	$21,410,154	Occasional	36
		Category 2 SLOSH:	$85,157,318		
		Category 3 SLOSH:	$152,210,023		
		Category 4 SLOSH:	$220,302,281		
4	Groundwater Contamination (natural)	No measurable impact to property		Frequent	27
5	Flooding	1-Percent Annual Chance Event:	$5,733,386	Frequent	18
		0.2-Percent Annual Chance Event:	$14,568,281		
6	Earthquake	500-Year MRP:	$53,909,841	Rare	16
		2,500-Year MRP:	$953,595,152		
7	Coastal Erosion	Damage estimate not available		Frequent	3
7	Infestation	Damage Estimate not available(2)		Rare	3
8	Expansive Soils	Damage estimate not available		Occasional	6
9	Wildfire	GBS RCV in Interface/Intermix	$2,215,187,959	Occasional	0
9	Drought	No measurable impact to property		Occasional	0

a. *Building damage ratio estimates based on FEMA 386-2 (August 2001)*

b. The valuation of general building stock and loss estimates was based on the custom inventory developed for Suffolk County and probabilistic modeling results and exposure analysis as discussed in Section 5.

c. The earthquake and hurricane wind hazards were evaluated by Census tract. The Census tracts do not exactly align with municipal boundaries; therefore, a total is reported for each Town inclusive of the Villages and the Tribes within the Town boundary.

d. Frequent = Hazard event that occurs more frequently than once in 10 years; Occasional = Hazard event that occurs from once in 10 years to once in 100 years, Rare = Hazard event that occurs from once in 100 years to once in 1,000 years; None = Hazard event that occurs less frequently than once in 1,000 years

e. The estimated potential losses for Nor'Easter and Severe Storm are from the HAZUS-MH probabilistic hurricane wind model results. See footnote c.

CEHA = Coastal Erosion Hazard Area
GBS = General building stock
MRP = Mean return period
RCV = Replacement cost value

Note (1): The Shallow Groundwater hazard has caused significant damages to private properties within theTown of Smithtown. Refer to Section 9.34.3 and Table 9.34-2, as well as Mitigation Action Worksheet for LOI#1446. The Town of Smithtown has quantified damages using FEMA-accepted methodology for purposes of BCA calculations for prior and pending Hazard Mitigation Grant Projects Completed and Pending Applications.

Note (2): The infestation hazard causes damages to wetlands and stream beds in the form of invasive plant species by restricting natural drainage capacity, thereby aggravating the Flood and Shallow Groundwater Hazards. Invasive plant species, such as bamboo, are also actively causing damage to residential septic systems. Damages have not been quantified at this time.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the municipality.

Table 9.32-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)	# Polices in 500-Boundary (3)	# Policies Outside the 500-year Flood Hazard (3)
Town of Smithtown	337	288	$1,135,162	3	0	4	1	332

Source: FEMA Region 2, 2014
Note (1): Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of January 31, 2014. Please note the total number of repetitive loss properties excludes the severe repetitive loss properties. The number of claims represents the number of claims closed by January 31, 2014.
Note (2): Information regarding total building and content losses was gathered from the claims file provided by FEMA Region 2.
Note (3): The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file. FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

Table 9.32-5a. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event			Potential Loss from 0.2% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent(2)	Percent Structure Damage	Percent Content Damage	Days to 100-Percent(2)
Long Beach Marine Response Facility	Public Safety response HQ for Long Island Sound	X							
Kings Park Bluff Boat Launch and Ramp	Transfer point from Long Island Sound to area hospitals	X							
Callahan's Beach Communications Tower	Emergency Communications		X						

Source: HAZUS-MH 2.1
Note: x = Facility located within the flood boundary.
(1) HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).
(2) In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type.
(3) In some cases, a facility may have losses and vulnerabilities not detected by HAZUS-MH for a variety of reasons due to standard modeling constraints and needs to improve the federal datasets the models are built on. The local jurisdictions of the Village of Nissequogue and the Town of Smithtown have documented that damages to the marina, building, and contents have occurred in the past.

Several of the planning partners, including the Town of Smithtown, provided specific parcel data for identified critical properties. HAZUS-MH does not estimate potential exposure or loss at the parcel level. Therefore, an exposure analysis was completed to identify the amount of land exposed in the floodplain. Table 9.32-5b below summarizes results of the exposure analysis.

Table 9.32-5b Planning Partner Property Specific Exposure Analysis

Entity/Type	Jurisdiction	Total Acres of Critical Properties	Acres Exposed		% of Total Exposed	
			1% Event	0.2% Event	1% Event	0.2% Event
Town of Smithtown Parks	Smithtown (T)	1,382.0	180.7	2.9	13.1%	0.2%

Source: FEMA, 2009; Town of Smithtown; Suffolk County Water Authority

Other Vulnerabilities Identified by Municipality

In addition to those identified above, the municipality has identified the following vulnerabilities:

- Shallow Groundwater Hazard in the Northeast Branch of the Nissequogue corridor is plaguing residents. There is a segment of the Northeast Branch within the Village of the Branch that is the subject of a pending Hazard Mitigation grant application, submitted under a partnership with the County of Suffolk Department of Public Works. Until this project is both funded and completed,

further work on the downstream stream segments cannot even begin. Any type of preliminary engineering or environmental assessments or feasibility studies to continue the Town's successful efforts to remediate the Shallow Groundwater Hazard in the Nissequogue and Northeast Branch corridors would have to be based on the final as-built elevations of the stream bed from the Village/County project

- The Long Beach community in the Village of Nissequogue is on a peninsula with only one access road, Long Beach Road, which is subjected to repetitive tidal flooding a minimum of 24 times of year. Located within the community is a Town-owned and operated critical marine response facility. The facility is part of the U.S. Coast Guard Homeland Security Protocols for the protection of Long Island Sound, including, but not limited to, the protection of the electric power grid serving Suffolk County, the Interstate Bridgeport-Port Jefferson Ferry, and the Northville Fuel Terminal which is a critical source of fuel for daily and emergency operations throughout Suffolk County. The Town, in partnership with the Village, continuously seeks funding to implement long-term solutions to enhance the disaster resistance of this community and this facility, including the current initiatives to elevate Long Beach Road and improve back-up power to the marine response facility that are cited elsewhere in this Plan.
- Stormwater and debris management are challenges throughout the Town and are exacerbated by most natural hazards
- The Town notes that floodplain management is impacted in both the Town and all three Villages within their boundaries by a lack of comprehensive, localized FEMA Flood Insurance Studies of the Northeast Branch of the Nissequogue River and Stony Brook Harbor.
- The Town has been seeking technical and fiscal assistance in building its communications and information technology operations in order to ensure that hazard mitigation planning can be incorporated into existing planning mechanisms and daily operations. Strengthening of these networks would ensure continuity of operations, enhance emergency preparedness and response, and protect against damages to municipal and private infrastructure.

9.32.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

Planning and regulatory capability
Administrative and technical capability
Fiscal capability
Community classification
National Flood Insurance Program
Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the municipality.

Table 9.32-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Y/N)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, date of adoption, name of plan, explanation of authority, etc.)
Building Code	Yes	Local		Town Bldg Code adopted 1964 w/amendments – Ch 112. and NYS Codes.
Zoning Ordinance	Yes	Local		Zoning Code adopted 1964; with amendments – Ch 322, Town Code
Subdivision Ordinance	Yes	Local		Subdivision of Land adopted 1964 with amendments -- Chapter 248; Town Code
Special Purpose Ordinances	Yes	Local		Headings/Sections incorporated in the Town Zoning Code adopted 1964; with amendments.
Growth Management				Included in Master Plan
Floodplain Management / Basin Plan	Yes	Local		Zoning Code adopted 1964; with amendments -- Article V; Ch 322: regulations for development with a flood hazard zone.
Stormwater Management Plan/Ordinance	Yes	Local		Town Code Chapter 153 - adopted 2010
Comprehensive Plan / Master Plan	Yes	Local		Established in 1959. Revision underway
Capital Improvements Plan	Yes	Local		10 year capital budget reviewed annually.
Site Plan Review Requirements	Yes	Local		Sections incorporated in the Town Zoning Code adopted Jan, 1966.
Habitat Conservation Plan				Included in Master Plan
Economic Development Plan				
Emergency Response Plan	Yes	Local	Maintained by Dept. of Public Safety	Updated Annually.
Shoreline Management Plan	Yes	Local		Environmental Quality and Coastal Consistency Review adopted 1989 as L.L. No. 2-1989. Adopted to Implement the town's Local

Tool / Program (code, ordinance, plan)	Do you have this? (Y/N)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, date of adoption, name of plan, explanation of authority, etc.)
				Waterfront Revitalization Program
Post Disaster Recovery Plan	Yes	Local		Outlined in Town Emergency Mgt. Plan; updated/reviewed annually.
Post Disaster Recovery Ordinance				
Real Estate Disclosure req.				
Other (e.g. steep slope ordinance, local waterfront revitalization plan)	Yes	Local		Fire Prevention Law LL#4-1990;
NFIP Flood Damage Protection Ordinance	Yes	Local		Town Code Chapter 168, Flood Damage Prevention, adopted 2009
NFIP - Freeboard	Yes	Local		State mandated BFE+2 for single and two-family residential construction, BFE+1 for all other
NFIP - Cumulative Substantial Damages				
Coastal Erosion Control Districts	Yes	Local		Erosion Control Ord. adopted 2006. Repealed and New Law adopted 2010

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Town of Smithtown.

Table 9.32-7. Administrative and Technical Capabilities

Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/Position
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Panning Dept. and Engineering Dept.
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Building Dept., Engineering Dept.
Planners or engineers with an understanding of natural hazards	Yes	Engineering Department
NFIP Floodplain Administrator	Yes	The Town Planning Department director serves as the "Flood Hazard Permit Administrator"
Surveyor(s)	Yes	Engineering Dept.
Personnel skilled or trained in "GIS" applications	Yes	Engineering Dept. And Planning Dept.
Scientist familiar with natural hazards in the municipality.	No	None on Staff
Emergency Manager	Yes	Department of Public Safety/Director
Grant Writer(s)	Yes	Engineering Dept, Planning Dept, Public Safety Dept, Environmental Dept., Private Consultant
Staff with expertise or training in benefit/cost analysis	Yes	Comptroller's Office And Engineering Dept.
Professionals trained in conducting damage assessments	Yes	Public Safety chief assembles a team of personnel from the Engineering Department, Planning Department, and Building Department to address the property of concern.

Fiscal Capability

The table below summarizes financial resources available to the Town of Smithtown.

Table 9.32-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community Development Block Grants (CDBG)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact Fees for homebuyers or developers of new development/homes	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Mitigation grant programs	Yes
Other	Yes

Community Classifications

The table below summarizes classifications for community program available to the Town of Smithtown.

Table 9.32-9. Community Classifications

Program	Classification	Date Classified
Community Rating System (CRS)	Not Participating	N/A
Building Code Effectiveness Grading Schedule (BCEGS)	9/9	2006
Public Protection	3	-
Storm Ready	Not Participating	N/A
Firewise	Not Participating	N/A

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule

- The ISO Mitigation online ISO's Public Protection website at http://www.isomitigation.com/ppc/0000/ppc0001.html
- The National Weather Service Storm Ready website at http://www.weather.gov/stormready/howto.htm
- The National Firewise Communities website at http://firewise.org/

National Flood Insurance Program

The following section provides details on the National Flood Insurance Program (NFIP) as implemented within the municipality:

NFIP Floodplain Administrator: Frank DeRubeis, Town of Smithtown Director Planning and Community Development. The Town has a full-time staff position (currently Allyson Murray) occupied by a planner and GIS specialist who works under Mr. DeRubeis, and whose daily functions are dedicated to comprehensive land use activities such as administration of the requirements of the NFIP and the Town's Local Waterfront Revitalization Program (LWRP), as well as continuously updating the Town's various comprehensive land use plans and programs. The approach Smithtown and the Villages take to floodplain management is a team approach. Many personnel across diverse backgrounds assist on ensuring issues within the floodplain are addressed completely.

Program and Compliance History

Town of Smithtown joined the NFIP on December 1, 1978, and is currently an active member of the NFIP. The current effective Flood Insurance Rate Maps are dated September 25, 2009. The community's Flood Damage Prevention Ordinance (FDPO), found at Chapter 168 of the local code, was last updated in 2009.

As of January 31, 2014 there are 337 policies in force, insuring $95,100,900 of property with total annual insurance premiums of $164,858. Since January 31, 2014, 288 claims have been paid totaling $1,135,162. As of January 31, 2014 there are 3 Repetitive Loss and no Severe Repetitive Loss properties in the community.

The community is currently in good standing in the NFIP and has no outstanding compliance issues. The current NFIP Floodplain Administrator has no knowledge of when the last CAV was performed. The municipality sees no specific need for a CAV at this time.

Loss History and Mitigation

Since January 31, 2014, 288 claims have been paid totaling $1,135,162. As of January 31, 2014 there are 3 Repetitive Loss and no Severe Repetitive Loss properties in the community.

Minimal damage was sustained to properties following Hurricane Sandy due to flooding. More damage occured as a result of wind damage to trees and structures. The Town maintained an inventory of property owners who approached the Town with loss information. While some properties outside of the designated floodplain required general building permits, no properties within the flood hazard zone were damaged to the extent that they required floodplain development permits to rebuild.

Should Substantial Damage determinations become necessary, the Director of Public Safety would assemble an inter-disciplinary team of personnel from the Engineering Department, the Planning Department, the Building Department, and the Fire Marshal Division to address the properties of concern.

Planning and Regulatory Capabilities

The communities Flood Damage Prevention Ordinance (FDPO) was last updated in 2009, and is found at Chapter 168 of the local code.

Floodplain management regulations and ordinances meet the FEMA and New York State minimum requirements. The Town of Smithtown has a Local Waterfront Revitalization Program that addresses and enforces stringent land use and development guidelines. Zoning ordinances also restrict inappropriate development within environmentally sensitive areas.

Administrative and Technical Capabilities

The community FDPO identifies the Director of Planning and Community Development as the local NFIP Floodplain Administrator, currently Frank DeRubeis, for which floodplain administration is an auxiliary duty. However, The Town has a full-time staff position (currently Allyson Murray) occupied by a planner and GIS specialist who works under Mr. DeRubeis, and whose daily functions are dedicated to comprehensive land use activities such as administration of the requirements of the NFIP and the Town's Local Waterfront Revitalization Program (LWRP), as well as continuously updating the Town's various comprehensive land use plans and programs. The Town also has a full-time staff position, currently located in the Engineering Department, dedicated to managing special capital and regulatory projects, including Hazard Mitigation Program Planning and Implementation and Geographic Information Systems.

In addition to the positions described above, the community has supplementary staff for which NFIP is an auxiliary duty; personnel include the Director of Planning and the Planning Department, Department of Public Safety, Department of Engineering, and the Building Department.

Duties and responsibilities of the NFIP Administrator are permit review, emergency preparation, code enforcement, fire marshal, training staff in structural review, New York State Building and Fire Code, GIS training for coastal land use, FEMA procedures, hazard mitigation, flood mitigation, and inspections. The entire Floodplain staff assists on these tasks together.

Lists are maintained of the properties that are damaged, however no tracking has been necessary for property owners interested in mitigation. If Substantial Damage determinations were necessary, the Public Safety chief would assemble a team of personnel from the Engineering Department, Planning Department, the Building Department, and the Fire Marshal Division to address the property of concern.

Mr. DeRubeis has received training in many aspects of floodplain administration, land use and other related training regularly in the past. He and his staff are adequately trained to fulfill the responsibilities of the municipal floodplain administrator. Mr. DeRubeis is not certified in floodplain management, however a wide array of expertise on the floodplain management team provides ample support for the role.

Public Education and Outreach

In the Town of Smithtown the following educational and/or outreach activities related to the NFIP: information postings on website, custom programming on their own Smithtown TV station, distributing FEMA/NFIP brochures throughout the Town, and town forums open to the public where these topics can be addressed. Special Districts such as Schools, Library and Fire Districts conduct their own independent public outreach activities.

Duties and responsibilities of the NFIP Administrator are permit review, emergency preparation, code enforcement, fire marshal, training staff in structural review, New York State Building and Fire Code, GIS training for coastal land use, FEMA procedures, hazard mitigation, flood mitigation, and inspections. Several Town staff members, including those described above, comprise a floodplain management team, ensuring the public is adequately served.

