



9.21 Village of Lloyd Harbor

This section presents the jurisdictional annex for the Village of Lloyd Harbor. It includes resources and information to assist public and private sectors to reduce losses from future hazard events. This annex is not guidance of what to do when a disaster occurs. Rather, this annex concentrates on actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. This annex includes a general overview of the municipality and who in the Village participated in the planning process; an assessment of the Village of Lloyd Harbor’s risk and vulnerability; the different capabilities utilized in the Village; and an action plan that will be implemented to achieve a more resilient community.

9.21.1 Hazard Mitigation Planning Team

The following individuals have been identified as the Village of Lloyd Harbor’s hazard mitigation plan primary and alternate points of contact.

Table 9.21-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: Thomas Krumpster, Chief of Police Address: 32 Middle Hollow Rd, Huntington, NY 11743 Phone Number: (631) 549-8820 Email: tkrumpter@lloydharborpd.org	Name/Title: Robert Schwarz, Superintendent of Public Works Address: 32 Middle Hollow Rd, Huntington, NY 11743 Phone Number: (631) 549-8880 Email: Rschwarz@lloydharbor.org
NFIP Floodplain Administrator	
Name/Title: James Siino, Building Inspector Address: 32 Middle Hollow Rd, Huntington, NY 11743 Phone Number: (631) 549-2640 Email: jrs@lloydharbor.org	

9.21.2 Municipal Profile

On March 8, 1685, the Lieutenant Governor granted James Lloyd the royal patent for Horse Neck and formally renamed it the “Manor of Queen’s Village”. Thus, James Lloyd became Lord of the Manor, and Lloyd Neck was annexed to the Town of Oyster Bay, Queens County. It was not until 1885, after a year of much lobbying in the State Legislature, that Lloyd Neck became a part of the Town of Huntington and Suffolk County, thereby seceding from Oyster Bay, Queens County. In 1926, Lloyd Neck and West Neck became incorporated as a municipality which was named Lloyd Harbor.

The Village of Lloyd Harbor is located along the border of Suffolk County and Nassau County, NY; to the very north of the Town of Huntington.

The legislative body of a village is the Board of Trustees, which in our Village is composed of the Mayor and six Trustees.

According to the U.S. Census, the 2010 population for the Village of Lloyd Harbor was 3,660. The estimated 2017 population was 3,676, a 0.4 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 2.8 percent of the population is 5 years of age or younger and 18.6 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

9.21.3 Growth/Development Trends





Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to understanding a jurisdiction’s overall risk to its hazards of concern. Table 9.21-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. The figures at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development, where available. The recent and anticipated development depicted on these figures excludes the Suffolk County wastewater upgrades; refer to Section 4 (County Profile) for additional information on this development.

Table 9.21-2. Recent and Expected Future Development

Type of Development	2014		2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP* (within regulatory floodplain/ Outside regulatory floodplain)												
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single Family	5	N/A	4	N/A	6	N/A	5	N/A	3	N/A	3	N/A
Multi-Family	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
Other (commercial, mixed-use, etc.)	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
Total Permits Issued	5	N/A	4	N/A	6	N/A	5	N/A	3	N/A	3	N/A
Property or Development Name	Type of Development	# of Units / Structures		Location (address and/or block and lot)		Known Hazard Zone(s)*		Description / Status of Development				
Recent Major Development and Infrastructure from 2015 to Present												
None identified												
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years												
None anticipated												

9.21.4 Capability Assessment

The Village of Lloyd Harbor performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community’s adaptive capacity for the impacts of climate change.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized in Capability Assessment (Section 9.21.4). The Village of Lloyd Harbor identified specific integration activities that will be incorporated into municipal procedures are included



in the updated mitigation strategy. Appendix G provides the results of the planning/policy document review and the answers to integration survey questions.

Planning, Legal, and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Village of Lloyd Harbor and where hazard mitigation has been integrated.

Table 9.21-3. Planning, Legal, and Regulatory Capability

	Do you have this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Department / Agency Responsible	State Mandated	Has this been integrated?	
						Yes	If no - can it be a mitigation action?
Codes, Ordinances, & Requirements							
Building Code	Yes	Fire Prevention and Building Construction, Chapter 116	State	Building Inspector, Code Enforcement Officer and Police Department of the Village of Lloyd Harbor and the Fire Inspectors of the respective Fire Districts serving the Village of Lloyd Harbor	Yes	Yes	-
Comment: The Fire Prevention and Building Construction ordinance enforces the building code.							
Zoning Code	Yes	Ch. 205; Adopted 12-15-1966 (Updated)	Local	Zoning Board of appeals	No	Yes	-
Comment: The Zoning code regulates development in the Village.							
Subdivisions	Yes	Ch. 175; Adopted 4-18-1991 (Updated)	Local	Building Inspector, Planning Board	No	Yes	-
Comment: The Subdivision ordinance was adopted to provide for the future growth and development of the Village and affording adequate facilities for the housing, transportation, distribution, comfort, convenience, safety, health and welfare of its population							
Stormwater Management	Yes	Local	Phase II Storm Water regulations, and amendments to Ch. 170 and amendments to Ch. 205 and Ch. 175 of Village Code, adopted in 12-2008	Building Inspector, Village Engineer	Yes	Yes	-
What other plans or codes refer to the Stormwater Management code/ordinance? The Village is very pro-active in stormwater management, and just completed an EPA MS4 inspection (late 2013).							
Post-Disaster Recovery	No	-	-	-	No	-	-
Comment:							
Real Estate Disclosure	Yes	Property Condition Disclosure Act, NY Code - Article 14 §460-467	State	NYS Department of State, Real Estate Agent	Yes	Yes	-



	Do you have this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Department / Agency Responsible	State Mandated	Has this been integrated?	
						If no - can it be a mitigation action?	
Comment:							
Growth Management	No	-	-	-	No	-	-
Comment:							
Site Plan Review	Yes	Site Permit Review Board, part of the Village Code	Local	Building Inspector	Yes	Yes	-
Comment:							
Environmental Protection	Yes	Critical Environmental Areas – Chapter 106	State, Local	Planning Board	Yes	Yes	-
<p>Comment: The following lands are hereby designated as critical environmental areas under the provisions of the State Environmental Quality Review Act and Part 617.4(h) of NYCRR:</p> <p>A. All areas of the village within two hundred (200) feet landward of the mean highwater line.</p> <p>B. All upland areas and coastal waters lying within the limits of NYS DEC-designated tidal wetlands and in the three (3) state-designated significant coastal fish and wildlife habitats within the Local Waterfront Revitalization Area (LWRA), i.e. Lloyd Point, Lloyd Harbor and Cold Spring Harbor.</p> <p>C. Lefferts Mill Tidal Pond.</p>							
Flood Damage Prevention	Yes	Floodplain Districts, Ch. 205 Article VII	State	Building Inspector	Yes - BFE+2 feet for all construction in the SFHA (residential and non-residential)	Yes	-
<p>Comment: It is the purpose of this article to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by methods and provisions designed to:</p> <ul style="list-style-type: none"> • Protect human life and health. • Minimize expenditure of public money for costly flood control projects. • Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public. • Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard. • Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas. • Ensure that potential buyers are notified that property is in an area of special flood hazard. • Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. 							
Municipal Separate Storm Sewer System (MS4)	Yes	Erosion and Sediment Control; Stormwater Management – Chapter 171	State, Local	Designated Officer by the Board of Trustees	Yes	Yes	-
<p>Comment: The purpose of this Chapter is;</p> <p>A. To meet the requirements of the SPDES General Permit for Stormwater Discharges from MS4s, Permit No. GP-02-02 or as amended or revised;</p> <p>B. To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge non-stormwater wastes;</p> <p>C. To prohibit illicit connections, activities and discharges to the MS4;</p> <p>D. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this article and all applicable laws; and</p> <p>E. To promote public awareness of the hazards involved in the improper discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment and other pollutants in the MS4.</p> <p>It is required that no application for approval of a land development activity shall be reviewed until the appropriate board has received a stormwater pollution prevention plan (SWPPP) prepared in accordance with the specifications in this local law.</p>							



Section 9.21: Village of Lloyd Harbor

	Do you have this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Department / Agency Responsible	State Mandated	Has this been integrated?	
						If no - can it be a mitigation action?	
Emergency Management	No	-	-	-	Yes	-	-
Comment:							
Climate Change	No	-	-	-	Yes	-	-
Comment:							
Disaster Recovery Ordinance	No	-	-	-	No	-	-
Comment:							
Disaster Reconstruction Ordinance	No	-	-	-	No	-	-
Comment:							
Other	Yes	See below	See below	See below	No	Yes	-
Comment: Special Purpose Ordinances: Yes; Ch.175 subdivisions and Ch.205 zoning code; Local; Building Inspector, Planning Board Yes; Ch. 205; Local; Building Inspector, Board of Trustees Coastal Erosion Control Districts: Yes; Permit Review Board Village has Coastal Overlay Districts (CODs); Local, State, Building Inspector, NYSDEC, USACE							
Planning Documents							
Comprehensive Plan	Yes	Master Plan of 1971, presently being updated and in draft form	Local	Planning Board, Board of Trustees	No	Yes	-
Comment: Presently being updated.							
Capital Improvement Plan	Yes	Village Improvements; Roads, Buildings, etc.	Local	Board of Trustees, Village Engineer	No	Yes	-
Comment:							
Disaster Debris Management Plan	Yes	Suffolk County Multi-Jurisdictional Debris Management Plan	County, Local	Suffolk County FRES	No	Yes	-
Comment: This NYS and FEMA approved comprehensive Multi-Jurisdictional Debris Management Plan was developed through the cooperative efforts of Suffolk County and each of the ten (10) Towns, working together in conjunction with partners from private, state and federal agencies.							
Floodplain or Watershed Plan	Yes	Floodplain Districts, Article VII of Ch.205 adopted 5-16-1983	Local	Building Inspector, Village Engineer, NYS-DEC	No	Yes	-
Comment:							
Stormwater Plan	Yes	Phase II Storm Water regulations, and amendments to Ch. 170 and	Local	Building Inspector, Village Engineer	No	Yes	-





	Do you have this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Department / Agency Responsible	State Mandated	Has this been integrated?	
						If no - can it be a mitigation action?	
		amendments to Ch. 205 and Ch. 175 of Village Code, adopted in 12-2008					
Comment: The Village is very pro-active in stormwater management, and just completed an EPA MS4 inspection (late 2013).							
Open Space Plan	No	-	-	-	Yes	-	-
Comment:							
Urban Water Management Plan	No	-	-	-	No	-	-
Comment:							
Habitat Conservation Plan	Yes	Conservation Board	Local	Board of Trustees	No	Yes	-
Comment:							
Economic Development Plan	No	-	-	-	No	-	-
Comment:							
Shoreline Management Plan	Yes	Local Waterfront Revitalization Plan, adopted 10-16-1995	Local	Planning Board	Yes	No	-
Comment: Chapter 106, Critical Environmental Areas, references the Plan by stating that all upland areas and coastal waters lying within the limits of NYS DEC-designated tidal wetlands and in the three (3) state-designated significant coastal fish and wildlife habitats within the Local Waterfront Revitalization Area (LWRA), i.e. Lloyd Point, Lloyd Harbor and Cold Spring Harbor are critical environmental areas.							
Community Wildfire Protection Plan	No	-	-	-	No	-	-
Comment:							
Forest Management Plan	Yes	Trees – Chapter 183	Local	Building, Code Enforcement Officer/Conservation Advisory Council	No	Yes	-
Comment: While not a comprehensive Forest Management Plan, the Trees Ordinance was created as the Board of Trustees found that the indiscriminate and excessive cutting of trees and shrubs, or specimen trees, results in increased municipal costs for the control of drainage and erosion and impairs the natural scenic and aesthetic qualities of the environment which the village is obligated to protect. Trees and shrubs, in addition to preserving the bucolic and rural atmosphere of the village, preserve the ecology by reducing noise, providing shade, preserving and fostering air quality and stabilize the soil and control water pollution by preventing soil erosion and flooding, while providing a natural habitat for wildlife. Removing more than 12 trees with a circumference of 20 inches or greater or removing any “specimen trees” requires applying to and receiving approval from the Conservation Advisory Council.							
Transportation Plan	No	-	-	-	No	-	-
Comment:							
Agriculture Plan	No	-	-	-	Yes	-	-
Comment:							
Other (this could include a climate action plan, tourism plan,	No	-	-	-	No	-	-