Actions to Strengthen the Program

To fully implement the floodplain management program in the Town of Smithtown, additional areas in the Northeast Branch of the Nissequogue River, the Nissequogue River, and Stony Brook Harbor need to become to subjects of localized FEMA Flood Insurance Studies so that they can be more accurately mapped. Flooding impacts in these areas are unknown and there could be unmet needs for additional flood insurance policies. Additional training and information regarding floodplain management would be welcomed. The benefit of joining the Community Rating System (CRS) to the Town of Smithtown is low as, from their current knowledge of the program, it appears to cost more money to join than policy holders would see in a reduction of their premiums.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

It is the intention of this municipality to incorporate hazard mitigation planning and natural hazard risk reduction as an integral component of ongoing municipal operations. The following textual summary and table identify relevant planning mechanisms and programs that have been/will be incorporated into municipal procedures, which may include former mitigation initiatives that have become continuous/on-going programs and may be considered mitigation "capabilities":

- **Floodplain Management-** Flood prevention in at risk/prone areas including: Lake Ronkonkoma, Mills Pond, Millers Pond, Nissequogue River corridor
- **Continuity of Operations (COOP) Plan-** Update/maintain emergency communications systems and capability town-wide.
- **Stormwater Management** - The Town of Smithtown has recently completed a new Stormwater Management Program Plan (Town Board adoption pending) for implementation of the NYSDEC SPDES Permits for Stormwater Discharges from Municipals Separate Storm Sewer Systems (MS4s) and Construction Activities, which contains comprehensive analysis of the Town's Stormwater Management infrastructure.
- **Public Education and Outreach** - The Town of Smithtown has conducted public information activities, including producing TV spots for our Town's Smithtown TV station and making information available on our website, over the past 5 years to educate homeowners about the shallow groundwater hazard, and what they can do to help reduce damages.
- **Floodplain Management/Infrastructure Protection-** Retrofit erosion-prone areas that are considered to be critical infrastructure including the Kings Park Bluff
- **Floodplain Management/Infrastructure Protection-**Retrofit flood-prone roadways that are considered to be critical infrastructure
- **Building Code Ordinances, and Enforcement-** Continue/enhance on-going stormwater management facility maintenance program.
- **Building Code Ordinances, and Enforcement/Floodplain Management-** Consider non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as repetitive loss, such as acquisition/relocation, or elevation depending on feasibility. The parameters for feasibility for this initiative would be: funding, benefits versus costs and willing participation of property owners.
- **Building Code Ordinances, and Enforcement-** Develop and/or enhance the current stormwater management system to be in compliance with federal and state regulations such that there will be a net reduction in the flood risk caused by stormwater impacts.

Table 9.32-10. Planning Mechanisms

Planning Mechanisms	Has Been Utilized	Will Be Utilized
Operating Budget When constructing upcoming budgets, Hazard Mitigation Actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the Hazard Mitigation goals and objectives.	X	X
Capital Improvement Budget When constructing upcoming budgets, Hazard Mitigation Actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the Hazard Mitigation goals and objectives.	X	X
Human Resource Manual Employee job descriptions may contain Hazard Mitigation Actions.		

Planning Mechanisms	Has Been Utilized	Will Be Utilized
Building and Zoning Ordinances A variety of building and zoning regulations are used to restrict the uses of land and establish building specifications. Prior to land use, zoning changes or development permitting the city will review the hazard mitigation plan and other hazard analysis to ensure consistent and compatible land use.	X	X
Comprehensive Land Use Plan A land use plan is intended to identify land use issues and to make recommendations on how to address these issues. When applicable the city will incorporate Hazard Mitigation Actions in the development and extent of the regulations.		X
Grant Applications Data and maps will be used as supporting documentation in grant applications	X	X
Municipal Ordinances When updating municipal ordinances Hazard Mitigation will be a priority.		X
Fire Plan The Hazard Mitigation Plan will be used as a resource for the development of future Fire Plans.		
Capital Improvement Planning The municipality will establish a protocol to review current and future projects for hazard vulnerability. The will incorporate hazard resistant construction standards into the design and location of projects.		
Day to Day Operations Incorporate Hazard Mitigation Actions in daily operations and all projects will be a goal of the municipality.		X
Local School Service Projects The municipality to work closely with the local school district and assist with community service projects for the service organizations. Several of the municipality's Hazard Mitigation Actions can be implemented as a joint project with the school district.		
Municipal Budget Adopted annually Municipality will look at Mitigation Actions when allocating funding.		
Economic Development The local economic development group will utilize the identification of hazard areas when assisting new business in finding a location.	X	X

9.32.6 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2008 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.

Table 9.32-11. Past Mitigation Initiative Status

Description	Status	Review Comments
S-1: Update and enhance Smithtown's existing Emergency management Plan	Continuous	A current capability. Not carried over.
S-2: Continue/enhance on-going stormwater management facility maintenance program.	Continuous	Carried over in refined format
S-3: Retrofit flood-prone roadways that are considered to be critical infrastructure	Continuous	Carried over in refined format
S-4: Flood prevention in at risk/prone areas including: Lake Ronkonkoma, Mills Pond, Millers Pond, Nissequogue River corridor	Continuous	Carried over in refined format
S-5: Update/maintain emergency communications systems and capability town-wide.	Continuous	Carried over in refined format
S-6: Obtain Federal, State training in benefit/cost analysis	Continuous	A current capability. Not carried over
S-7: Consider non-structural flood hazard mitigation alternatives for at risk properties within the floodplain, including those that have been identified as repetitive loss, such as acquisition/relocation, or elevation depending on feasibility. The parameters for feasibility for this initiative would be: funding, benefits versus costs and willing participation of property owners.	Continuous	The Town applied for a Hazard Mitigation grant to retrofit residents' basements in one of the shallow groundwater areas. The grant was received and successfully completed by the Town. Due to personal issues and program constraints, however, only some of the residents included continued with the program to the end, even though the Town provided considerable financial and social resources to support the residents. An amended version of this initiative is being carried forward in the updated strategy. Implementation is supported by specific initiatives in the updated strategy, including participation in related county-led initiatives.
S-8: Support county-wide initiatives identified in Section 9.1 of the Suffolk County Annex.	Continuous	A modified version of this initiative is being carried forward, identifying willingness to participate in multi-jurisdictional initiatives
S-9: Consider the development of a post-disaster action plan, including a debris management plan. This to be incorporated into existing emergency management plans.	Continuous	A modified version of this initiative is being carried forward, identifying lwillingness to participate in multi-jurisdictional initiatives
S-10: Consider participation in incentive-based programs such as CRS and "Storm Ready"	Continuous	The Town has included an initiative to support county-led initiatives, which include programs to enhance floodplain management capabilities. The Town will attend a CRS workshop if offered locally.

Description	Status	Review Comments
S-11: Retrofit erosion-prone areas that are considered to be critical infrastructure including the Kings Park Bluff	In Progress	We experienced a setup on this item due to Hurricane Sandy and lack of reimbursement from FEMA for beach replenishment. Carried over in refined format
S-12: Develop and/or enhance the current stormwater management system to be in compliance with federal and state regulations such that there will be a net reduction in the flood risk caused by stormwater impacts.	Continuous	The Town applied for, received, and successfully completed a Hazard Mitigation Grant Project which structurally increased the drainage capacity in a neighborhoood adjacent to the Northeast Branch Corridor. Carried over in refined format
S-13: Continue to support the implementation, monitoring, maintenance and updating of this Plan, as defined in Section 7.0	Continuous	This initiative is being removed from the updated mitigation strategy as it refers to activities that are an ongoing and normal part of Town operations. The Town has fully participated in the 2014 update to this plan.
S-14: Strive to maintain compliance with and good-standing in the National Flood Insurance program.	Continuous	This initiative is being removed from the updated mitigation strategy, and identified as a mitigation capability as it refers to activities that are an ongoing and normal part of Town operations. Initiatives that enhance local floodplain management capabilities and participation in the NFIP have been identified in the Town's updated mitigation strategy.
S-15: Enforce the seismic design provisions in the Building Code of New York State in the planning stage.	Continuous	The Town has indicated that it will participate in and support the activities of the county-led multi-jurisdictional seismic safety committee.

Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

- The Town of Smithtown has recently completed a new Stormwater Management Program Plan (Town Board adoption pending) for implementation of the NYSDEC SPDES Permits for Stormwater Discharges from Municipals Separate Storm Sewer Systems (MS4s) and Construction Activities, which contains comprehensive analysis of the Town's Stormwater Management infrastructure
- The Town of Smithtown has conducted public information activities, including producing TV spots for our Town's Smithtown TV station and making information available on our website, over the past 5 years to educate homeowners about the shallow groundwater hazard, and what they can do to help reduce damages.
- The Town of Smithtown has successfully completed two projects related to restoring the natural drainage capacity of the Northeast Branch of the Nissequogue River in the past five years. Projects entailed removing accumulated sediments from roadway runoff, installing upstream drainage improvements to prevent future accumulation of sediment, restoring a consistent hydraulic downgrade, and remediation of invasive species to prevent other negative impacts on the drainage capacity and flow velocity. Based on continuous monitoring of area groundwater levels and feedback from residents adjacent to the project area, the project has had an impact on reducing losses to private properties in the area.
- The Town of Smithtown has installed and/or upgraded back-up power mechanisms at various Town facilities critical to continuity of operations.

Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Smithtown identified mitigation initiatives they would like to pursue in the future. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Table 9.32-12 identifies the municipality's updated local mitigation strategy.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.32-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.

Table 9.32-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Time-line	Priority	Mitigation Category
ST-1 (Sandy HMGP LOI #1156)	Town of Smithtown Emergency Communications.	Future and Existing Structure	All Hazards	2,3,7,12,13,14,15,16	See Action Worksheet (Smithtown_LOI 1156_040214_LEF)						
ST-2 (Sandy HMGP LOI #1445)	Town of Smithtown Regional Fueling Facility.	Existing Structure	All Hazards	3,5,7,12,13,14,16	See Action Worksheet (Smithtown_LOI 1445_040214_LEF)						
ST-3 (Sandy HMGP LOI #1446)	Hauppauge - Mount Pleasant Road - Nissequogue Corridor Flood Relief.	Existing Structure	Shallow Groundwater, Flooding, Nor'Easter, Severe Storm, Severe Winter Storm	2,5,11,14,15,16,17	See Action Worksheet (Smithtown_LOI 1446_032414_LEF)						
ST-4 (Sandy HMGP LOI #2226)	Town of Smithtown Back-up Power for Marina Fueling Facility.	Existing Structure	All Hazards	2,7,12,13,14,15,16	See Action Worksheet (Smithtown_LOI 2226_032414_LEF)						
ST-5 (Sandy HMGP LOI #131)	Elevation of Long Beach Road.	Existing Structure	Flooding, Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm, Coastal Erosion	2,3,5,7,13,14,15,16	See Action Worksheet (Smithtown_Nissequogue_LOI 131_032414_LEF)						
ST-6 (former	Enhance on-going stormwater management facility maintenance program to identify areas of the Town which could be prioritized for increased attention to better handle natural events with flooding components										

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Time-line	Priority	Mitigation Category
ST-2)	See above	Existing	Nor'Easters; Severe Winter Storms; Hurricane; Flooding; Severe Storms; Shallow Groundwater	2, 5, 14, 15, 16, 17	Town of Smithtown	High	cannot be quantified at this time	If minimal, may be accomplished using existing funding. More major improvements may require outside sources of funding.	Short Term OG	High	LPR SIP
ST-7 (former ST-3)	Assess, prioritize roadways and implement, as funding becomes available, retrofits to roadways to reduce potential future losses										
	See above	Existing	Nor'Easters; Flooding; Shallow Groundwater	2, 5, 7, 12, 13, 14, 15, 16, 17	Town of Smithtown	Medium	High	Possible grant applications	Medium Term OG	Medium	SIP
ST-8 (former ST-4)	Assess and prioritize needed flood prevention projects in the following risk/prone areas: Lake Ronkonkoma, Mills Pond, Millers Pond, Stony Brook Harbor, and Nissequogue River corridors. Implement improvements as funding becomes available.										
	See above	Both	Nor'Easters; Severe Winter Storms; Hurricane; Flooding; Severe Storms; Shallow Groundwater; Coastal Erosion	2, 5, 7, 12, 13, 14, 15, 16, 17	Town of Smithtown; County of Suffolk; New York State	High	High	Possible grant applications or shared service agreements	Long Term	Medium	SIP NRP
ST-9 (former ST-5)	Develop feasibility studies and engineering plans for a variety of radio communication and interoperability upgrades necessary for the Town to be compliant with the American Public Safety Communications Officials (APCO) Project 25 Standard. Communications systems which adhere to this standard will enhance emergency response, thereby reducing the severity and duration of losses from some natural hazards.										
	See above	Both	All	2, 5, 7, 12, 13, 14, 15, 16	Town of Smithtown	High	Medium	Not determined at this time	Medium Term	High	SIP
ST-10 (former ST-7)	Inventory any private properties which have reported severe repetitive damages from natural hazards, for example coastal erosion, flooding and/or shallow groundwater. Evaluate surrounding existing conditions by using available and creating new engineering and planning data, surveys and GIS analysis. Consider the costs and benefits of mitigation measures such as municipal public improvements, acquisition, relocation, and/or structural retrofits. Develop a list of project proposals, prioritized using methods including FEMA Benefit Cost Analysis										

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Time-line	Priority	Mitigation Category
	See above	Existing	All Hazards	1, 2, 3, 5, 6, 14, 15	Town of Smithtown, FEMA, NFIP	Range	Range	Un-determined	Long Term OG	Medium	SIP NRP EAP LPR
ST-11 (former ST-8)	As capabilities permit, support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically it is acknowledged that opportunities for multi-jurisdictional partnership may be beneficial to enhance the following: • Natural hazard awareness and personal scale risk reduction/mitigation public education and outreach programs • Post-disaster assessment and recovery capabilities • Debris Management • Outreach to private property owners to improve understanding of damage history and create interest in mitigation activities • Regional, county and local capabilities to manage seismic risk, both pre- and post-disaster • Coordination of critical response operations with public/private utility companies • Alignment of Mitigation Initiatives through all levels of Government (effort to build State and Federal level recognition and support of the County and local hazard mitigation planning strategies identified in this plan)										
	See above	All	All Hazards	1, 3, 7, 14, 15	Ten Towns of Suffolk County, in partnership with County of Suffolk and the Villages	Range	Range	Un-determined	OG	Medium	LPR
ST-12 (former ST-9)	Consider the costs versus benefits of a post-disaster action plan which provides comprehensive procedures for damage assessment, debris management, and considers involving partners from the business community or/and non-profits to assist the Town as necessary. The plan would be incorporated into the existing emergency management plans. Investigate funding sources for said plan.										
	See above	Both	All	1, 3, 7, 8, 10, 14, 15	Town of Smithtown; possible partnership with Suffolk County; support Villages of Head of the Harbor, Nissequogue, and The Branch	Medium	Low	Un-determined	Medium Term OG	Medium	LPR
ST-13	Participate in any locally-offered educational training opportunities Consider regarding participation in incentive-based programs such as, CRS and “Storm-Ready.										