	Do you have this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Department / Agency Responsible	State Mandated	Has this been integrated?	
						If no - can it be a mitigation action?	
business development plan, etc.)							
Comment:							
Response/Recovery Planning							
Comprehensive Emergency Management Plan	Yes	Suffolk County Comprehensive Emergency Management Plan (2018)	Suffolk County and Associated Jurisdictions	Suffolk FRES	Yes	Yes	-
Comment: The County Comprehensive Emergency Management Plan (CEMP) describes the emergency obligations of County government and its capability and capacity to undertake emergency assignments or acquire those resources necessary to support its emergency mission. The Concept of Operations of the CEMP describes the management of emergencies within the National Incident Management System (NIMS) and details emergency management programmatic efforts to accommodate present standards.							
Strategic Recovery Planning Report	No	-	-	-	No	-	-
Comment:							
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	Yes	-	-
Comment:							
Post-Disaster Recovery Plan	No	-	-	-	No	-	-
Comment:							
Continuity of Operations Plan	No	-	-	-	No	-	-
Comment:							
Public Health Plan	No	-	-	-	No	-	-
Comment:							
Other	-	-	-	-	No	-	-
Comment:							

Table 9.21-4. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Response Yes/No; Provide further detail
Development Permits. If yes, what department?	Yes. Building Department
Permits are tracked by hazard area. For example, floodplain development permits.	Yes. Building Department
Buildable land inventory If yes, please describe If no, please quantitatively describe the level of buildout in the jurisdiction.	Yes. Building Department

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Village of Lloyd Harbor.



Table 9.21-5. Administrative and Technical Capabilities

Resources	Available? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Building Department
Mitigation Planning Committee	Yes	DPW
Environmental Board/Commission	Yes	Conservation Board
Open Space Board/Committee	Yes	Conservation Board
Economic Development Commission/Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	County Code Red, System specific to village being developed
Maintenance programs to reduce risk	Yes	DPW
Mutual aid agreements	Yes	Evacuation and Sheltering with Town of Huntington
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Outside Contractor (currently H2M)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Building Inspector and/or Village Engineer
Planners or engineers with an understanding of natural hazards	Yes	Village Engineer
Staff with expertise or training in benefit/cost analysis	No	Outside contractor as needed
Professionals trained in conducting damage assessments	Yes	DPW
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Village Engineer
Scientist familiar with natural hazards	No	-
NFIP Floodplain Administrator (FPA)	Yes	Building Inspector (currently under contract)
Surveyor(s)	No	Outside contractor as needed
Emergency Manager	Yes	Police Chief
Grant writer(s)	No	H2M can provide contract support
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	Yes	Village Engineer and DPW manage stormwater

Fiscal Capability

The table below summarizes financial resources available to the Village of Lloyd Harbor.

Table 9.21-6. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes



Financial Resources	Accessible or Eligible to Use (Yes/No)
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other federal or state Funding Programs	CHIPs from NYDOT
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	Mitigation Grant Programs

Education and Outreach Capability

The table below summarizes the education and outreach resources available to the Village of Lloyd Harbor.

Table 9.21-7. Education and Outreach Capabilities

Indicate if your jurisdiction has the following resources	Yes/No; Please describe
Public information officer or communications office?	Chief of Police
Personnel skilled or trained in website development?	No
Hazard mitigation information available on your website; if yes, describe	No
Social media for hazard mitigation education and outreach; if yes, briefly describe.	No
Citizen boards or commissions that address issues related to hazard mitigation; if yes, briefly describe.	No
Other programs already in place that could be used to communicate hazard-related information; if yes, briefly describe.	In Development
Warning systems for hazard events; if yes, briefly describe.	County Code Red
Natural disaster/safety programs in place for schools; if yes, briefly describe.	The County completes safety programs in area schools
Other	No

Community Classifications

The table below summarizes classifications for community programs available to the Village of Lloyd Harbor.

Table 9.21-8. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	NP	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	NP	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	NP	-	-
NYSDEC Climate Smart Community	NP	-	-
Storm Ready Certification	NP	-	-
Firewise Communities classification	NP	-	-
Other	No	-	-

Note:

- N/A Not applicable
- NP Not participating
- Unavailable





Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). In other words, it describes a jurisdiction’s current ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.21-9. Adaptive Capacity of Climate Change

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low*
Coastal Erosion	Medium
Cyber Security	High
Disease Outbreak	Medium
Drought	Medium
Earthquake	Medium
Expansive Soils	Medium
Extreme Temperature	Medium
Flood	Medium
Groundwater Contamination	Medium
Hurricane	Medium
Infestation and Invasive Species	Medium
Nor’Easter	Medium
Severe Storm	Medium
Severe Winter Storm	Medium
Shallow Groundwater	Medium
Wildfire	Medium

- *High Capacity exists and is in use
- Medium Capacity may exist; but is not used or could use some improvement
- Low Capacity does not exist or could use substantial improvement
- Unsure Not enough information is known to assign a rating

The Village has access to resources to determine the possible impacts of climate change upon the municipality. The Village administration is supportive of integrating climate change in policies or actions and currently has monitoring programs for climate integration.

9.21.5 National Flood Insurance Program

This section provides specific information on the management and regulation of the regulatory floodplain.

NFIP Floodplain Administrator (FPA)

James Siino, Building Inspector

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Village of Lloyd Harbor.

Table 9.21-10. NFIP Summary

Municipality	# Policies	# Claims (Losses)	Total Loss Payments	# RL Properties
Village of Lloyd Harbor	69	31	\$339,441	1





Source: FEMA 2020
Notes: According to FEMA statistics as of 7/13/2020
RL Repetitive Loss

Flood Vulnerability Summary

All properties below elevation 12 on the causeway (West Neck Road) are flood prone. The Village does not have a list of properties that have been damaged by flooding or are interested in mitigation. There are no RiskMAP projects currently underway in the Village. Substantial Damage determinations are made through inspection. No determinations have been made for recent flood events.

Only one home has recently been elevated in the Village and was raised eight feet above the base flood elevation at the owner's expense.

Resources

The Village uses NYS DEC FPLM maps to designated flood areas. The building department includes a certified floodplain manager. The Village's building inspector has resources to determine possible future flooding conditions from climate change.

The Village floodplain management staff do not need any assistance or training to support the Village's floodplain management program.

NFIP administration services are accomplished through Building Department & Engineers.

Compliance History

The Village of Lloyd Harbor does not have any outstanding NFIP compliance violations that need to be addressed. The most recent Community Assistance Visit (CAV) took place on August 1, 2017.

Regulatory

The Wetlands and Floodplains Local Law (205-8) serves as the flood damage prevention ordinance. The ordinance was last updated in 1995. The Village's floodplain management program meets minimum requirements. In addition to the Wetlands and Floodplains Local Law, the Village also has a Local Waterfront Revitalization Program which supports floodplain management.

Community Rating System

The Village of Lloyd Harbor does not participate in the Community Rating System.

9.21.6 Integration with Other Planning Initiatives

As this HMP update is implemented, the Village of Lloyd Harbor will use information from the plan as the best available science and data for natural hazards. The capability assessment presented in this annex identifies codes, plans, and programs that provide opportunities for integration. The Suffolk County and local action plans developed for this HMP update actions related to plan integration, as well as progress on these actions, will be reported through the progress reporting process described in Volume I. New opportunities for integration also will be identified as part of the annual progress report.

Existing Integration

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”:

- **Highway Department:** The Village owns and maintains 13 miles of the main roadways in the Village — West Neck Road, Lloyd Harbor Road, Lloyd Lane, School Lane (to Plover intersection), Mill Road, Southdown Road, Middle Hollow Road, Jennings Road, and Snake Hill Road. The Highway Department also maintains the stormwater drains, removes downed trees blocking Village roads, and performs needed plowing and repairs. All private roads (approximately 28 miles) are maintained solely by the Road Associations or owners. Road Associations of private roads hire their own contractors who are responsible for road repair, snow plowing, removal of downed trees, and drainage problems. The Highway Department (staff of nine) operates under the direction of the Department Superintendent and Highway Foreman. Two of the Trustees are responsible for liaison.
- **Administrative Staff:** The employee staff at Village Hall includes the Village Clerk/ Treasurer, Assessor, Deputy Clerk, Deputy Treasurer, and administrative assistant. In addition, the Village Building Inspector, while not employee, can be contacted through Village Hall.
- **Land Use Plans:** The Village maintains the Master Plan, habitat conservation plan, and shoreline management plan to minimize risk in hazard areas. Updates will include a review of the HMP to ensure that hazard areas are identified in the respective plans.
- **Building Code, Ordinances, and Enforcement:** The Village reviews planned development against the hazard areas identified in the HMP during zoning and subdivision reviews.
- **Village Park Beach Renourishment:** The Village has secured necessary permits to nourish Village Park beach near Lloyd Harbor Road on annual basis as needed.
- **White Tailed Deer Management:** The Village works to maintain a reasonable deer population with the help of Wildlife Management Professionals.

Opportunities for Future Integration

None identified.

9.21.7 Evacuation, Sheltering, Temporary Housing, and Permanent Housing

Evacuation routes, sheltering measures, temporary housing, and permanent housing must all be in place and available for public awareness to protect residents, mitigate risk, and relocate residents, if necessary, to maintain post-disaster social and economic stability.

Evacuation Routes

In the event that evacuation is necessary, Lloyd Harbor Police would notify residents of evacuations and location of shelters in cooperation/coordination with the Town of Huntington.

Routes out of Village of Lloyd Harbor are as follows:

- West Neck Road – (South)
- Southdown Road – (South)
- Jennings Road – (East) to West Neck Road (outside of Village) then south



Sheltering

The Village of Lloyd Harbor has an existing agreement with the Town of Huntington and the American Red Cross for sheltering.

Temporary Housing

The Village of Lloyd Harbor has noted that the Upper Park could be utilized for temporary housing in an emergency event. The Park is located across from 440 West Neck Road. The Park does not have water or electric supply in the particular area identified for temporary housing but utilities could likely be extended to reach the area in an emergency.

Permanent Housing

The Village of Lloyd Harbor has not identified permanent housing locations for structures located in the SFHA that need to be relocated or new properties that must be built once severely damaged properties are demolished.

9.21.8 Hazard Event History Specific to the Village of Lloyd Harbor

Suffolk County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5 (Risk Assessment) 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 Village of Lloyd Harbor’s history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Suffolk County. Table 9.21-11 provides details regarding municipal-specific loss and damages the Village experienced during hazard events. Information provided in the table below is based on reference material or local sources. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.21-11. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
February 8 – 9, 2013	Severe Winter Storm and Snowstorm (FEMA DR-4111)	Yes	Low pressure that formed along the northern Gulf coast by the morning of Thursday, February 7, 2013 moved northeast to near Cape Hatteras by the morning of Friday, February 8, 2013 . The low then rapidly intensified while moving northeast to a position east of Cape Cod by the morning of Saturday, February 9, 2013, producing very heavy snowfall and blizzard conditions across central and eastern Long Island on February 8th and 9th, and winter storm conditions across the rest of southeast New York.	The Village plowed Massive Amounts of Snow – Used above normal quantities of Road sand & Salt – Amount submitted to FEMA - \$44,909.39
August 12, 2016	Thunderstorm Wind	No	A trough of low pressure helped trigger isolated severe storms, which impacted Nassau and Suffolk Counties	A tree was reported down on Soundcrest Lane in Lloyd Harbor resulting in \$1K in property damage.
March 14 – 15, 2017	Severe Winter Storm and Snowstorm (FEMA DR-4322)	Yes	On Tuesday, March 14th, rapidly deepening low pressure tracked up the eastern seaboard resulting in damaging winds in Suffolk County.	Snow plowing issues and FEMA denied reimbursement funding (\$3,162 for personnel overtime, \$3, 454 for



Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
				equipment for storm cleanup, and \$2,340 for salt and sand)
March 3-4, 2018	Nor'Easter	No	North end of causeway heavily damaged	Repair done by village from funds, \$150k

Notes:

- EM Emergency Declaration (FEMA)
- FEMA Federal Emergency Management Agency
- DR Major Disaster Declaration (FEMA)
- N/A Not applicable

9.21.9 Hazard Ranking and Jurisdiction-Specific Vulnerabilities

The hazard profiles in Section 5 (Risk Assessment) of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes critical facility and community lifeline flood exposure, and the hazards of greatest concern and risk to the Village of Lloyd Harbor. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.