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Time-line	Priority	Mitigation Category
(former ST-10)	See above	Both	Flood, Nor'Easter, Hurricane, Severe Weather	1,2,3,7,13	Town of Smithtown; possible partnership with Suffolk County; support Villages of Head of the Harbor, Nissequogue, and The Branch	Low	Low	Existing	Long Term	Low	LPR
ST-14 (former ST-11)	Continue to assess and identify erosion-prone areas in need of repair, replenishment and/or retro-fit that are critical to mitigate potential future losses, including Kings Park Bluff. Prioritize needed erosion control projects. Implement solutions as funding becomes available.										
	See above	Existing	Nor'Easters; Severe Winter Storms; Hurricane; Flooding; Severe Storms; Coastal Erosion	2, 3, 5, 14, 15, 16, 17	Town of Smithtown; possible dependencies on Suffolk County or New York Sate	Medium	High	Potential grant applications	Long Term	Medium	SIP NRP
ST-15 (former ST-12)	Inventory areas of the Town that are subject to repetitive losses from surface, groundwater and/or tidal flooding. Evaluate potential improvements to stormwater management and/or other municipal infrastructure which could mitigate said losses. Perform feasibility studies, develop designs and implement projects as funding becomes available.										
	See above	Existing	Nor'Easters; Severe Winter Storms; Hurricane; Flooding; Severe Storms; Coastal Erosion; Shallow Groundwater; Expansive Soils	1,2,3,5,10, 11, 14, 15, 16, 17	Town of Smithtown	Range	Range	Un-determined	Medium Term OG	High	SIP NRP
ST-16 (NEW)	Map and evaluate all existing bridges/culverts under Town jurisdiction; develop project concepts to increase structural stability & drainage capacity of culverts significant to stormwater conveyance & supporting critical evacuation and response routes										
	See above	Existing	Nor'Easters; Flooding; Shallow Groundwater	2, 5, 7, 12, 13, 14, 15, 16	NYSDOT, NYS Parks, SCDPW Highways, NYSDEC	Medium	Medium	Possible PDM application	Medium Term OG	Medium	SIP NRP
ST-17 (NEW)	Institute a stream-clearing program to restore habitats of freshwater lakes, ponds, swamps and rivers by reducing invasive species, trash, excess sediment, etc. to restore natural drainage capabilities. Seek funding sources to make this a permanent program for all tributaries of the Nissequogue, Northeast Branch, and Lake Ronkonkoma										

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Time-line	Priority	Mitigation Category
	See above	Existing	Nor'Easters; Hurricane; Flooding; Severe Storms; Shallow Groundwater	2, 5, 7, 8, 10, 11, 13, 15, 16	NYSDEC, SCDPW Vector Control	High	Medium	Possible PDM application	OG	High	NRP
ST-18 (NEW)	Enhance Town Geographic Information Systems datasets and software capabilities to support critical infrastructure mapping and emergency preparedness planning										
	See above	Both	All	1, 3, 7, 12, 13, 14, 15, 16	Town	High	Medium	Town	Short Term	High	SIP EAP
ST-19 (NEW)	Design and install back-up power systems, including but not limited to emergency generators, at all Town facilities critical to disaster resilience and emergency response										
	See above	Existing	All	2, 3,7,14,15, & 16	Town	High	Medium	Town; Possible grant application	Short	High	SIP
ST- 20 (NEW)	Design and install back-up power systems, including but not limited to emergency generators at all communications facilities critical to maintaining continuity of disaster resilience and emergency response operations										
	See above	Both	All	2, 3,7,14,15, & 16	Town	High	Medium	Town; Possible grant application	Short	High	SIP
ST-21 (NEW)	Assess and prioritize necessary improvements to ensure continuous quality internal communications infrastructure of Town Agencies, especially those related to disaster resilience and to ensure continuity of operations during natural disasters										
	See above	Both	All	1,3,7,12, 13, 14,15, & 16	Town	High	High	Town; Possible grant application	Medium DOF	High	SIP
ST-22 (NEW)	Assess and prioritize necessary improvements to internal technology infrastructure of Town Agencies, to enhance operations related to disaster resilience and to ensure continuity of operations during natural disasters										
	See above	Both	All	1,3,7,12, 14,15, & 16	Town		High	Town; Possible grant application	Medium DOF	High	SIP
ST-23 (NEW)	Seek funding to create regional level infrastructure to support operations of all agencies who operate within Smithtown's geographical boundaries, including but not limited to Village Police Departments, Village & Town Public Works & Safety operations, County Police & Public Works operations, State operations, and Fire, Ambulance, & School Districts										
	See above	Both	All	1, 3, 7, 12, 13, 14, 15, & 16	Town	High	High	Town; Possible grant application	Long Term	Medium	SIP EAP

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures	Hazard(s) Mitigated	Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Time-line	Priority	Mitigation Category
ST-24 (NEW)	Partner with other agencies, such as the Villages within Smithtown, the County of Suffolk and the State of New York in their efforts to restore the natural drainage capacity and a functional hydraulic grade of the Nissequogue River and all of its tributaries.										
	See above	Existing	Nor'Easters; Hurricane; Flooding; Severe Storms; Shallow Groundwater	2,5, 10, 11, 13, 15, 16	Town, County, Villages, NYS, SCWA	High	High	Town, County, possible grant applications	Medium Term OG	High	NRP
ST-25 (NEW)	Evaluate, prioritize and upgrade recharge basins which are part of the Town's stormwater management system to ensure their storage and overflow capacities are sufficient for anticipated storm events, as funding permits										
	See above	Existing	Nor'Easters; Hurricane; Flooding; Severe Storms; Shallow Groundwater	2,5, 10, 11, 13, 15, 16	Town	Range	Range	Town; Possible grant application	Short Term OG	High	SIP NRP
ST-26 (NEW)	Evaluate Town codes related to tree trimming, tree removal and disposal of tree cuttings.										
	See above	Both	Nor'Easters, Hurricane, Severe Storms, Winter Storms, Coastal Erosion	1, 3,4, 6, 7, 8, 10, 13, 14, 15, 16	Town	High	Low	Existing	Short Term	High	LPR
ST-27 (NEW)	Assess the cost versus benefits of developing a Post-Disaster Recovery Plan as well as investigate the funding opportunities available.										
	See above	Both	All	1, 3, 4, 5, 6, 7, 14, 15	Town, Villages	Medium	Medium	Un-determined	Medium	Medium	LPR
ST-28 (NEW)	Work with community stakeholders and non-profits to ensure they are aware of and have access to mitigation and preparation education and resources, in accordance with the Town's existing Emergency Management Plan										
	See above	Both	All	1, 3, 4, 5, 6, 7, 14, 15	Town, Villages	Medium	Low	Town	OG	Medium	EAP
ST-29 (NEW)	Continue to use the Suffolk County Department of Public Works CP 5013 Report entitled Drainage Improvements including Groundwater Relief created by H2M Group March 1980 as a guide for surface and groundwater flooding in the Nissequogue and Northeast Branch corridors. Evaluate and improve recommendations in regards to current data available. Implement solutions as funding becomes available										
	See above	Both	Nor'Easters; Hurricane; Flooding; Severe Storms; Shallow Groundwater	2, 3, 5, 10, 11, 14, 15, 16, 17	Town, Villages	High	High	Possible grant application	Long Term	Medium	LPR NRP

Notes:

**Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.*

Costs:
Where actual project costs have been reasonably estimated:
Low = < $10,000
Medium = $10,000 to $100,000
High = > $100,000

Where actual project costs cannot reasonably be established at this time:
Low = Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium = Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High = Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:
Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:
Low = < $10,000
Medium = $10,000 to $100,000
High = > $100,000

Where numerical project benefits cannot reasonably be established at this time:
Low = Long-term benefits of the project are difficult to quantify in the short term.
Medium = Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High = Project will have an immediate impact on the reduction of risk exposure to life and property.

Timeline:
Short = 1 to 5 years
Long Term = 5 years or greater
OG = On-going program
DOF = Depending on funding

Notes (for Mitigation Category):

- *Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.*
- *Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.*
- *Natural Systems Protection (NRP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.*

Table 9.32-13 Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
ST-1 (Sandy HMGP LOI #1156)	Town of Smithtown Emergency Communications.	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
ST-2 (Sandy HMGP LOI #1445)	Town of Smithtown Regional Fueling Facility.	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12	High
ST-3 (Sandy HMGP LOI #1446)	Hauppauge - Mount Pleasant Road - Nissequogue Corridor Flood Relief.	0	1	1	1	1	1	0	0	1	1	1	1	1	1	11	Medium
ST-4 (Sandy HMGP LOI #2226)	Town of Smithtown Back-up Power for Marina Fueling Facility.	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
ST-5 (Sandy HMGP LOI #131)	Elevation of Long Beach Road.	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
ST-6 (former ST-2)	Enhance on-going stormwater management facility maintenance program to identify areas of the Town which could be prioritized for increased attention to better handle natural events with flooding components	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	High
ST-7 (former ST-3)	Assess, prioritize roadways and implement, as funding becomes available, retrofits to roadways to reduce potential future losses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Medium
ST-8 (former ST-4)	Assess and prioritize needed flood prevention projects in the following	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Low

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	risk/prone areas: Lake Ronkonkoma, Mills Pond, Millers Pond, Stony Brook Harbor, and Nissequogue River corridors. Implement improvements as funding becomes available.																
ST-9 (former ST-5)	Develop feasibility studies and engineering plans for a variety of radio communication and interoperability upgrades necessary for the Town to be compliant with the American Public Safety Communications Officials (APCO) Project 25 Standard. Communications systems which adhere to this standard will enhance emergency response, thereby reducing the severity and duration of losses from some natural hazards.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Medium
ST-10 (former ST-7)	Inventory any private properties which have reported severe repetitive damages from natural hazards, for example coastal erosion, flooding and/or shallow groundwater. Evaluate surrounding existing conditions by using available and creating new engineering and planning data, surveys and GIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Medium

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	analysis. Consider the costs and benefits of mitigation measures such as municipal public improvements, acquisition, relocation, and/or structural retrofits. Develop a list of project proposals, prioritized using methods including FEMA Benefit Cost Analysis																
ST-11 (former ST-8)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), as detailed in Table 9.32-12.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	High
ST-12 (former ST-9)	Consider the costs versus benefits of a post-disaster action plan which provides comprehensive procedures for damage assessment, debris management, and considers involving partners from the business community or/and non-profits to assist the Town as necessary. The plan would be incorporated into the existing emergency management plans. Investigate funding sources for said plan.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Medium
ST-13 (former ST-10)	Participate in any locally-offered educational training opportunities Consider regarding participation in	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Low

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	incentive-based programs such as, CRS and "Storm-Ready																
ST-14 (former ST-11)	Continue to assess and identify erosion-prone areas in need of repair, replenishment and/or retro-fit that are critical to mitigate potential future losses, including Kings Park Bluff. Prioritize needed erosion control projects. Implement solutions as funding becomes available.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Medium
ST-15 (former ST-12)	Inventory areas of the Town that are subject to repetitive losses from surface, groundwater and/or tidal flooding. Evaluate potential improvements to stormwater management and/or other municipal infrastructure which could mitigate said losses. Perform feasibility studies, develop designs and implement projects as funding becomes available.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	High
ST-16 (NEW)	Map and evaluate all existing bridges/culverts under Town jurisdiction; develop project concepts to increase structural stability & drainage capacity of culverts significant to stormwater conveyance & supporting critical	1	1	1	1	1	1	0	1	0	1	1	1	0	1	11	High

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	evacuation and response routes																
ST-17 (NEW)	Institute a stream-clearing program to restore habitats of freshwater lakes, ponds, swamps and rivers by reducing invasive species, trash, excess sediment, etc. to restore natural drainage capabilities. Seek funding sources to make this a permanent program for all tributaries of the Nissequogue, Northeast Branch, and Lake Ronkonkoma	0	1	1	1	1	1	0	1	0	0	1	1	1	1	10	High
ST-18 (NEW)	Enhance Town Geographic Information Systems datasets and software capabilities to support critical infrastructure mapping and emergency preparedness planning	1	1	1	1	1	1	0	0	0	1	1	1	1	1	11	High
ST-19 (NEW)	Design and install back-up power systems, including but not limited to emergency generators, at all Town facilities critical to disaster resilience and emergency response	1	1	1	1	1	1	0	1	0	0	1	1	1	0	10	High
ST- 20 (NEW)	Design and install back-up power systems, including but not limited to emergency generators at all communications facilities critical to maintaining	1	1	1	1	1	1	1	1	0	0	1	1	1	0	11	High

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	continuity of disaster resilience and emergency response operations																
ST-21 (NEW)	Assess and prioritize necessary improvements to ensure continuous quality internal communications infrastructure of Town Agencies, especially those related to disaster resilience and to ensure continuity of operations during natural disasters	1	1	1	1	1	1	1	0	0	1	1	1	1	0	11	High
ST-22 (NEW)	Assess and prioritize necessary improvements to internal technology infrastructure of Town Agencies, to enhance operations related to disaster resilience and to ensure continuity of operations during natural disasters	1	1	1	1	1	1	1	0	0	1	1	1	1	0	11	High
ST-23 (NEW)	Seek funding to create regional level infrastructure to support operations of all agencies who operate within Smithtown's geographical boundaries, including but not limited to Village Police Departments, Village & Town Public Works & Safety operations, County Police & Public Works operations, State operations, and Fire, Ambulance, & School	1	1	1	1	1	1	1	0	0	0	1	0	1	0	9	Medium

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	Districts																
ST-24 (NEW)	Partner with other agencies, such as Villages with Smithtown, Suffolk County and New York State, in their efforts to mitigate the restore the natural drainage capacity and a functional hydraulic grade of the Nissequogue River and all of its tributaries.	0	1	1	1	1	1	1	1	0	1	1	1	1	1	12	High
ST-25 (NEW)	Evaluate, prioritize and upgrade recharge basins which are part of the Town's stormwater management system to ensure their storage and overflow capacities are sufficient for anticipated storm events, as funding permits	0	1	1	1	1	1	1	1	0	1	1	1	1	1	12	High
ST-26 (NEW)	Evaluate Town codes related to tree trimming, tree removal and disposal of tree cuttings.	0	1	1	1	1	1	1	0	0	1	1	1	1	1	11	High
ST-27 (NEW)	Assess the cost versus benefits of developing a Post-Disaster Recovery Plan as well as investigate the funding opportunities available.	0	0	1	1	1	1	1	0	0	1	1	1	1	0	9	Medium
ST-28 (NEW)	Work with community stakeholders and non-profits to ensure they are aware of and have access to mitigation and preparation	0	0	1	1	1	1	1	0	0	0	1	1	0	0	7	Medium

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	education and resources, in accordance with the Town's existing Emergency Management Plan																
ST-29 (NEW)	Continue to use the Suffolk County Department of Public Works CP 5013 Report entitled Drainage Improvements including Groundwater Relief created by H2M Group March 1980 as a guide for surface and groundwater flooding in the Nissequogue and Northeast Branch corridors. Evaluate and improve recommendations in regards to current data available. Implement solutions as funding becomes available	0	1	1	1	1	1	0	1	0	0	1	0	1	1	9	Medium

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.

- *= Prioritization remained the same as the 2008 HMP.*

9.32.7 Future Needs To Better Understand Risk/Vulnerability

As indicated throughout this Plan, better FEMA Flood Insurance Study information is needed regarding the Nissequogue River, Northeast Branch, and Stony Brook Harbor. Risk Assessment and Analysis contained elsewhere in this plan for impacted jurisdictions including the Town of Smithtown, the Village of Head of the Harbor, the Village of Nissequogue, and the Village of the Branch is based on best available data that is in a format suitable for use in the HAZUS model, however, the scientific data that supports these datasets may be incomplete. The Town of Smithtown will continue to partner with a variety of local, State and Federal agencies to support local data collection and greater understanding of the hazards and risks pertaining to these water bodies.

It is also noted that risk assessment and analysis contained elsewhere in this plan, especially as it pertains to the Long Beach Marina Facility, may be underestimated due to a variety of data collection and/or modeling constraints. The Town will continue to partner with local, State and Federal agencies to support local data collection and greater understanding of the hazards and risks pertaining to the water-bodies within their borders.

9.32.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Town of Smithtown that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Smithtown has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.32.9 Additional Comments

None at this time.