A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. A certainty factor of high, medium or low was selected and assigned to each hazard to provide a level of transparency and create increased understanding of the data used to support the resulting ranking. The following scale was used to assign a certainty factor to each hazard:

- High—Defined scenario/event to evaluate; probability calculated; evidenced-based/quantitative assessment to estimate potential impacts through hazard modeling.
- Moderate—Defined scenario/event or only a hazard area to evaluate; estimated probability; combination of quantitative (exposure analysis, no hazard modeling) and qualitative data to estimate potential impacts.
- Low—Scenario or hazard area is undefined; there is a degree of uncertainty regarding event probability; majority of potential impacts are qualitative.

Critical Facilities

New York Department of Environmental Conservation (DEC) Statute 6 CRR-NY 502.4 sets forth floodplain management criteria for State projects located in flood hazard areas. The law states that no such projects related to critical facilities shall be undertaken in a Special Flood Hazard Area (SFHA) unless constructed according to specific mitigation specifications, including being raised 2’ above the Base Flood Elevation (BFE). This statute is outlined at <http://tinyurl.com/6-CRR-NY-502-4>. While all vulnerabilities should be assessed and documented, the State places a high priority on exposure to flooding. Critical facilities located in an SFHA, or having ever sustained previous flooding, must be protected to the 500-year flood event, or worst damage scenario. For those that do not meet these criteria, the jurisdiction must identify an action to achieve this level of protection (NYS DHSES 2017).

The table below identifies critical facilities and community lifelines located in the 1-percent and 0.2-percent floodplain. It also summarizes if the facility is already mitigated in compliance with NYS standards (i.e., to the 0.2-percent annual chance event or worse-case scenario), or if a new mitigation action is proposed in the plan update.



Table 9.21-12. Potential Flood Losses to Critical Facilities

Name	Type	Exposure			Complies with NYS Standards	Addressed by Proposed Action
		1% Event		0.2% Event		
		A-Zone	V-Zone			
Boathouse – Coindre Hall*	County Building	X	-	X	Unknown	2020-Lloyd Harbor-006

Source: Suffolk County 2020; FEMA 2009

Notes: x = Facility is located in the floodplain boundary.

*Community Lifeline

Hazard Ranking

This section provides the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 5 (Risk Assessment) of the plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy as well as community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 5.3 (Hazard Ranking), each participating jurisdiction may have differing degrees of risk exposure and vulnerability compared to Suffolk County as a whole. Therefore, each municipality ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Village of Lloyd Harbor. The Village of Lloyd Harbor has reviewed the county hazard risk/vulnerability risk ranking table and provided input to its individual results to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard/vulnerability risk ranking, the Village of Lloyd Harbor indicated the following:

- The Village changed the calculated hazard ranking for coastal erosion from medium to high due to more small storms impacting the Village’s coastline.
- The Village changed the calculated hazard ranking for cyber security from medium to low, noting the utilization of outside consultants and contractors to prevent cyber security breaches.

Table 9.21-13. Hazard Ranking

Coastal Erosion High	Cyber Security Low	Disease Outbreak Medium	Drought Low	Earthquake Low	Expansive Soils Low
Extreme Temperature Medium	Flood Medium	Groundwater Contamination Medium	Hurricane High	Infestation and Invasive Species Medium	Nor’Easter High
Severe Storm Medium	Severe Winter Storm Medium	Shallow Groundwater Low	Wildfire Medium		

Identified Issues

The municipality has identified the following vulnerabilities within their community:



- Coastal erosion and the need for beach replenishment is an ongoing concern for the Village. This is particularly problematic because of the number of houses located within the coastal erosion zone.
- Tree/debris removal after a severe weather event is a concern because of the limited access the Lloyd Harbor Causeway provides. If debris is blocking the causeway, emergency vehicles are impeded from reaching residents. Power outages due to trees/limbs damaging power grid throughout Village.
- Flooding and erosion of low-lying areas, embankments and along the Village causeway during times of extreme high tides. Frequent flooding of the Lloyd Harbor Causeway cuts off access to the northern portion of the village. During hazard events this impedes emergency services from reaching residents and prevents residents from evacuating if necessary. During coastal storms and at times of extreme high tides, the Village has to close the causeway serving “The Neck” and State Park. Elevating the causeway has been investigated, but has been found to be prohibitively expensive. Closures during extreme high tides are for 2-3 hours.
- The Village has many private roads, which limits the Villages responsibility/authority to mitigate. LIPA does have vegetation management programs that address their rights-of-way on these private roads.
- Flood vulnerable properties include those on:
 - Beach Drive
 - Lloyd Harbor Road, East of Fiddler’s Green
 - Shore Road
 - Mallard Drive

9.21.10 Mitigation Strategy and Prioritization-

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

Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2014 HMP. Actions that are carried forward as part of this plan update are included in the updated mitigation strategy table (Table 9.21-15). 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 9.21-14. Status of Previous Mitigation Actions

Project #	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if complete)		Next Steps 1. Project to be included in 2020 HMP or Discontinue 2. If including action in the 2020 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Level of Protection	
VLH-1	Renourish the shoreline along the Causeway that connects Harbor to Lloyd Neck.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	Village Board		In Progress; Replaced and bolstered existing rock wave break as per engineered plans. The Village continues to explore options to further renourish the shoreline along the Causeway that connects mainland to Lloyd Neck.	Cost		1. Include in 2020 HMP 2. 3.
VLH-2	Renourish the shoreline at the Village Park beach.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	Village Board		Ongoing Capability; Secured necessary permits to nourish Village Park beach on annual basis as needed	Cost		1. Discontinue 2. Develop new mitigation strategy other than renourishment 3. Ongoing capability
VLH-3 (Sandy HMGP LOI #1503)	Install backup power at Village Hall.	Earthquake, Flood, Hurricane, Nor'Easter, Severe Storm, Wildfire, Winter Storm	Village of Lloyd Harbor, Inc.: Robert Schwarz, Village Superintendent of Public Works		Complete	Cost		1. Discontinue 2. 3. Complete
VLH-4	Assess and prioritize options to reduce erosion on Lloyd Harbor Road	Coastal Erosion, Flood, Hurricane, Nor'Easter,	Village Board		Ongoing Capability; Secured necessary permits to nourish Village	Cost		1. Discontinue 2. 3. Ongoing capability