Figure 9.32-1. Town of Smithtown Hazard Area Extent and Location Map

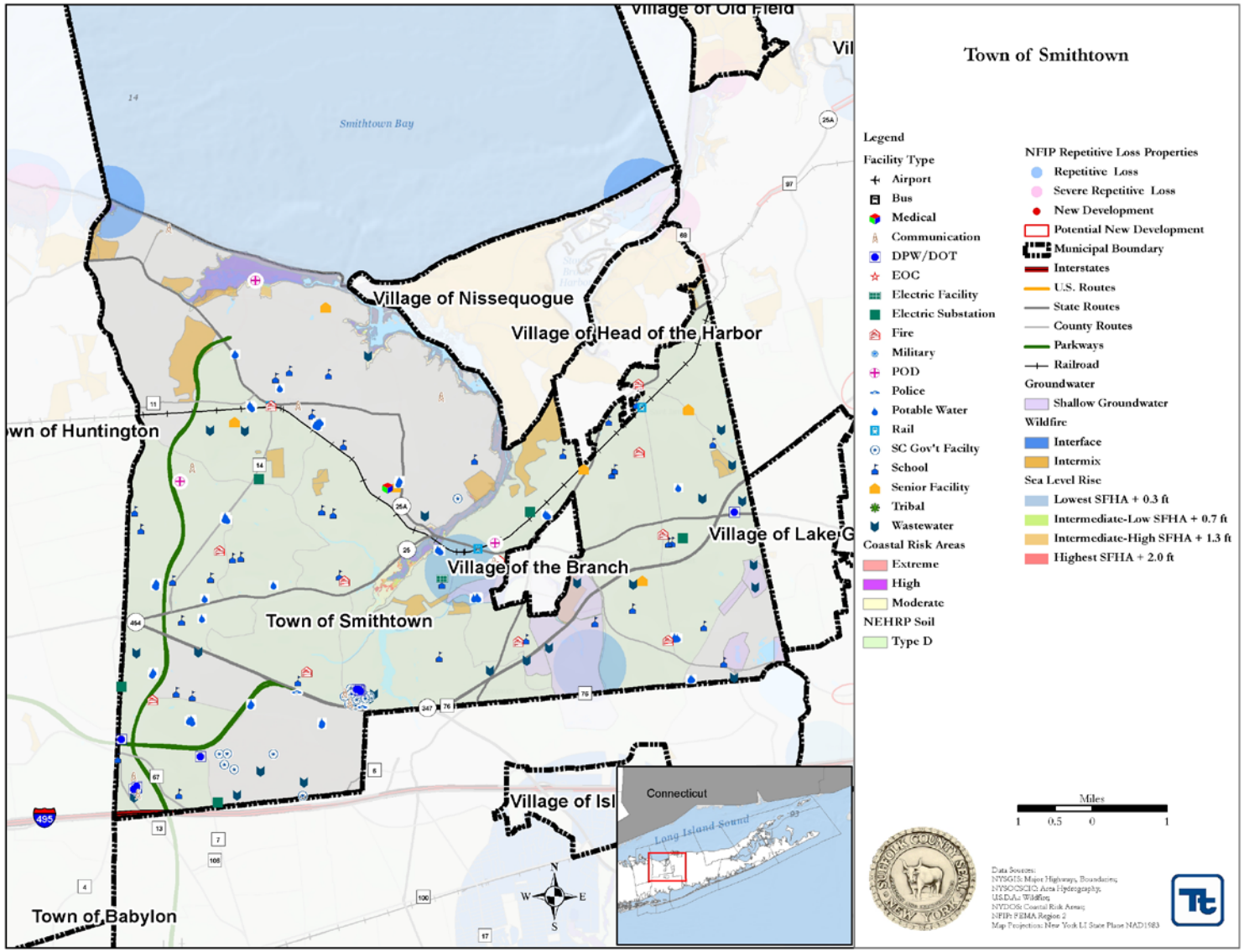
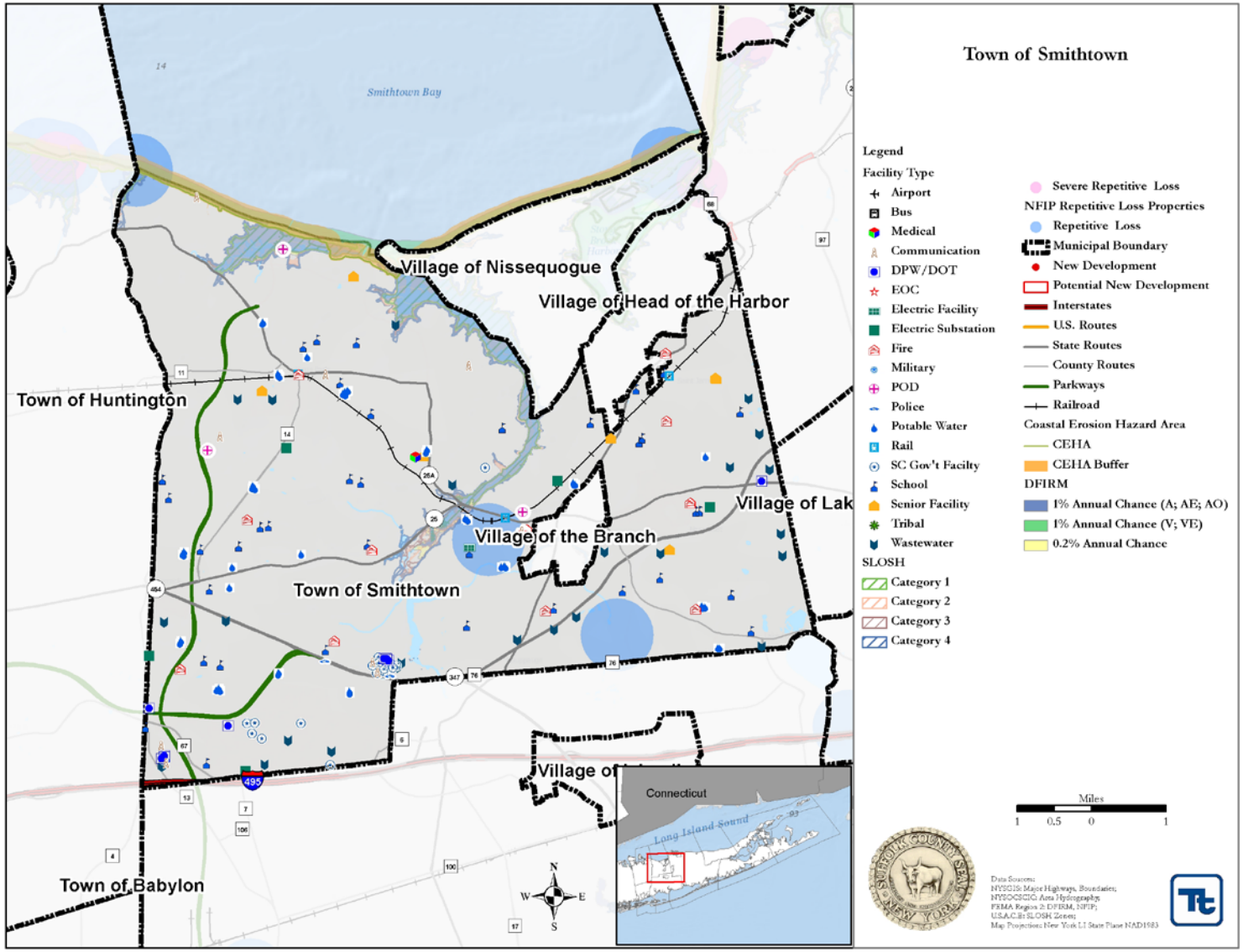


Figure 9.32-2. Town of Smithtown Hazard Area Extent and Location Map 2



Mitigation Action Worksheet

Please complete one sheet per action/project with as much detail as possible, using the guidance beginning on page 3 and examples provided by FEMA.

Name of Jurisdiction: Town of Smithtown
Number: Sandy HMGP LOI #: 1156, State #265
Mitigation Action/Initiative: Town of Smithtown Wireless Emergency Communications Network

Assessing the Risk	
Hazard(s) addressed:	*All - including Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter Storm, Wildfire*
Specific problem being mitigated:	Summary: The Town's existing radio tie line (RTL) public safety communications system is prone to failure due to rain, wind and other storm events, and the resulting loss in communications capacity affects multiple Town departments and external agencies that provide critical services town-wide. Background: Currently the Town has seven major geographic locations dispersed throughout a 54 square mile terrain of peaks and valleys that are not currently interconnected by a modern network for data and radio transmissions. Town Departments are currently separated by several miles and in some cases, over a hundred feet in elevation (very uncommon for Long Island). These include, but are not limited to, the Public Safety/Town Hall Complex, the Smithtown Highway Department (roadways), the Parks, Building and Grounds Department (responsible for maintenance and protection of all Town facilities), the Municipal Services Facility (waste management and heavy equipment staging area), Callahan's Observation Beach & Tower, and the Marine Response Facility at Long Beach (geographically within the bounds of the Village of Nissequogue). The Town of Smithtown Department of Public Safety, consisting of five operating divisions (Fire Prevention, Park Ranger, Ordinance Compliance, Waterways & Navigation and Emergency Management), is responsible for uniformed enforcement and security activities within the Town's 54 square miles and serves a population of over 160,000. The Town's existing RTL system is used by seven fire departments, two ambulance corps, and two village police departments, and is the backbone of all Town operations, including Public Safety (particularly fire marshals, park rangers and bay constables), the Building Department, Highway Department, Parks Department, Municipal Services Facility and two Water Districts. These agencies and Town departments play a major role during and after storm events. Approximately 800 portable and mobile radios and 1000 voice pagers are in use town-wide. Problem: The Town and its partnering agencies experience frequent communication failures during rain and other storm events. All Town repeaters rely on RTLs to communicate between the base

	radios and the repeaters and from repeater to repeater. RTLs generally fail at two points: when power goes out, and when the data path is interrupted due to water damage. When these RTLs fail, the radio system fails. The Town lost communications due to water impingement on the RTLs 17 times in 2011, 13 times in 2012, and eight (8) times as of October 2013. Outages typically last from one day to two weeks, which was the case during Superstorm Sandy and the snow storm that followed. When the radios fail we are forced to revert to telephones, short range simplex frequencies and the 800 MHz system owned and operated by Suffolk County. This creates fragmented and unreliable communications as not every agency has every frequency. As a result Town dispatchers are forced to communicate over multiple frequencies and the telephones and then relay that information back on other frequencies. Simplex operations limit the distance transmissions will travel. As most of the units in the field use portable radios, their transmission range is severely restricted, and our dispatchers can't hear them. The Town's communications service provider, Verizon, has very few employees who are trained to service RTLs, making it difficult to secure service quickly. Another difficulty is that the company will phase out RTLs in the near future. The Town's surveillance system in its parks, beaches and other facilities relies on Cablevision (the region's cable service provider) modems to communicate back to the Department of Public Safety. Not only is this service expensive, but Cablevision service commonly goes down during many rain, snow or wind events and signal is lost. Once a cable modem goes down, it must be physically reset, creating logistical complications during storms and emergency operations. A microwave system would replace the cable modem system, and eliminate this problem. The Town's surveillance system facilitates the operations of several Town departments on both daily basis and during emergencies. The RTL system is not sustainable over the long term due to the frequent failures, slow repair service and approaching obsolescence. The need for the town to maintain separate systems for voice, data and video is another reason to seek a unified, more reliable communications system.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	**1. No Action:** The Town's daily operations and emergency response will continue to be hampered during inclement weather and be non-exist during major disasters.

	2. Build a T1 cabled network throughout the Town. This involves burying cable to interconnect the seven major facilities which are dispersed throughout 54 square miles. The terrain to be traversed, as well as the affect of the Shallow Groundwater hazard throughout the Town would make this a costly and difficult operation. The time it would take to undertake the acquisitions, easements and legal agreements could be 3-5 years prior to construction. Building a network of this nature would easily exceed $8 million and take at least 10 years.
	3. Build out a 200Mbps microwave network in licensed space. This option would cost approximately three times as much for equipment and installation, and would also involve purchasing FCC frequencies for secure transmissions of large amounts of data with no interference. This option would however, allow for the Town to regularly share their geographic information systems out to all departments, getting key natural hazard and disaster resilience information into the hands of the bricks and mortar departments who every day are undertaking operations and public works improvements which could be then completed more in line with the Town mitigation strategies and initiatives.
Action/Project Intended for Implementation	
Description of Selected Action/Project	Summary: The Town proposes to build a network of wireless microwave links, as the microwave transmission technology features some built in power redundancies and is able to maintain a more consistent signal, even over the varied terrain of the Town of Smithtown. Additionally, the proposed system will not be subject to damage or interruptions by flooding, severe storms, severe winter storms and/or many other natural hazards. The network will replace an existing Radio Tie Line (RTL) system for Town-wide emergency communications, and will create the foundation for a Town-wide information technology network. Discussion: The Town proposes to mitigate the frequent loss of critical communications facilities by building a microwave wireless network. Our research into the Microwave Link system in use by Suffolk County indicates that it rarely goes down, does not rely on Verizon or any other 3rd party tie ins, and is not susceptible to water or wind damage. Other benefits of the Microwave Link include: -Microwave communications move data faster and more efficiently, and require no manual switching. -A microwave system has built in redundancy. If one link does happen to go down, the others will automatically take over. -Microwaves will unify the Town's communications as they carry voice, data and video simultaneously, whereas the Town currently maintains several types of antiquated equipment which do not even provide full functionality.

	-The Town will be able to move its video recording equipment from the beaches and parks to a central location at its Public Safety headquarters. Some of these areas are prone to flooding and are not readily accessible during storms and flood events. With the Microwave Link the video will be accessible even when the beaches and parks are not. -The Town will no longer be dependent on Cablevision service, which only operates with electric power. - The data speed will be increased which will improve the quality of the images transmitted from the cameras at each facility and voice communications would not be subject to the interference. The Town has already performed a full engineering and feasibility study on this network, and constructed many of the towers that are necessary on which to mount the wireless microwave links. Both line of sight, balloon, and radio testing have been done on all proposed network locations to ensure effective and optimal communications. The Town will essentially be installing dome microwave antennas (throughput 56 Mbps) at seven main locations, and ancillary smaller antennas at two locations necessary to complete the links between remote facilities. The installation consists of using either a crane and/or tower climbers to install the dome antennas on existing communications towers, and installing some additional support equipment on a concrete pad on the ground nearby. The support equipment, including power backup, will be raised and sheltered to protect against weather events. The seven main locations are Public Safety Department, Highway Department, Municipal Services Facility, Parks & Grounds Department, Long Beach Marine Response, Callahan's Observation Beach, and Smithtown Landing Golf Course. The ancillary locations are the Kings Park Old Dock Bluff, and Short Beach, which are both necessary to reach the remote areas of Callahan's and Long Beach. This essentially is building six main links, which requires a total of twelve dome antennas. While by definition, even a single link microwave network has redundancy built into it, the Town has opted to design for a dual link between Public Safety and 3 of the most critical locations necessary for emergency response, adding a layer of critical protection. Additionally, the Town will be paying a yearly fee for 24/7/365 repair and replacement which guarantees if any part of the network becomes damaged it will be back up and running in 4 hours. Level of Protection: The entire Town will receive benefit from this project as it will aid the Town in daily mitigation efforts and greatly increase the response capabilities of all Town and outside agencies who are responsible for emergency response within the Town of Smithtown. Note that the life of most of the equipment involved is

	10-15 years, however, the value of actually building the microwave network has a value well beyond that because the investment in the network creation far exceeds the replacement cost of individual pieces of equipment. Useful life of network is at least 30 years.
Mitigation Action/Project Type	**SIP**
Objectives Met	**2, 3, 7,12,13,14,15,16**
Applies to existing structures/infrastructure, future, or not applicable	**Existing, future**
Benefits (losses avoided)	**Loss of services:** will be avoided by pubic safety and other public services throughout the Town of Smithtown. Affected emergency response organizations consist of seven fire districts, two ambulance corps, five school districts and three villages (including their police, highway and public works departments). Town of Smithtown departments to benefit include but are not limited to Public Safety, Public Works and damage assessment operations. Town-wide fleet inventory of Town and emergency response vehicles totals 460 vehicles that rely on the Town communication system. **Repair costs:** Costs for RTL repairs charged by Verizon, Cablevision, contractors. Cost basis for benefits includes but is not limited to the operating budgets for affected agencies; frequency and magnitude of past events; overtime costs. More detailed analysis is required to quantify and prepare a Benefit Cost Analysis. Technical assistance was requested from FEMA in December 2013.
Estimated Cost	$437,580
Priority*	*High*
Plan for Implementation	
Responsible Organization	Town of Smithtown Department of Public Safety: John Valentine, Director
Local Planning Mechanism	Town of Smithtown
Potential Funding Sources	Hazard Mitigation Grant Program; other grant programs; local cost share
Timeline for Completion	Medium (dependent on funding availability)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

*** Refer to results of Prioritization (page 2)**

Prioritization

Number: Sandy HMGP LOI #: 1156
Mitigation Action/Initiative: Town of Smithtown Wireless Emergency Communications Network

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	This project is needed to enhance life/safety protection for all Town residents
Property Protection	1	Enhanced wireless emergency communications may facilitate a greater ability to protect against economic losses
Cost-Effectiveness	1	The benefits of this project outweigh the costs
Technical	1	Feasibility studies have been completed
Political	1	Town leadership supports the project
Legal	1	The Town has the jurisdiction to implement
Fiscal	0	Should funds become available, the Town can provide the local match
Environmental	1	There are no environmental constraints associated with this project.
Social	1	This project is needed to enhance life/safety protection for all Town residents
Administrative	1	The project would be administered by the Town Department of Public Safety. Guaranteed lifetime maintenance and emergency service would be provided by a contracted specialist.
Multi-Hazard	1	The project would address all natural hazards
Timeline	1	Once funds became available, the project could be completed in less than three years
Agency Champion	1	Town leadership supports the project
Other Community Objectives	1	The project is part of the Town Public Safety plan to enhance emergency response and disaster mitigation for the long term
Total	13	
Priority (High/Med/Low)	High	

Guidance to Complete the Mitigation Action Worksheet

The following provides additional guidance on how to complete the Mitigation Project Capture Sheet. If you have any questions, please contact:

Jonathan Raser
Tetra Tech, Inc., 1000 The American Road, Morris Plains, NJ 07950
973-630-8042 jonathan.raser@tetratech.com

Assessing the Risk

Hazard(s) addressed: Please enter the hazard(s) of concern you are mitigating. For this plan, the hazards of concern identified for the planning area are:

- Coastal Erosion
- Drought
- Flooding (riverine, flash, coastal, and urban flooding)
- Groundwater Contamination (natural)
- Hurricane (tropical cyclones, including tropical storms and tropical depressions)
- Infestation (Asian Longhorn Beetle, Lyme Disease and West Nile Virus)
- Nor'Easters (extra-tropical cyclones, including severe winter low-pressure systems)
- Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)
- Severe Winter Storm (heavy snow, blizzards, ice storms)
- Shallow Groundwater
- Wildfire
- Expansive Soils

Specific problem being mitigated: Please describe the specific problem being mitigated.

Evaluation of Potential Actions/Projects

Actions/Projects Considered: Please consider different options to mitigate the problem identified. One alternative is always to accept the current level or risk (tolerate the vulnerability/problem) by deciding to take no action at this time. If you choose to take no action, please complete the worksheet up to and including this section and this will be noted in the Plan.

Please include the name of the action considered and a brief reason as to why the action was not selected. The reasoning documents the consideration of these alternatives.

Action/Project Intended for Implementation

Description of the Selected Project: Please provide a brief description of the selected project.

Mitigation Action Type:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.

- Natural Systems Protection (NRP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.

- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

Objectives: Please insert the plan objectives (by number) that would be met if the action/project is implemented.

Plan Objectives:

1. Enhance the public's understanding of natural hazards, the risk they pose and ways to mitigate those impacts.

2. Retrofit, acquire, or relocate structures in high hazard areas, including but not limited to those known to be or subject to repetitive damages.

3. Continually improve understanding of the location and potential impacts of natural hazards, the vulnerability of building types, and community development patterns and the measures needed to protect life safety at the local government level.

4. Strengthen codes so that new construction can withstand the impacts of natural hazards and lessen the impact of that development on the environment's ability to absorb the impact of natural hazards.

5. Seek projects that minimize or mitigate their impact on the environment including but not limited to: beach nourishment, stream channel restoration, and wetlands creation/preservation.

6. Consider providing incentives to promote wise land uses in known or identified high risk areas.

7. Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.

8. Develop and implement wildfire mitigation and watershed. Protection strategies that reduce losses to wildlife habitat and protect water while also reducing damage to development.

9. Lower cost of flood insurance premiums through CRS program.

10. Protect against invasive species (noxious weeds) and exclude and eradicate invasive insects, disease, and weeds.

11. Implement water conservation measures, use reclaimed water, and increase groundwater usage, create surface water storage where appropriate.

12. Develop or improve early warning emergency response systems and evacuation procedures.

13. Work to lower emergency service response times, including improvement to transportation facilities.
14. Seek to integrate/coordinate all phases of Emergency Management within the planning area.

15. Seek mitigation projects that provide the highest degree of natural hazards protection at the least cost by considering projects that will mitigate the impacts of multiple hazards and/or leverage multiple funding sources.

16. Increase resilience of critical facilities and infrastructure.

Benefits: Please describe the losses avoided when the project is implemented. This includes physical property damage; loss of function; road closing/detours; etc.

Estimated Cost:
Please provide the estimated cost or use the following ranges:
Low = < $10,000 Medium = $10,000 to $100,000 High = > $100,000

Priority: Please enter High/Medium/Low. Refer to the prioritization exercise and table, and instructions below.

Plan for Implementation

Potential Funding Source: Please identify the anticipated funding source, which could be "Grant funding with local cost share". Sources may include federal, state and local sources.

Timeline for Completion: Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.

Reporting on Progress

Note: This is for long term project progress review and need not be completed at this time.

Please provide a status update on the selected action/project. Along with this description, please indicate if the action/project is completed or not completed.

Actions which are not complete may be dropped with a rational provided (e.g., project deemed unfeasible…). Other incomplete actions should clearly be indicated as continuing; indicate percent complete, and identify any hurdles/obstacles/reasons for change in schedule. Even actions that have had no progress to date can be identified as continuing. For any action that is not yet complete and will continue, always consider modifying the action to promote implementation.

Please note this report on progress should be done, at minimum, each year prior to the annual Planning Committee update outlined in the plan maintenance procedures in Section 7 (Plan Maintenance).

Guidance to Complete the Evaluation/Prioritization Table

Complete this table to help evaluate and prioritize each mitigation action being considered by your municipality. Please use these 14 criteria to assist in evaluating and prioritizing new mitigation actions identified. Specifically, for each new mitigation action, assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria in the provided table, defined as follows:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

Use the numerical results of this exercise to help prioritize your actions as "Low", "Medium" or "High" priority. Your municipality may recognize other factors or considerations that affect your overall prioritization; these should be identified in narrative in the Priority field of the worksheet.

The 14 evaluation/prioritization criteria are:

1. Life Safety – How effective will the action be at protecting lives and preventing injuries?

2. Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?

3. Cost-Effectiveness – Are the costs to implement the project or initiative commensurate with the benefits achieved?

4. Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.

5. Political – Is there overall public support for the mitigation action? Is there the political will to support it?

6. Legal – Does the State have the authority to implement the action?

7. Fiscal - Can the project be funded under existing program budgets (i.e., is this initiative currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?

8. Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?

9. Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

10. Administrative – Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?

11. Multi-hazard – Does the action reduce the risk to multiple hazards?

12. Timeline - Can the action be completed in less than 5 years (within our planning horizon)?

13. Local Champion – Is there a strong advocate for the action or project among the jurisdiction's staff, governing body, or committees that will support the action's implementation?

14. Other Local Objectives – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

Mitigation Action Worksheet

Please complete one sheet per action/project with as much detail as possible, using the guidance beginning on page 3 and examples provided by FEMA.

Name of Jurisdiction: Town of Smithtown
Number: Sandy HMGP LOI #: 1445; State #1354
Mitigation Action/Initiative: Town of Smithtown Regional Fueling Facility

Assessing the Risk	
Hazard(s) addressed:	*All, including Hurricane, Nor'Easters, Severe Storms, Severe Winter Storm*
Specific problem being mitigated:	Summary: Fuel shortage and power outage are among the cascading effects of severe storms, such as Hurricane Sandy, which caused widespread regional damage and a fuel shortage in 2012. This project is intended to mitigate the delay or cessation of critical response and recovery services by fire, police, public works and other essential personnel due to fuel shortage. Location: The Town of Smithtown Highway Yard is located at 758 Smithtown Bypass (Route 347), Smithtown, NY 11781. Latitude: 40.853078; Longitude: -73.162889. The facility is operated by the Smithtown Highway Department, which is responsible for the maintenance and improvement of more than 470 miles of roads, drainage systems, recharge basins, sidewalks, driveway aprons, and curbs within the Town. The Highway Department maintains a fleet of approximately 200 vehicles, including cars, trucks, and construction equipment. The Highway Yard's fueling facility consists of four fuel pumps and a total of 22,000 gallons of gasoline and diesel storage. The highway facility is situated in a heavily developed commercial area near the center of the township. The nearest cross street to the facility is Southern Blvd. The Tax Map Numbers for the property are 0800107000100001000 and 0800108000200019000. Town of Smithtown: The Town of Smithtown, with a population over 160,000 and covering 54 square miles, is located in northern central Suffolk County. Its Department of Public Safety, consisting of five operating divisions (Fire Prevention, Park Ranger, Ordinance Compliance, Waterways & Navigation and Emergency Management), is responsible for uniformed enforcement and security activities and maintains a townwide communications center which, during times of emergency is the hub of the Town's Emergency Operations Center (EOC). The Town's existing fueling station at its Highway Yard provides for storage of 12,000 gallons of gasoline and 10,000 gallons of diesel fuel, and two fuel pumps. In times of non emergency, the facility is

	used to supply Highway Department vehicles, including its critical response fleet (dump trucks, snow plows, haulers, and equipment such as payloaders, bulldozers, etc.). Additional gasoline reserves (6,000 gallons) are stored at a remote location within the Town, at the Long Beach Marina. The marina fueling facility serves the five vessels operated by Public Safety as well as other agencies and the boating community, and is located in a flood zone. **Problem:** Hurricane Sandy effectively shut down many New York and New Jersey fuel and oil terminals. The resulting regional fuel shortage affected critical operations of many local municipal agencies. During this crisis the Town emerged as a key resource for coordinating distribution and supply of fuel, and its department of Public Safety in concert with the Town Board made the Highway Yard fueling station available to the Town's seven fire districts, two ambulance corps, five school districts, three villages (including their police, highway and public works departments), as well as the County of Suffolk. Other fueling facilities operated by the County and other municipalities were either too distant to be accessible due to poor roadway conditions, or they were out of fuel entirely. The fuel demands of the Town and the other agencies being served exceeded the available supply. As a result, the Town expended significant manpower in an effort to ration the fuel and secure deliveries from the quickly dwindling local supply. The rationing had a ripple effect on town-wide storm response operations, for example delayed clearing of roadways. Additional manpower was also expended to establish an ad-hoc arrangement for securing fuel deliveries. The Town estimates that a three-month fuel capacity was drained in less than two weeks following Superstorm Sandy. The fueling facility has no permanent back up power. The Town's Highway Department generator was used to power the facility on an emergency basis but the generator is underpowered, and this power was provided at the expense of other Highway Department functions during critical storm response operations. The Town had limited access to its fuel reserves at Long Beach Marina, approximately 9 miles away, in a remote area of the Town, due to flooding and loss of power. The marina was without power for approximately 29 days following Superstorm Sandy. Its existing generator performed for 14 days before it failed due to sea water inundation, and the facility remained without power for another 15 days until electric service was restored. The fuel reserves at this site were not accessible during this time. Damages: The fuel shortage led to an excessive expenditure of manpower on coordination activities associated with rationing and securing fuel delivery. Response operations of multiple agencies and departments (fire, public safety, highway, public works) were

	delayed throughout the area. Because the Town fueling facility serves vehicles that clear roadways of debris there is a significant impact not only on public safety but also on commerce, business operations, and life-safety in terms of doctors, nurses and first responders being able to report to work. Clearly there is additional life-safety use of the fuel by the fire departments and village police. Without fuel, there can be no response. Following Hurricane Sandy, fuel shortage is a recognized effect of natural hazards, and must also be addressed to mitigate damages relating to diminished response and recovery capacity and impacts on commerce as well as health, life and safety of the public. Power failure has also emerged as a significant effect of the region's natural hazard vulnerabilities (hurricanes, severe storms, nor'easters, winter storms, man made hazards, others) that must be addressed to mitigate future damages relating to power outage. A generator will ensure that the fuel pumps will continue to operate in the event of future power outages.
Evaluation of Potential Actions/Projects	

Actions/Projects Considered (name of project and reason for not selecting):	**1. No Action:** The Town's current fuel storage capacity at its Highway Yard will remain unchanged. Its ability to meet regional fuel demands in future fuel shortage emergencies, particularly during a power outage (which was the case after Hurricane Sandy), will continue be compromised. As a result the Town's seven fire districts, two ambulance corps, five school districts, three villages (including their police, highway and public works departments), as well as the County of Suffolk will risk running out of fuel. Were this to occur, there would be extensive negative impacts to life, health, safety and commerce. During future fuel shortages, the Town will continue to expend massive amount of manpower, including overtime, to conduct the same type of coordination and rationing activities that occurred following Sandy in an effort to secure new fuel deliveries from the ever diminishing supply of fuel in the region. The Town will continue to rely on the fuel reserve at the Long Beach Marina, which is at times inaccessible due to flooding, and which itself is a critical fueling facility for the Town's Marine Response Team, which services a wide area of the Long Island Sound along the north shore of Suffolk County. The Team provides Public Safety/EMS services for the remote geographic area and is part of the US Coast Guard Homeland Security Protocols for protection of the Long Island Sound, including but not limited to protection of the Long Island Power Authority Grid (through protection of fuel boats servicing the Northport and Port Jefferson power plants), the Interstate Bridgeport-Port Jefferson Ferry, and the Northville Fuel Terminal (per 10/26/2013 Newsday article this facility will house emergency reserves for all of Long Island).

	2. The Town of Smithtown would attempt to coordinate with existing County or State fueling facilities to fuel its vehicles. However these facilities experienced supply issues following Sandy, and there is a low probability that such an arrangement would be feasible. Geography is a challenge to this arrangement. The State/County locations are more distant and travel times are much longer than those between the Town's three villages and 2 of its major fire districts than the Highway Yard. The drive time can be 40 minutes to an hour each way to the County or State facilities, whereas the Highway Yard minutes can be 20-30 minutes each way. In addition, the Town has arrangements with its Villages and Fire Districts for shared services; expanding the scope of these arrangements would be a minor matter for the local municipalities. The current contractual process between larger government entities like the County and/or the State is a more extensive process. Expanding the capacity of the Town's existing inter-municipal agreements would appear to be a more efficient solution than this alternative.
	3. The Town could discontinue its arrangement to provide fueling capability for its partnering agencies, including the three villages located within the Town, seven fire districts, two ambulance corps, five school districts and the County of Suffolk, and encourage each of these organizations to establish separate, independent fueling facilities. Each organization would then be responsible for maintaining preparedness for anticipated fuel shortage and power loss events. This would have the effect of ensuring that the Town's existing reserves are not depleted as quickly during a fuel shortage. This alternative would have a negative impact on the region's fire districts, ambulance corps, school districts and county's agencies due to the costs that would be incurred by them to establish independent fueling facilities. The cost in the aggregate would surely be many multiples of the cost of this project. Many organizations would not have the funds, property or land use authority to build and maintain such infrastructure. It would also be reasonable to assume that it would be many years before such new facilities could be built, leaving the region under-prepared for future fuel shortages.
Action/Project Intended for Implementation	
Description of Selected Action/Project	The selected action is to establish a regional fueling facility. The Town will upgrade an existing Town owned vehicle fueling facility that will function as a regional fueling facility for emergency response agencies during an energy or fuel supply emergency. The scope of work will include:

	-Design and permitting, to be conducted under the direction of the Town of Smithtown Engineering Department -Government procurement of equipment and construction services -Mobilization -Demolition of existing pad and pumping equipment -Installation of fuel tanks (one for gas, one for diesel) -Installation and connection of fuel distribution systems, fuel management systems, fire suppression and stormwater management measures as required by NYS Building and Fire Codes -Installation of generator The upgraded fueling station will effectively double the Town's fuel storage reserves, providing for a seven day supply of gasoline and diesel fuel. This increased capacity is critical for reducing reliance on deliveries. The additional capacity will also reduce the Town's reliance on reserves at the Long Beach Marina, which is located in a flood zone, effectively relocating its reserves to the central Highway Yard location. The generator will ensure continuity of operations in future power outages. In addition to the capital improvements the Town will formalize its role as a regional fueling facility by establishing agreements with its partnering agencies, including the three villages located within the Town, seven fire districts, two ambulance corps, five school districts and the County of Suffolk. An additional benefit of this facility will be availability of fuel for evacuating residents and other motorists, should this ever become necessary. Status of development process: The Town Engineering Department has established preliminary design criteria and cost estimates for the project. Maintenance: To be conducted in-house by existing staff. FEMA support: A FEMA recovery team that observed Town emergency operations following Hurricane Sandy recommended this action. The project is aligned with the National Disaster Recovery Framework. FEMA representatives present at meetings where this project was recommended include but were not limited to: Lasandrarita Caldwell, FEMA, Neighborhood Taskforce Initiative Frank Kaylor, NYS Office of Emergency Management (AIDRC), Disaster Assistance Representative Jeffrey Simon FEMA, Intergovernmental Affairs Eve Salstrom, FEMA, Neighborhood Task Force Initiative Lead Graham Bingham, FEMA, Neighborhood Task Force Initiative Joyce Lincoln, FEMA, Business Liaison