Project #	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if complete)		Next Steps 1. Project to be included in 2020 HMP or Discontinue 2. If including action in the 2020 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
						Cost	Evidence of Success	
		Severe Storm			Park beach on annual basis as needed	Evidence of Success		
VLH-5	Assess and prioritize options to reduce vulnerability from coastal (bluff) erosion problems, and implement as funding becomes available.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	Village Board		No Progress	Cost		<ol style="list-style-type: none"> Discontinue Most of the coastal bluff areas in the Village are either, Federal, State or Privately owned
						Level of Protection		
						Damages Avoided; Evidence of Success		
VLH-6	Assess and prioritize options to protect West Neck Road from flooding, and implement as funding becomes available.	Flood, Hurricane, Nor'Easter, Severe Storm	Village Board		No Progress	Cost		<ol style="list-style-type: none"> Include in 2020 HMP Village continues looking into options to address possible roadway flooding during storms
						Level of Protection		
						Damages Avoided; Evidence of Success		
VLH-7 (former VLH-2)	Work together with the County and others to bring CRS training/workshops into the community where appropriate community officials and staff will actively participate. See following initiative.	Flood, Nor'Easter, Hurricane, Severe Storm	NFIP Floodplain Administrator		No Progress	Cost		<ol style="list-style-type: none"> Discontinue No longer a priority
						Level of Protection		
						Damages Avoided; Evidence of Success		
VLH-8 (former VLH-7)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically: <ul style="list-style-type: none"> Mitigation Education for Natural Disasters (natural hazard awareness and personal scale risk reduction/mitigation public education and outreach program) Build Local Floodplain Management and Disaster Recovery Capabilities (enhanced floodplain management, and post- 	All Hazards	Suffolk County, as supported by relevant local department leads		Ongoing Capability	Cost		<ol style="list-style-type: none"> Discontinue Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		



Project #	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if complete)		Next Steps 1. Project to be included in 2020 HMP or Discontinue 2. If including action in the 2020 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	<p>disaster assessment and recovery capabilities)</p> <ul style="list-style-type: none"> • Jurisdictional Knowledge of Mitigation Needs of Property Owners (improved understanding of damages and mitigation interest/activity of private property owners) • Create a Multi-Jurisdictional Seismic Safety Committee in Suffolk County (build regional, county and local capabilities to manage seismic risk, both pre- and post-disaster) • 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). 							
VLH-9	Reduce the white tailed deer herd to the recommended density.	Infestation	Village		Ongoing capability	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Ongoing capability; Maintain reasonable deer population with help of Wildlife Management Professionals. Activity suspended in 2019/2020 due to NYS-DEC regulations
VLH-10 (former VLH-1)	<p>Assess and prioritize options to retrofit, purchase, or relocate structures located in hazard-prone areas, and implement as funding becomes available. Specifically identified are properties in the following areas:</p> <ul style="list-style-type: none"> • Coastal erosion <ul style="list-style-type: none"> ○ Along Sea Crest Estates on sound side (working 	Flood, Nor'Easter, Hurricane, Severe Storm	Village		No Progress	Cost		1. Discontinue
						Level of Protection		2.
						Damages Avoided; Evidence of Success		3. Properties listed in description of action are privately owned - please note some of the property owner have addressed issues associated with hazard prone areas.



Project #	Project Name	Hazard(s) Addressed	Responsible Party	Brief Summary of the Original Problem and the Solution (Project)	Status (In Progress, Ongoing, No Progress, Complete)	Evaluation of Success (if complete)		Next Steps 1. Project to be included in 2020 HMP or Discontinue 2. If including action in the 2020 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
	<ul style="list-style-type: none"> with GEI consultants on bluff stabilization project). <ul style="list-style-type: none"> o Property(ies) on Forest Drive o Property(ies) on Fiddler's Green • Flood vulnerable properties include those on: <ul style="list-style-type: none"> o Beach Drive o Lloyd Harbor Road, East of Fiddler's Green o Shore Road o Mallard Drive 							
VLH-11	Work with County and PSEG (formerly LIPA) to identify roads within the municipality that are considered "critical", and to be the first priority for clearing after an event involving downed power lines.	Severe Storm; Severe Winter Storm; Hurricane; Nor'Easter	Village Board		Ongoing Capability	Cost		<ol style="list-style-type: none"> 1. Discontinue 2. 3. Ongoing capability; Work with PSEG (formerly LIPA) to identify roads within the municipality that are considered "critical", and to be the first priority for clearing after an event involving downed power lines.
						Level of Protection		
						Damages Avoided; Evidence of Success		



Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Village of Lloyd Harbor has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2014 HMP:

- None identified.

Proposed Hazard Mitigation Initiatives for the HMP Update

The Village of Lloyd Harbor participated in a mitigation action workshop in June 2020 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 ‘Selecting Appropriate Mitigation Measures for Floodprone Structures’ (March 2007) and FEMA ‘Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards’ (January 2013).

Table 9.21-15 summarizes the comprehensive-range of specific mitigation initiatives the Village of Lloyd Harbor would like to pursue in the future to reduce the effects of hazards. 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. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6 (Mitigation Strategy), fourteen criteria are used to evaluate and prioritize each proposed mitigation action. A numeric factor is assigned (-1, 0, or 1) to each criterion to provide a relative indication of the opportunities and constraints of each action. A numerical sum of the input provides the basis of the prioritization of actions wherein each action is assigned a category of Low, Medium, or High to indicate an implementation hierarchy. A High priority action indicates the jurisdiction will prioritize its implementation and apply for funding, if needed, as opportunities become available during the plan period of performance. This does not prevent the jurisdiction from implementing other ranked actions; however, this provides a snapshot of implementation priority at the time of this plan update.