Mitigation Action/Project Type	**SIP**
Objectives Met	**3,5,7,12,13,14,16**
Applies to existing structures/infrastructure, future, or not applicable	**Existing**
Benefits (losses avoided)	Disruption, delay and loss of public services including emergency and public works services; disruptions to commerce and negative impact on life safety; expenditures for local personnel resources. The cost basis for benefits includes but is not limited to the operating budgets for affected agencies; frequency and magnitude of past events; and overtime costs relating to emergency response. More detailed analysis is required to quantify and prepare a Benefit Cost Analysis. Technical assistance was requested from FEMA in December 2013.
Estimated Cost	$491,000
Priority*	*High*
Plan for Implementation	
Responsible Organization	Town of Smithtown Department of Public Safety: John Valentine, Diretor
Local Planning Mechanism	Town of Smithtown
Potential Funding Sources	Hazard Mitigation Grant Program; other grant programs; local cost share.
Timeline for Completion	Short (Dependent on funding availability)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

*** Refer to results of Prioritization (page 2)**

Prioritization

Number: Sandy HMGP LOI #: 1445
Mitigation Action/Initiative: Town of Smithtown Regional Fueling Facility

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	This project will have the potential to enhance life/safety protection for all Town residents
Property Protection	1	Greater availability of fueling services during disasters may facilitate a greater ability to protect against economic losses
Cost-Effectiveness	1	The benefits of this project outweigh the costs
Technical	1	The project is feasible and by design, a long term solution
Political	1	Town leadership supports the project, as do leaders in other special districts that will be part of this shared service partnership
Legal	1	The Town has the jurisdiction to implement
Fiscal	0	Should funds become available, the Town can provide the local match
Environmental	1	There are no environmental constraints associated with this project.
Social	1	This project will have the potential to enhance life/safety protection, expedite emergency response, and project against public and private municipal losses for all Town residents
Administrative	1	The project would be administered jointly by the Town Departments of Public Safety and Engineering, and maintained by existing public works staff
Multi-Hazard	1	The project would address all natural hazards
Timeline	1	Once funds became available, the project could be completed in less than five years
Agency Champion	0	
Other Community Objectives	1	The project is part of the Town Public Safety plan to enhance emergency response and disaster mitigation for the long term
Total	12	
Priority (High/Med/Low)	High	

Guidance to Complete the Mitigation Action Worksheet

The following provides additional guidance on how to complete the Mitigation Project Capture Sheet. If you have any questions, please contact:

Jonathan Raser
Tetra Tech, Inc., 1000 The American Road, Morris Plains, NJ 07950
973-630-8042 jonathan.raser@tetratech.com

Assessing the Risk

Hazard(s) addressed: Please enter the hazard(s) of concern you are mitigating. For this plan, the hazards of concern identified for the planning area are:

- Coastal Erosion
- Drought
- Flooding (riverine, flash, coastal, and urban flooding)
- Groundwater Contamination (natural)
- Hurricane (tropical cyclones, including tropical storms and tropical depressions)
- Infestation (Asian Longhorn Beetle, Lyme Disease and West Nile Virus)
- Nor'Easters (extra-tropical cyclones, including severe winter low-pressure systems)
- Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)
- Severe Winter Storm (heavy snow, blizzards, ice storms)
- Shallow Groundwater
- Wildfire
- Expansive Soils

Specific problem being mitigated: Please describe the specific problem being mitigated.

Evaluation of Potential Actions/Projects

Actions/Projects Considered: Please consider different options to mitigate the problem identified. One alternative is always to accept the current level or risk (tolerate the vulnerability/problem) by deciding to take no action at this time. If you choose to take no action, please complete the worksheet up to and including this section and this will be noted in the Plan.

Please include the name of the action considered and a brief reason as to why the action was not selected. The reasoning documents the consideration of these alternatives.

Action/Project Intended for Implementation

Description of the Selected Project: Please provide a brief description of the selected project.

Mitigation Action Type:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.

- Natural Systems Protection (NRP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.

- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

Objectives: Please insert the plan objectives (by number) that would be met if the action/project is implemented.

Plan Objectives:

1. Enhance the public's understanding of natural hazards, the risk they pose and ways to mitigate those impacts.

2. Retrofit, acquire, or relocate structures in high hazard areas, including but not limited to those known to be or subject to repetitive damages.

3. Continually improve understanding of the location and potential impacts of natural hazards, the vulnerability of building types, and community development patterns and the measures needed to protect life safety at the local government level.

4. Strengthen codes so that new construction can withstand the impacts of natural hazards and lessen the impact of that development on the environment's ability to absorb the impact of natural hazards.

5. Seek projects that minimize or mitigate their impact on the environment including but not limited to: beach nourishment, stream channel restoration, and wetlands creation/preservation.

6. Consider providing incentives to promote wise land uses in known or identified high risk areas.

7. Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.

8. Develop and implement wildfire mitigation and watershed. Protection strategies that reduce losses to wildlife habitat and protect water while also reducing damage to development.

9. Lower cost of flood insurance premiums through CRS program.

10. Protect against invasive species (noxious weeds) and exclude and eradicate invasive insects, disease, and weeds.

11. Implement water conservation measures, use reclaimed water, and increase groundwater usage, create surface water storage where appropriate.

12. Develop or improve early warning emergency response systems and evacuation procedures.

13. Work to lower emergency service response times, including improvement to transportation facilities.
14. Seek to integrate/coordinate all phases of Emergency Management within the planning area.

15. Seek mitigation projects that provide the highest degree of natural hazards protection at the least cost by considering projects that will mitigate the impacts of multiple hazards and/or leverage multiple funding sources.

16. Increase resilience of critical facilities and infrastructure.

Benefits: Please describe the losses avoided when the project is implemented. This includes physical property damage; loss of function; road closing/detours; etc.

Estimated Cost:
Please provide the estimated cost or use the following ranges:
Low = < $10,000 Medium = $10,000 to $100,000 High = > $100,000

Priority: Please enter High/Medium/Low. Refer to the prioritization exercise and table, and instructions below.

Plan for Implementation

Potential Funding Source: Please identify the anticipated funding source, which could be "Grant funding with local cost share". Sources may include federal, state and local sources.

Timeline for Completion: Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.

Reporting on Progress

Note: This is for long term project progress review and need not be completed at this time.

Please provide a status update on the selected action/project. Along with this description, please indicate if the action/project is completed or not completed.

Actions which are not complete may be dropped with a rational provided (e.g., project deemed unfeasible…). Other incomplete actions should clearly be indicated as continuing; indicate percent complete, and identify any hurdles/obstacles/reasons for change in schedule. Even actions that have had no progress to date can be identified as continuing. For any action that is not yet complete and will continue, always consider modifying the action to promote implementation.

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Use the numerical results of this exercise to help prioritize your actions as "Low", "Medium" or "High" priority. Your municipality may recognize other factors or considerations that affect your overall prioritization; these should be identified in narrative in the Priority field of the worksheet.

The 14 evaluation/prioritization criteria are:

1. Life Safety – How effective will the action be at protecting lives and preventing injuries?

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5. Political – Is there overall public support for the mitigation action? Is there the political will to support it?

6. Legal – Does the State have the authority to implement the action?

7. Fiscal - Can the project be funded under existing program budgets (i.e., is this initiative currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?

8. Environmental – What are the potential environmental impacts of the action? Will it comply with environmental regulations?

9. Social – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

10. Administrative – Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?

11. Multi-hazard – Does the action reduce the risk to multiple hazards?

12. Timeline - Can the action be completed in less than 5 years (within our planning horizon)?

13. Local Champion – Is there a strong advocate for the action or project among the jurisdiction's staff, governing body, or committees that will support the action's implementation?

14. Other Local Objectives – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

Mitigation Action Worksheet

Please complete one sheet per action/project with as much detail as possible, using the guidance beginning on page 3 and examples provided by FEMA.

Name of Jurisdiction: Town of Smithtown
Number: Sandy HMGP LOI #: 1446, State #816
Mitigation Action/Initiative: Hauppauge - Mount Pleasant Road - Nissequogue Corridor Flood Relief

Assessing the Risk	
Hazard(s) addressed:	*Shallow Groundwater, Flooding, Nor'Easters, Severe Storms, Severe Winter Storm*
Specific problem being mitigated:	Location: This project addresses property damage and associated costs relating to the shallow groundwater hazard in an area encompassing approximately 428 homes in the vicinity of Mount Pleasant Road, in the Town of Smithtown, Suffolk County, Long Island, New York. The approximate midpoint of the project area is at Latitude: 40,829365; Longitude: -73.181047. The project addresses groundwater and surface fooding over a 35 acre drainage area. The majority of the Town of Smithtown is significantly below the grades of parts of the adjacent Towns of Brookhaven and Huntington. Topographic and location maps, as well as a project area map and damages map, all on file with the Town of Smithtown Engineering Department, provides a clear visualization of the extent of damages in experienced in the project area. Natural Hazard to be mitigated: The proposed project is necessary to mitigate groundwater flooding that impacts residents and businesses in the watershed area of the Northeast Branch of the Nissequogue River. This hazard is described in detail in the Suffolk County Hazard Mitigation Plan of 2008, and was recognized as its own unique hazard due to the topography and poorly draining soils prevalent within the Town. The flooding has impacted residents of the Village of the Branch and nearby Town of Smithtown residents since the late 1970's. The problem continued, with years of 1980, 1984, 1985, 1989, 1990, 1991, 1998, 1999, 2006, and 2007 containing periods of high rainfall accumulation. Then, severe flooding occurred during the Federally declared disaster of March 2010 when heavy rains inundated the area. (Major disaster declaration FEMA-1899-DR-NY). At least 268 homes are known to have experienced damages and another 662 are identified as likely to have been affected, resulting in a report to FEMA of an estimated total of $6.71 Million damages relating to the two flooding events in March 2010 alone. In 1979, the first formal recognition by the Town of the Shallow

	Groundwater Hazard occurred. The Town conducted numerous public hearings and internal studies of the most severely affected residents. The results of the Town's effort to document the Hazard was that the Town was able to document over $875,000 in damages to the 122 most severely affected homes throughout the Town. The damage and loss of use to residents' homes was so severe that The Town of Smithtown Tax Assessor's department received and approved tax grievances totalling a reduction of $63,000 in assessed value of the Town. The Town has substantial documentation of these efforts. In the years since, the Town of Smithtown has continued to document and analyze the problem and properties affected. It has also systematically been designing and completing stormwater management and hazard mitigation projects to provide relief to area homeowners.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Taking no action will ensure that the Shallow Groundwater Hazard will continue to affect the Mt. Pleasant community. Damages will continue to be incurred by homeowners in the form of property damage and associated costs, and by the Town Highway Department for the use of equipment and staff resources for response and service to the area. Based on current departmental records, there would be over 140 homes affected in a positive way should the project be completed. Without this project, these homes and the Town would continue to experience these levels of damages.
	2. Construct a force main and stormwater pumping station to interconnect these three recharge basins and pump the water to the north side of Route 347, downstream of the project area, to a flowing portion of the river. This would involve extensive engineering and design, but is a feasible alternative worth exploring. Possible detractions from the idea are how to get the hydraulic grade necessary for the force main and where to locate the pump station. This would probably cost more than the proposal at hand, but be more effective.
	3. Interconnect recharge basins and pipe to the Suffolk County recharge basin off Newton Lane. This is the exact proposal in the 1980 H2M Groundwater Study, except that in present day this basin is clogged and has a non-functioning overflow. Furthermore, this is upstream of the Hunt's Pond area, which is not only environmentally sensitive, but contains several outfall pipes from neighborhoods both east and west of the river which are clogged and inaccessible, so it has the potential to cause more damages for certain residents if the additional flow failed to self-clean the Pond and increase flow velocity. This would probably cost less than the proposal at hand, but be less effective.
Action/Project Intended for Implementation	
Description of Selected Action/Project	**Selected Action: Construct a storm drainage pipeline** which will inter-connect three (3) isolated recharge basins without overflow mechanisms directly to an existing storm drainage system which has a functioning overflow mechanism. By doing this, it will facilitate a

	permanent reduction of the groundwater and surface water flooding over a 35 acre drainage area encompassing approximately 428 dwellings, saving property loss damages and Town response damages. It will also increase capacity of the stormwater management system in the area. The project will consist of constructing a drainage pipeline which will inter-connect three (3) isolated recharge basins in the vicinity of Mount Pleasant Road in the Town of Smithtown, none of which have overflow mechanisms, and connect them directly to an existing storm drainage system which has a functioning overflow mechanism. The pipeline will extend from the basins to an existing culvert to connect with an outflow that will lead to the Nissequogue River. The existing culvert will be lowered to meet the elevation of the new pipeline. The project will effectively increase stormwater capacity by lowering the groundwater table and providing an overflow mechanism. As a result, surface flooding will be reduced. Both of these actions – lowering the culvert and installing the pipeline – were recommended in the 1979 Groundwater Relief Report commissioned by Suffolk County and prepared by H2M Engineering Group. Other recommendations contained in this report that have been implemented were effective at alleviating the shallow groundwater hazard in other areas of the Town. Similar relief is anticipated for this 35 acre drainage area. Project benefits will include a reduction or elimination in damages to homes and property, and reduction in Town Highway Department response and service to the area. The greatest factor contributing to homeowner damages is that stormwater from very small rain events, sometimes 1" or less of rain, cannot be efficiently and quickly conveyed away from homes, thus resulting in prolonged basement pumping and flooded septic systems. By providing an overflow mechanism for the three recharge basins, the stormwater system will convey more stormwater, more quickly away from homes. Two prior projects completed by the Town of Smithtown (in nearby neighborhoods) demonstrated that residents who used to pump either every day or in the case of less than 1" of rain fall, now typically pump only in the case of rainfalls exceeding 1.5". Given that 90% of all rainfalls in the State of New York are less than 1.5", this is a very significant reduction in damages. Status of development process The project area has been the subject of intensive study since the 1980's. Studies spanning the 1980s to 2013 document the nature of the groundwater flood hazard and evaluates methodologies for mitigation.

	Maintenance Annual maintenance schedule and costs will be consistent with typical roadway and drainage maintenance in locales unaffected by repetitive natural hazards. This project will facilitate a permanent reduction of the groundwater and surface water flooding over a 35 acre drainage area encompassing approximately 140 dwellings (estimated 430 residents), saving property loss damages and Town response damages.
Mitigation Action/Project Type	**SIP, NRP**
Objectives Met	**2, 5, 11, 14, 15,16, 17**
Applies to existing structures/infrastructure, future, or not applicable	**Existing**
Benefits (losses avoided)	Property and related damages associated with groundwater flooding experienced by residential and commercial property owners (e.g. replace damaged utilities, purchase, install and run pumps, cleaning basements, mold remediation, replace damaged personal items, lost work time to clean/pump, repair/replace damaged septic systems, etc.). $1,115,548 per Benefit Cost Analysis prepared Dec. 20, 2013 by NYS Office of Emergency Management. BCR 1.23.
Estimated Cost	$810,000
Priority*	*Medium*
Plan for Implementation	
Responsible Organization	Town of Smithtown
Local Planning Mechanism	Town of Smithtown
Potential Funding Sources	Hazard Mitigation Grant Program; local cost share.
Timeline for Completion	Short (Dependent on funding availability)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

*** Refer to results of Prioritization (page 2)**

Prioritization

Number: Sandy HMGP LOI #: 1446

Mitigation Action/Initiative: Hauppauge - Mount Pleasant Road - Nissequogue Corridor Flood Relief

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	Project will have minimal impact on safety but may have some minor health benefits for affected residents
Property Protection	1	Project will help prevent against municipal economic losses, public infrastructure damage, and flood damage to residential properties
Cost-Effectiveness	1	The benefits of this project highly outweigh the costs
Technical	1	The project is a long term solution to meet goals
Political	1	There is widespread community and civic support for this project, including Town leadership and other elected representatives of the area
Legal	1	The Town has the jurisdiction to implement
Fiscal	0	Should funds become available, the Town can provide the local match
Environmental	0	Some of the construction activity associated with the project may occur adjacent to regulated NYSDEC wetlands, but the project includes provisions for stormwater runoff remediation and water quality improvement which will result in long term environmental benefits
Social	1	The project will produce quality of life benefits for some residents who basement flooding and pumping will be reduced
Administrative	1	The project would be administered by the Town Department of Engineering
Multi-Hazard	1	This project will reduce the effects of multiple hazards, including flooding, severe storms and shallow groundwater
Timeline	1	Once funds become available, the project can be completed in less than five years
Agency Champion	1	There is widespread community and civic support for this project, including Town leadership and other elected representatives of the area
Other Community Objectives	1	The project will advance the goals outlined in several comprehensive land use and drainage studies for the area
Total	11	
Priority (High/Med/Low)	Medium	

Guidance to Complete the Mitigation Action Worksheet

The following provides additional guidance on how to complete the Mitigation Project Capture Sheet. If you have any questions, please contact:

Jonathan Raser
Tetra Tech, Inc., 1000 The American Road, Morris Plains, NJ 07950
973-630-8042 jonathan.raser@tetratech.com

Assessing the Risk

Hazard(s) addressed: Please enter the hazard(s) of concern you are mitigating. For this plan, the hazards of concern identified for the planning area are:

- Coastal Erosion
- Drought
- Flooding (riverine, flash, coastal, and urban flooding)
- Groundwater Contamination (natural)
- Hurricane (tropical cyclones, including tropical storms and tropical depressions)
- Infestation (Asian Longhorn Beetle, Lyme Disease and West Nile Virus)
- Nor'Easters (extra-tropical cyclones, including severe winter low-pressure systems)
- Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)
- Severe Winter Storm (heavy snow, blizzards, ice storms)
- Shallow Groundwater
- Wildfire
- Expansive Soils

Specific problem being mitigated: Please describe the specific problem being mitigated.

Evaluation of Potential Actions/Projects

Actions/Projects Considered: Please consider different options to mitigate the problem identified. One alternative is always to accept the current level or risk (tolerate the vulnerability/problem) by deciding to take no action at this time. If you choose to take no action, please complete the worksheet up to and including this section and this will be noted in the Plan.

Please include the name of the action considered and a brief reason as to why the action was not selected. The reasoning documents the consideration of these alternatives.

Action/Project Intended for Implementation

Description of the Selected Project: Please provide a brief description of the selected project.

Mitigation Action Type:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.

- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.

- Natural Systems Protection (NRP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.

- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.

Objectives: Please insert the plan objectives (by number) that would be met if the action/project is implemented.

Plan Objectives:

1. Enhance the public's understanding of natural hazards, the risk they pose and ways to mitigate those impacts.

2. Retrofit, acquire, or relocate structures in high hazard areas, including but not limited to those known to be or subject to repetitive damages.

3. Continually improve understanding of the location and potential impacts of natural hazards, the vulnerability of building types, and community development patterns and the measures needed to protect life safety at the local government level.

4. Strengthen codes so that new construction can withstand the impacts of natural hazards and lessen the impact of that development on the environment's ability to absorb the impact of natural hazards.

5. Seek projects that minimize or mitigate their impact on the environment including but not limited to: beach nourishment, stream channel restoration, and wetlands creation/preservation.

6. Consider providing incentives to promote wise land uses in known or identified high risk areas.

7. Establish a partnership among all levels of government and the business community to improve and implement methods to protect property.

8. Develop and implement wildfire mitigation and watershed. Protection strategies that reduce losses to wildlife habitat and protect water while also reducing damage to development.

9. Lower cost of flood insurance premiums through CRS program.

10. Protect against invasive species (noxious weeds) and exclude and eradicate invasive insects, disease, and weeds.

11. Implement water conservation measures, use reclaimed water, and increase groundwater usage, create surface water storage where appropriate.

12. Develop or improve early warning emergency response systems and evacuation procedures.

13. Work to lower emergency service response times, including improvement to transportation facilities.
14. Seek to integrate/coordinate all phases of Emergency Management within the planning area.

15. Seek mitigation projects that provide the highest degree of natural hazards protection at the least cost by considering projects that will mitigate the impacts of multiple hazards and/or leverage multiple funding sources.

16. Increase resilience of critical facilities and infrastructure.

Benefits: Please describe the losses avoided when the project is implemented. This includes physical property damage; loss of function; road closing/detours; etc.

Estimated Cost:
Please provide the estimated cost or use the following ranges:
Low = < $10,000 Medium = $10,000 to $100,000 High = > $100,000

Priority: Please enter High/Medium/Low. Refer to the prioritization exercise and table, and instructions below.

Plan for Implementation

Potential Funding Source: Please identify the anticipated funding source, which could be "Grant funding with local cost share". Sources may include federal, state and local sources.

Timeline for Completion: Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.

Reporting on Progress

Note: This is for long term project progress review and need not be completed at this time.

Please provide a status update on the selected action/project. Along with this description, please indicate if the action/project is completed or not completed.

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Use the numerical results of this exercise to help prioritize your actions as "Low", "Medium" or "High" priority. Your municipality may recognize other factors or considerations that affect your overall prioritization; these should be identified in narrative in the Priority field of the worksheet.

The 14 evaluation/prioritization criteria are:

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2. Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?

3. Cost-Effectiveness – Are the costs to implement the project or initiative commensurate with the benefits achieved?

4. Technical – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.

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6. Legal – Does the State have the authority to implement the action?

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11. Multi-hazard – Does the action reduce the risk to multiple hazards?

12. Timeline - Can the action be completed in less than 5 years (within our planning horizon)?

13. Local Champion – Is there a strong advocate for the action or project among the jurisdiction's staff, governing body, or committees that will support the action's implementation?

14. Other Local Objectives – Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

Mitigation Action Worksheet

Please complete one sheet per action/project with as much detail as possible, using the guidance beginning on page 3 and examples provided by FEMA.

Name of Jurisdiction: Town of Smithtown Department of Public Safety
Number: Sandy HMGP LOI #: 2226, State #2387
Mitigation Action/Initiative: Town of Smithtown Back-up Power for Marina Fueling Facility

Assessing the Risk	
Hazard(s) addressed:	*All, including power failure due to Flooding, Hurricane, Nor'Easters, Severe Storms,Severe Winter Storm, Wildfire and other hazards*
Specific problem being mitigated:	Power failure hazard at the Long Beach Public Safety facility located at 55 East Long Beach Road, Nissequogue, NY 11780. Latitude: 40.921424 N; Longitude: -73.165504 W. The project site is a Town-owned facility located within the Incorporated Village of Nissequogue, in the Town of Smithtown, Suffolk County, Long Island, NY. It is located at the Town-owned marina near the eastern tip of a peninsula bordered by Smithtown Bay. The Town's Harbor Master and Marine Response Team are stationed at this location. A residential community of approximately 45 homes is situated to the east of the facility, at the end of the peninsula. Town of Smithtown: The Town of Smithtown Department of Public Safety, consisting of five operating divisions (Fire Prevention, Park Ranger, Ordinance Compliance, Waterways & Navigation and Emergency Management), is responsible for uniformed enforcement and security activities within the Town's 54 square miles, and serves a population of over 160,000. The Town's fuel storage tanks at the marina provide 6,000 total gallons of storage in two tanks. This facility routinely serves the Department of Public Safety patrol and emergency response vessels, consisting of a fleet of five (5) boats. The Marine Response Team provides coverage from as far west as Northport to as far east as Stony Brook, and the response area encompasses local waters, the interstate border with Connecticut and commercial shipping lanes for fuel carriers. The marina is in a remote location relative to other critical facilities and fuel supply locations in the Town, is in a flood zone, and is only accessible by a single roadway (Long Beach Road). During emergency events, this facility serves emergency response vessels as well as vehicles operated by the Department of Public Safety, local fire departments, two village police and public works departments, and county, state and other public safety agencies. It also serves as an adjunct facility available to provide fuel to the Town's primary fueling station. Significantly, it is the only Public Safety facility available to service the several hundred residents of the Long Beach Community when coastal flooding isolates the

	peninsula from the mainland. Fuel stored at this facility is also available to the public boating community. Public Safety communications are based out of this facility and are dependent on a reliable power source for continuity of operations. The Team is part of the US Coast Guard Homeland Security Protocols for protection of the Long Island Sound, including but not limited to protection of the Long Island Power Authority Grid (through protection of fuel boats servicing the Northport and Port Jefferson power plants), the Interstate Bridgeport-Port Jefferson Ferry (a key link for interstate commerce), and the Northville Fuel Terminal (note per 10/26/2013 Newsday article this facility will house emergency reserves for all of Long Island). Natural Hazard to be mitigated: Power failure hazard. Typically a power outage is a cascading effect of a larger natural hazard. The definition of this hazard, provided by the New York State Hazard Mitigation Plan is: "Any interruption or loss of electrical service due to disruption of power transmission caused by accident, sabotage, natural hazards or equipment failure. A significant power failure is defined as any incident of a long duration which would require the involvement of the local and/or state emergency management organizations to coordinate provision of food, water, heating, shelter, etc…" Power outages affecting the facility are common, and typically occur with strong winds and severe storms, when power lines in this heavily wooded community are damaged by trees. Short term outages happen several times of month, and outages of more than 48 hours occur on average a few times every year. A significant power failure was also experienced in August 2003 when a mass power outage swept across the Northeast United States and severely affected the entirety of New York State. Further detail relating to outage events is provided in the Benefit Cost Analysis (BCA) section of this application. **Problem:** Following Hurricane Sandy, widespread power outages left the Long Beach Public Safety facility without power for approximately 29 days. The existing generator performed for the first 14 days before it failed due to sea water inundation. The facility remained without power until the public utility was restored after an additional 15 to 16 days. During that time, the facility had no ability to supply fuel for emergency response vessels and vehicles. Following the storm, an old, temporary generator has been installed but it is not designed as a permanent solution, as it is not sufficiently hardened to withstand hurricane force winds. A permanent source of backup power is required to ensure continuity of critical operations during future power outages. When the facility's pumping capability fails due to power loss, emergency and services vehicles are forced to fuel at distant

	locations, pulling personnel and equipment resources away from the community in the vicinity of the marina. Public Safety boats and other vessels are left without fueling capabilities and are forced to travel out of their way by several hours to secure fuel, but can only do so if waterways are navigable. Damages associated with loss of back up power to this facility include complete loss of use and negative impacts on service to the public. Patrol and emergency response vessels are left to find alternate, remote fueling stations that themselves might not be operational. Depending on marine conditions, traveling to the other locations might not be possible. Town, village, fire and other agencies that depend on the facility as their primary fueling station are also forced to attempt to travel to remote locations for fuel, but road conditions further complicate that effort. After Sandy, the regional fuel shortage presented yet further complications. As a result, emergency response and roadway clearing efforts were subject to delays and interruptions. Power outages also hamper communications capacity as staff lose connectivity with the central EOC, and must resort to portable radios, which have a short range and are of limited use. Staff then use personal cell phones, which are unreliable, particularly during disaster events. The Town has also recognized the need the place a communications tower at Long Beach to facilitate the critical communication link between both land and marine response and the Town Incident Command Center, and the generator is sized to power this tower as well. This facility is also the only facility which is staffed by emergency response personnel that is accessible to the several hundred residents who live at Long Beach. Several times a year, this community is isolated from the mainland due to roadway flooding incidents, and this facility is the only public building that they could find any needed assistance at. For severe emergencies, residents need to be evacuated by boat, but without power for the fuel pumps, this effort could be hampered as well.
Evaluation of Potential Actions/Projects	

Actions/Projects Considered (name of project and reason for not selecting):	**1. The No Action Alternative** is to provide no back up power capacity for the marine facility. This is not a viable option because the facility will continue to experience total loss of use during power outage events. Extended power outages, such as those documented in the BCA worksheets, result in severe hindrance to public safety operations, including fueling for public safety vessels and vehicles critical to response operations conducted by the Smithtown Public Safety Department, Village police departments, and agencies of Suffolk County, New York State and other agencies. Loss of power hampers emergency response and recovery operations, and diminishes communications capabilities that are critical for coordinating necessary resources within the Town and regionally. The facility serves to protect the life, health and safety of the public, and these functions are compromised without backup power capacity.
	2. Solar power is one possible feasible alternative. According to find-solar.org (1), a source of solar estimating calculations, the Public Safety Marine Facility would need a 113 KW peak DC photo voltaic (PV) power system to meet its energy demands. This system would cost an estimated $567,400. According to the New York State Energy Research and Development Authority's Clean Power Estimator (2), which provides estimates based on 10-KW increments, a 110 KW PV system would cost approximately $495,501. Both estimates incorporate standard assumptions and do not take into account any tilt, orientation, other output adjustments, or engineering/installation considerations that would be needed to create a customized cost estimate, but even at this base estimated price this option is clearly not a cost effective means of providing back up power. The system would also be vulnerable to storm damage due to its exposure to the coastal area. It is questionable whether the roof of the facility could accommodate an array of this size. While solar is generally considered a sound alternative to grid power, it is not a cost effective option for back up power for this facility at this time. (1) http://www.find-solar.org/?page=solar-calculator (2) http://nyserda.cleanpowerestimator.com/nyserda.htm
	3. Fuel cells, such as the Bloom Energy Server, are another alternative. This technology has become popular among commercial entities that have deployed fuel cells for applications including large information technology facilities as a primary energy source. Fuel cells convert hydrogen, natural gas or another fuel into electricity thorough an electrochemical process. While fuel cells are energy efficient and proven effective, their implementation is primarily considered as an alternative to grid power, due largely to the high capital cost and the long cost recovery timeframe. The technology is expensive, at $7 to $8 a watt (as reported by Newsweek). 113 KW capacity would cost $791,000, making fuel cells far too expensive for use as a source of backup power at this time.

Action/Project Intended for Implementation	
Description of Selected Action/Project	The proposed mitigation measure is replacement of the existing failed generator, which was located at ground level, with a 60kW, 208v diesel generator, to be installed on the facility's roof. The generator will be in a weather proof enclosure with a 140 gallon fuel tank, main line circuit breaker, battery, battery rack and cables, charger, block heater, engine hour meter, digital control panel, automatic transfer switch and seven day exercise clock. The project cost indicated in this worksheet includes all material, labor, electrical, installation work, and structural reinforcements needed for the roof installation. Elevating the generator will prevent future damage caused by tidal surges during high high tides and severe weather events. According to the Town Harbor Master, past flood events have caused water to rise to 4' on the facility's first floor. The project will provide back-up power at this critical Public Safety facility which houses a Marine Response Team serves a wide area of the Long Island Sound along the North shore of Suffolk County. The Team is part of the US Coast Guard Homeland Security Protocols for protection of the Long Island Sound, including but not limited to protection of the Long Island Power Authority Grid (through protection of fuel boats servicing the Northport and Port Jefferson power plants), the Interstate Bridgeport-Port Jefferson Ferry (a key link for interstate commerce), and the Northville Fuel Terminal (note per 10/26/2013 Newsday article this facility will house emergency reserves for all of Long Island). Additionally, it provides a fueling station for all Town of Smithtown Public Safety boats, and serves Suffolk County, Town of Brookhaven and other areas for both law enforcement and search and rescue operations. The geographic area served by the facility includes the Town of Smithtown, Town of Brookhaven, Town of Huntington and interstate border with Connecticut. The facility also serves as a source of fuel for public safety vehicles serving this remote area of the Town, and a backup for Police, Fire/EMS and Public Works response teams which service the adjacent areas of the Village of Nissequogue, the Village of Head of the Harbor, and the hamlet of St. James. The generator will provide for continuity of operations for personnel and keeping the critical communications link to Incident Command at the Town Public Safety Department, heating and cooling and fuel pumps. As this area of Town can become isolated by roadway flooding from the mainland, this facility becomes the only Public Safety facility to a community of several hundred people during many storm events. The personnel housed at this facility have specialized training in law enforcement, marine operations and/or EMS. Status of development: The Town Engineer has indicated that the roof area will have to be reinforced to support the generator. The Town Engineering Department will coordinate the design and

	construction of appropriate structural reinforcements. A qualified contractor has inspected the existing electrical demand and wiring within the facility and determined that the proposed generator is sufficient to support essential operations. Maintenance: To be performed by staff to keep generator in good working order, during regular work hours. There will be no new costs associated with annual maintenance.
Mitigation Action/Project Type	**SIP**
Objectives Met	**2,7, 12,13,14,15,16**
Applies to existing structures/infrastructure, future, or not applicable	**Existing**
Benefits (losses avoided)	Loss of use of facility and disruption to public safety operations. Recent damages are estimated at $19,000, however additional evaluation of past and recent damages based on magnitude and frequency of power outages is needed in order to perform a full Benefit Cost Analysis.
Estimated Cost	$63,300
Priority*	*High*
Plan for Implementation	
Responsible Organization	Town of Smithtown Department of Public Safety: John Valentine, Director
Local Planning Mechanism	Town of Smithtown
Potential Funding Sources	Hazard Mitigation Grant Program; local cost share
Timeline for Completion	Short (dependent on funding availability)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

*** Refer to results of Prioritization (page 2)**

Prioritization

Number: Sandy HMGP LOI #: 2226
Mitigation Action/Initiative: Town of Smithtown Back-up Power for Marina Fueling Facility

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provides continuity of operations for a Town critical response facility which serves, besides Town communities, the Long Island Sound and a portion of the Village of Nissequogue
Property Protection	1	Provides power to building and marina functions which prevent property damage
Cost-Effectiveness	1	This project is considered highly cost-effective
Technical	1	There are no technical issues associated with the project, and with routine maintenance will provide long term protection against power interruptions.
Political	1	The project is supported by the Town and Village of Nissequogue leadership
Legal	1	The Town has full legal authority to implement this project.
Fiscal	0	Should funds become available, the Town can fund the local match
Environmental	1	There are no environmental constraints associated with this project.
Social	1	This project benefits all sectors of the community and enhances life/safety protection for a portion of the Village of Nissequogue which currently becomes isolated due to tidal flooding from the mainland
Administrative	1	The project would be administered jointly by the Town Department of Public Safety, and maintained by existing public works staff
Multi-Hazard	1	The project would address all natural hazards
Timeline	1	Once funds became available, the project could be completed in less than one year
Agency Champion	1	Supported by Town and Village of Nissequogue electeds
Other Community Objectives	1	The project is part of the Town Public Safety plan to enhance emergency response and disaster mitigation for the long term
Total	13	
Priority (High/Med/Low)	High	

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Objectives: Please insert the plan objectives (by number) that would be met if the action/project is implemented.