Table 9.21-16 provides a summary of the evaluation and prioritization for each proposed mitigation initiative. Refer to the action worksheets at the end of this annex for more details on the high-ranked hazards identified first for implementation.



Table 9.21-15. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
2020-Lloyd Harbor-001	Shoreline Re-nourishment	1, 3, 5, 7, 8	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	<p>Problem: The Causeway that connects Harbor to Lloyds Neck is an erosional hotspot. The Village has replaced and bolstered the existing rock wave break as per engineered plans. Frequent flooding of the Lloyd Harbor Causeway cuts off access to the northern portion of the village. During hazard events this impedes emergency services from reaching residents and prevents residents from evacuating if necessary. During coastal storms and at times of extreme high tides, the Village has to close the causeway serving "The Neck" and State Park.</p> <p>Solution: Renourish the shoreline at the Causeway.</p>	Yes, evacuation route	Permitting would be necessary	Within 5 years	Village Board, State Park, Wildlife Refuge, USACE, NYS DEC	High	Causeway protected from erosion and flood damages	HMGP, USACE, Village budget	High	NSP	NR
2020-Lloyd Harbor-002	West Neck Road	1, 7, 8	Flood, Hurricane, Nor'Easter, Severe Storm	<p>Problem: West Neck Road is prone to roadways flooding. Elevating the causeway has been investigated, but has been found to be prohibitively expensive. Closures during extreme high tides are for 2-3 hours. Evacuation route for.</p> <p>Solution: Elevate roadway and complete stormwater improvements.</p>	Yes, evacuation route	None anticipated	Within 5 years	Village Board	High	Access and evacuation route maintained, flood damages avoided	HMGP, PDM, BRIC, Village budget	High	SIP	PP
2020-Lloyd Harbor-003	Village Beach stabilization	3, 4, 5, 8	Coastal Erosion	<p>Problem: The Village Beach has had recurring erosion. This is attributed to prevailing currents nearshore, resulting in sediment ending up on a nearby spit. The Village has secured permits to remove sand from the spit and return it to the beach but this is seen as a temporary solution which will need to be regularly completed, becoming costly over time.</p> <p>Solution: The Village will work with NYS DEC and the USACE to design a more permanent strategy to reduce erosion on the Village Beach.</p>	No	Permitting would be necessary	Within 5 years	Village Board, NYS DEC, USACE	High	Reduction in erosional damage, renourishment costs	USACE, HMGP, PDM, BRIC, Village budget	High	NSP, SIP	NR, PP



Table 9.21-15. Proposed Hazard Mitigation Initiatives

Project Number	Project Name	Goals Met	Hazard(s) to be Mitigated	Description of Problem and Solution	Critical Facility (Yes/No)	EHP Issues	Estimated Timeline	Lead Agency	Estimated Costs	Estimated Benefits	Potential Funding Sources	Priority	Mitigation Category	CRS Category
				Potential solutions could involve dredging of a new channel to deflect currents or construction of a groin.										
2020-Lloyd Harbor-004	Repetitive Loss Properties	1, 2	Flood, Severe Storm	<p>Problem: The Village has low lying areas that experience flooding. At least one residential property has experienced repetitive loss from flood damage.</p> <p>Solution: Conduct outreach to 10 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	No	None	3 years	NFIP Floodplain Administrator, supported by homeowners	\$1Million	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	FEMA HMGP and FMA, local cost share by residents	High	SIP	PP
2020-Lloyd Harbor-005	Coastal Erosion Monitoring Program	1, 2, 3, 5	Coastal Erosion, Hurricane, Nor'Easter	<p>Problem: The Village has shoreline which could be exposed to coastal erosion.</p> <p>Solution: The Village will participate in a county led erosion monitoring program.</p>	No	None	Within 1 year	SCWD, Village Administration	Staff time	Identification of coastal erosion	Municipal budget	High	NSP	NR
2020-Lloyd Harbor-006	Critical facilities outreach	2, 6	Flood	<p>Problem: The Caumsett State Park has critical facilities that are located in the SFHA that are not under the Village's jurisdiction.</p> <p>Solution: The FPA will conduct outreach to the facility managers to discuss their flood exposure and potential mitigation actions that could be taken.</p>	Yes	None	Within 6 months	FPA	Staff time	Facility managers made aware of flood exposure and potential flood mitigation	Municipal budget	High	EAP	PI



Notes:

Not all acronyms and abbreviations defined below are included in the table.

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
EHP	Environmental Planning and Historic Preservation
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program

Timeline:

The time required for completion of the project upon implementation


Cost:

The estimated cost for implementation.

Benefits:

A description of the estimated benefits, either quantitative and/or qualitative.

Critical Facility:

Yes  Critical Facility located in 1% floodplain

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 (NSP) – 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

CRS Category:

- Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.21-16. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
2020-Lloyd Harbor-001	Shoreline Re-nourishment	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-Lloyd Harbor-002	West Neck Road	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2020-Lloyd Harbor-003	Village Beach stabilization	1	1	1	1	1	0	0	1	1	1	1	0	1	1	11	High
2020-Lloyd Harbor-004	Repetitive Loss Properties	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2020-Lloyd Harbor-005	Coastal Erosion Monitoring Program	0	1	1	1	1	1	0	1	1	1	0	1	1	1	11	High
2020-Lloyd Harbor-006	Critical facilities outreach	1	1	1	1	1	1	1	1	1	1	0	1	1	1	13	High

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).



9.21.11 Proposed Mitigation Action Types

The table below indicates the range of proposed mitigation action categories.