Plan Objectives:

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9. Lower cost of flood insurance premiums through CRS program.

10. Protect against invasive species (noxious weeds) and exclude and eradicate invasive insects, disease, and weeds.

11. Implement water conservation measures, use reclaimed water, and increase groundwater usage, create surface water storage where appropriate.

12. Develop or improve early warning emergency response systems and evacuation procedures.

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12. Timeline - Can the action be completed in less than 5 years (within our planning horizon)?

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Mitigation Action Worksheet

Please complete one sheet per action/project with as much detail as possible, using the guidance beginning on page 3 and examples provided by FEMA.

Name of Jurisdiction: Town of Smithtown/Village of Nissequogue
Number: Sandy HMGP LOI #: 131; State #2336
Mitigation Action/Initiative: Elevation of Long Beach Road

Assessing the Risk	
Hazard(s) addressed:	Flooding, Hurricane, Nor-Easters, Severe Storms, Severe Winter Storm, Coastal Erosion
Specific problem being mitigated:	Long Beach Road runs along the shoreline of Stony Brook Harbor on the north shore of Long Island. The problem targeted in this Mitigation Action focuses on an approximately 1,500' segment of the roadway for the purpose of mitigating damages caused by repetitive flooding. The approximate midpoint of this segment is at Latitude 40.917874, Longitude: -73.178387. Long Beach Road provides the sole means of vehicular access to a narrow peninsula that is home to a residential community of 45 homes (approximately 250 residents) as well as a Town of Smithtown Public Safety marine facility. The Long Beach community and the marine facility are located to the east of the targeted segment, at the eastern end of the peninsula, and are completely cut off from the mainland when the roadway floods. Emergency vehicles are impeded from responding to this community during flood events, posing a serious safety risk. In addition to residential homes in this area, there are three municipal recreation facilities, one municipal marina, one municipal mooring facility, one private recreation facility, one private marina and one private business (a fueling facility). The Town of Smithtown Department of Public Safety, consisting of five operating divisions (Fire Prevention, Park Ranger, Ordinance Compliance, Waterways & Navigation and Emergency Management), is responsible for uniformed enforcement and security activities within the Town's 54 square miles, and serves a population of over 160,000. The Town's Harbor Master and Marine Response Team are stationed at the Long Beach marina. The fueling facility at this location provides 6,000 total gallons of storage in two tanks. This facility routinely serves the Department of Public Safety patrol and emergency response vessels, consisting of a fleet of five (5) boats responsible for code enforcement, life rescue and public safety. The Marine Response Team provides coverage from as far west as Northport to as far east as Stony Brook, and the response area encompasses local waters, the interstate border with Connecticut, the Long Island Power Authority fuel dispensing platform and

	commercial shipping lanes for fuel carriers. The marina is in a remote location relative to other critical facilities and fuel supply locations in the Town, is in a flood zone, and the only roadway access is via Long Beach Road. During emergency events, this facility serves emergency response vessels as well as vehicles operated by the Department of Public Safety, local fire departments, two village police departments, and county, state and other public safety agencies. It also serves as an adjunct facility available to provide fuel to the Town's primary fueling station. Loss of use of each of the above facilities occurs with each flood event that impedes traffic on Long Beach Road. Flooding of up to two feet on the roadway has been observed. Other impacts of the flooding include roadway damage, erosion and environmental damage including sediment discharged to nearby waterways. Flooding has occurred well prior to 1958, when the road was constructed to modern standards and re-graded to alleviate some of the routine flooding at the time, but the severity and frequency of flooding have been increasing in the last ten years. The Town of Smithtown Harbormaster reports that during spring and fall, each new moon and each full moon results in roadway flooding of over one foot of water. This equates to 12 flooding events annually due solely to tidal action. He also reports that storms involving east winds hold water in the Long Island Sound, and leads to tidal flooding. He average frequency for this type of flooding is twice per month, again resulting in a foot or more of water on the roadway. The floods typically persist for about two hours before the road is passable again. Tidal and minor storm events, then, result in an estimated 36 roadway closures per year. **Types of damages that occur include:** -Physical Damages: Roadway damage, erosion requiring repaving, patching, and addition of fill on an annual basis. -Loss of Function of Long Beach Road, as it is impassable during flood events. As a result the facilities listed above are not accessible. Homeowners and service workers have no means of access or egress. Loss of business income is experienced by service workers and the private facilities that are cut off from the mainland due to flooding. -Loss of use of Public Safety marine facility due to inaccessibility. Fuel reserves are not accessible. -Emergency Management: The Town of Smithtown Office of Public Safety leads evacuation efforts. Debris removal and cleanup are

	performed by Town of Smithtown and Village of Nissequogue Highway Departments. The Village of Nissequogue Fire Department provides volunteer assistance in evacuation and debris removal/cleanup. -Emergency response. During roadway flood events it is common for cars to become trapped in floodwaters. The Town Harbor Master reports that approximately 12 rescues are performed each year, with operations consisting of extricating passengers from vehicles. Vehicle owners must then pay for a private tow truck to remove the vehicle. The Harbor Master estimates that each rescue takes two Public Safety personnel a minimum of two hours from the time they are notified of the problem to successful evacuation of the passengers. -Evacuation. During severe storms residents evacuate. -General annual repairs, maintenance and road clearing required due to flooding: Village of Nissequogue: $1,500; Town of Smithtown: $15,000 Total: $16,500 (reflecting annual repairs, maintenance, road clearing only.) The FEMA-Approved Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan (October 2008) contains jurisdictional annexes for the Village of Nissequogue and the Town of Smithtown. Nissequogue Village is within the Town of Smithtown and falls under the Town's Emergency Management Plan. The Town and Village both support this Mitigation Action.
Evaluation of Potential Actions/Projects	

Actions/Projects Considered (name of project and reason for not selecting):	**1. No Action:** A no action alternative will result continued frequent flooding on Long Beach Road. Residents who rely on Long Beach Road as their sole means of access and egress will continue to experience short-term road closures that occur at minimum, 36 times per year, as well as longer term closures that accompany severe storm events. Evacuations will continue to occur and residents as well as service workers will continue to experience damages including lost wages and lost work time. The Town will continue to incur damages relating to use of emergency management and emergency response personnel for road closures, evacuations and rescues. The Public Safety marine facility will continue to be cut off from the mainland, hampering the ability of emergency response personnel to respond to emergencies in the Long Beach community or report for duty at the marine facility to perform their assigned duties to protect interstate waters, local waters and commercial shipping channels. Fuel reserves at this remote facility will not be available for Town, village, county and other emergency response and public works vessels and vehicles, forcing them to travel to distant fueling sites, leaving this area with diminished service. Further, the facility's fuel reserves will be inaccessible in the event of a fuel shortage, as happened in the aftermath of Hurricane Sandy. For these reasons, the No Action alternative is not a feasible option.
	2. Raise the road to the level of protection of a 100 year storm. This would entail raising the road to 2' above the base flood elevation of 10' NAVD 1988, which is 12' NAVD88, or equivalently, approximately 10.8' NGVD 1929. Our current proposal raises the road to elevation approximately 9.1' NAVD88, or 8' NGVD 1929. This would be an elevation difference of 2.8' +/- above the existing roadway surface. The project site photos [available in Town of Smithtown files] illustrate why this would be very difficult to accomplish. The proposal would not be cost effective as the road snakes a very narrow geographic area between Stony Brook Harbor and a steep hillside. To raise the road this additional amount, the Town would incur extra fill material costs, but more importantly, the project area would have to be expanded in length by approximately 200' on either side in order to facilitate an effective grade transition. There would also be numerous trees, sediment, and environmental disturbance of the adjacent steep slope, which could result in destabilization of the slope, causing landslides and potential deleterious environmental effects in the adjacent waters. Heavy equipment would most likely have to work from a barge in the water. Obtaining a permit from NYSDEC for this level of disturbance would be quite difficult. The extra cost of this option is estimated to be an additional $1.5 million, for a total of $2 million dollars.

	3. Re-locate the entire roadway to higher ground by acquiring adjacent property. This would involve acquiring approximately 2.1 acres of private residentially zoned, environmentally sensitive property, for a cost of of approximately $3.4 million. The proposed roadway would be approximately 1500' in length, but would run up and down a hill, with the final slope of each segment being around 10%. This option would involve the clearing and grading of several acres of heavily treed, previously undisturbed natural land. Construction costs for the road would most likely exceed $1 million, but a detailed engineering estimate is not being performed as the land acquisition costs make this alternative cost-prohibitive. The total cost of this option would exceed $4.4 million, and require difficult and costly environmental permitting.
Action/Project Intended for Implementation	
Description of Selected Action/Project	**Raising of Long Beach Road:** **Engineering and design, surveying:** to be accomplished under the purview of the Town of Smithtown Engineering Department, working with external qualified engineers procured in compliance with Town procurement policies. Environmental consulting work will be performed a qualified consultant, most likely working under the supervision of a design consultant with specialized experience in NYSDEC Tidal wetlands permits for this local area. **Construction of road raising project:** The existing roadway, for a length of approximately 1500', has an elevation ranging from 6.1'-7.3' (NGVD 1929). The most extreme high tide on record is 7.4'. We propose raising this entire section of roadway to a minimum elevation of 7.5'; in some areas, the proposed elevation will range to 8.0'. The roadway will be re-graded so as not to trap flood waters - it is currently pitched away from the tidal shore, thus trapping rising waters when the tide does recede. Additionally, drainage conveyance systems and stormwater capacity will be added where feasible. To stabilize the raised roadway, a combination of rip-rap and gabion baskets will be used to protect the roadway from the tidal waters, and an allowance is included in our cost estimate for planting of native plants to help with natural shore protection. The total estimated project cost of $667,500 consists of: Engineering and surveying: $81,000 (In-kind: $15,000, Fees paid: $66,000) Construction: $580,000 (Labor and related construction costs) Environmental Consulting: $5,000 Permitting and other fees: $1,500 **Status of development process**: The Town of Smithtown Engineering Department and the Village of Nissequogue Engineer have evaluated the existing conditions extensively. **A note about datums, elevations and level of protection:** The survey provided with this application (prepared by Nissequotue

	Village Engineer Dan Falasco) uses an assumed datum; the LiDAR and FEMA Flood maps use NAVD 1988, and the Town Engineering Department used NGVD 1929 for the elevations listed in our LOI. NAVD 1988 elevations are approximately 1.6' less than NGVD 1929 elevations at this particular lat/long. (The conversion differs depending on lat/long; elsewhere in the Town it is 1.2'.) The Mean High Water lines for the project area are 4.1' (NGVD 1929) or 2.5' (NAVD 1988). Note the Baseflood elevation of 10' is an average of data collected both for the 2008 Flood Insurace Study, and the 1982 FEMA study which is mentioned therein. The 2008 Flood Insurance Study notes that the coastline in Stony Brook Harbor within the Village of Nissequogue is complicated and difficult to study. Based on observation, local surveys, and local knowledge by the Town Public Safety Department and the Town Engineering Department, the level of protection of this project will reduce the amount of events per year causing damages from 24 annually to just 1-2. The related stormwater improvements contribute to the mitigation effort and, in addition, will prevent diverted flood water from impacting surrounding areas. **Maintenance**: The roadway will continue to be maintained by the Village of Nissequogue. Because flood frequency, duration and severity are anticipated to be greatly reduced, costs that have been incurred by both the Town and the Village associated with annual maintenance and clearing of debris are expected to be drastically reduced.
Mitigation Action/Project Type	SIP
Objectives Met	2, 3, 5, 7,13,14, 15,16
Applies to existing structures/infrastructure, future, or not applicable	Existing
Benefits (losses avoided)	Losses avoided include: loss of use; service disruption; roadway repair costs; evacuation costs; rescue costs. Every time the road is inaccessible, approximately 24 times/year, and every time a car is flooded with salt water and needs to be towed, approximately 12 times/year, this causes economic damage to Smithtown residents. The inability of emergency crews to travel on the roadway between the Public Safety Critical Facility and other nearby critical facilities in the hamlet of St. James and the Villages of Nissequogue and Head of the Harbor, reduces response times and hampers emergency response. By reducing flooding to approximately 1-2 times/year, the costs of construction should far exceed the value of annual repetitive damages stretching back over 30 years. **Benefits: $2,990,430** per BCA completed December 19, 2013 by NYSOEM. BCR 4.37.

Estimated Cost	$684,562
Priority*	High
Plan for Implementation	
Responsible Organization	Town of Smithtown Office of Public Safety: John Valentine, Director
Local Planning Mechanism	Town of Smithtown
Potential Funding Sources	Hazard Mitigation Grant Program with local cost share
Timeline for Completion	Medium Term (dependent on funding availability)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: Progress on Action/Project:

*** Refer to results of Prioritization (page 2)**

Prioritization

Number: Sandy HMGP LOI #: 131
Mitigation Action/Initiative: Elevation of Long Beach Road

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Long Beach Road is the only access route to a critical marine response facility and a residential neighborhood
Property Protection	1	Town of Smithtown and Village of Nissequogue are experiencing municipal damages as a result of roadway flooding and erosion
Cost-Effectiveness	1	Alternatives have been evaluated, and the proposed solution is the least expensive option that provides the level of protection needed
Technical	1	The project has been determined to be feasible and effective by the Town and Village Engineers
Political	1	The leadership of the Town and the Village are committed to this project should funding become available
Legal	1	The Town and the Village have the legal authority to implement this project as a partnership.
Fiscal	0	Should funds become available, the Town can provide the local match
Environmental	0	The construction activity associated with the project would occur within regulated NYSDEC wetlands, but the project includes provisions for stormwater runoff remediation and vegetative shoreline stabilization which will result in long term environmental benefits
Social	1	The project will benefit a residential community on a peninsula that currently becomes isolated from the mainland several times a year during natural events which result in high tides and coastal flooding
Administrative	1	The Town of Smithtown Engineering Department will administer the project. The project will reduce the maintenance required of Village and Town public works staff.
Multi-Hazard	1	The project will address the Nor'Easter, Severe Winter Storms, Severe Storms, Hurricane, Coastal Erosion, and Flooding hazards
Timeline	1	Once funds become available, the project can be completed in less than five years
Agency Champion	1	Supported by Town and Village of Nissequogue electeds
Other Community Objectives	1	Should funds become available, final project designs will be coordinated to be in harmony with the policies of the Village LWRP and other local land use plans
Total	12	
Priority (High/Med/Low)	High	