Table 9.21-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Coastal Erosion		2020-Lloyd Harbor-003	2020-Lloyd Harbor-001, 2020-Lloyd Harbor-003, 2020-Lloyd Harbor-005			2020-Lloyd Harbor-003		2020-Lloyd Harbor-001, 2020-Lloyd Harbor-003, 2020-Lloyd Harbor-005		
Cyber Security										
Disease Outbreak										
Drought										
Earthquake										
Expansive Soils										
Extreme Temperature										
Flood		2020-Lloyd Harbor-002, 2020-Lloyd Harbor-004	2020-Lloyd Harbor-001	2020-Lloyd Harbor-006		2020-Lloyd Harbor-002, 2020-Lloyd Harbor-004	2020-Lloyd Harbor-006	2020-Lloyd Harbor-001		
Groundwater Contamination										
Hurricane		2020-Lloyd Harbor-002	2020-Lloyd Harbor-001			2020-Lloyd Harbor-002		2020-Lloyd Harbor-001		
Infestation and Invasive Species										
Nor'Easter		2020-Lloyd Harbor-002	2020-Lloyd Harbor-001			2020-Lloyd Harbor-002		2020-Lloyd Harbor-001		
Severe Storm		2020-Lloyd Harbor-002, 2020-Lloyd Harbor-004	2020-Lloyd Harbor-001			2020-Lloyd Harbor-002, 2020-Lloyd Harbor-004		2020-Lloyd Harbor-001		
Severe Winter Storm										



Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Shallow Groundwater										
Wildfire										

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

9.21.12 Staff and Local Stakeholder Involvement in Annex Development

The Village of Lloyd Harbor followed the planning process described in Section 3 (Planning Process) in Volume I of this plan update. This annex was developed over the course of several months with input from many Village departments, including: Public Works, the Police Department, and Building Department. The Chief of Police represented the community on the Suffolk County Hazard Mitigation Plan Planning Partnership, and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The following table summarizes who participated and in what capacity. Additional documentation on the municipality’s planning process through Planning Partnership meetings is included in Section 3 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.21-18. Contributors to the Annex

Name	Title/Entity	Method of Participation
Thomas Krumpter	Chief of Police	Primary POC, attended plan participant meetings, provided impact information, contributed to mitigation strategy
Robert Schwarz	Superintendent of Public Works	Secondary POC, attended plan participant meetings, provided impact information, contributed to mitigation strategy
James Siino	Building Inspector	NFIP Floodplain Administrator, attended plan participant meetings, provided impact information, contributed to mitigation strategy
Jared Morrissey	Lieutenant, Police Department	Attended plan participant meetings, provided impact information, contributed to mitigation strategy

9.21.13 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Village of Lloyd Harbor that illustrate the probable areas that may be 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. The maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Village of Lloyd Harbor has significant exposure.



Figure 9.21-1. Village of Lloyd Harbor Hazard Area Extent and Location Map 1

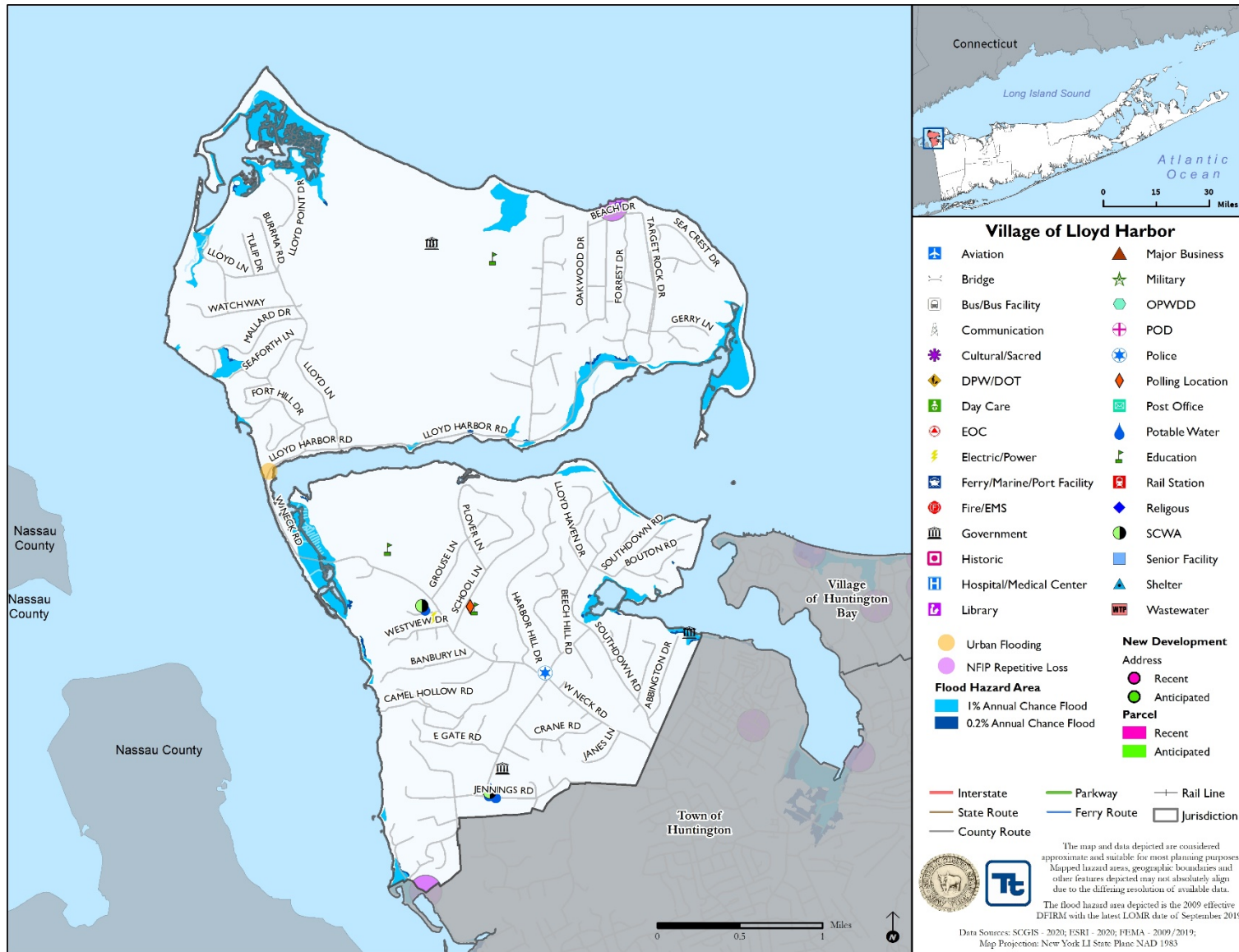




Figure 9.21-2. Village of Lloyd Harbor Hazard Area Extent and Location Map 2

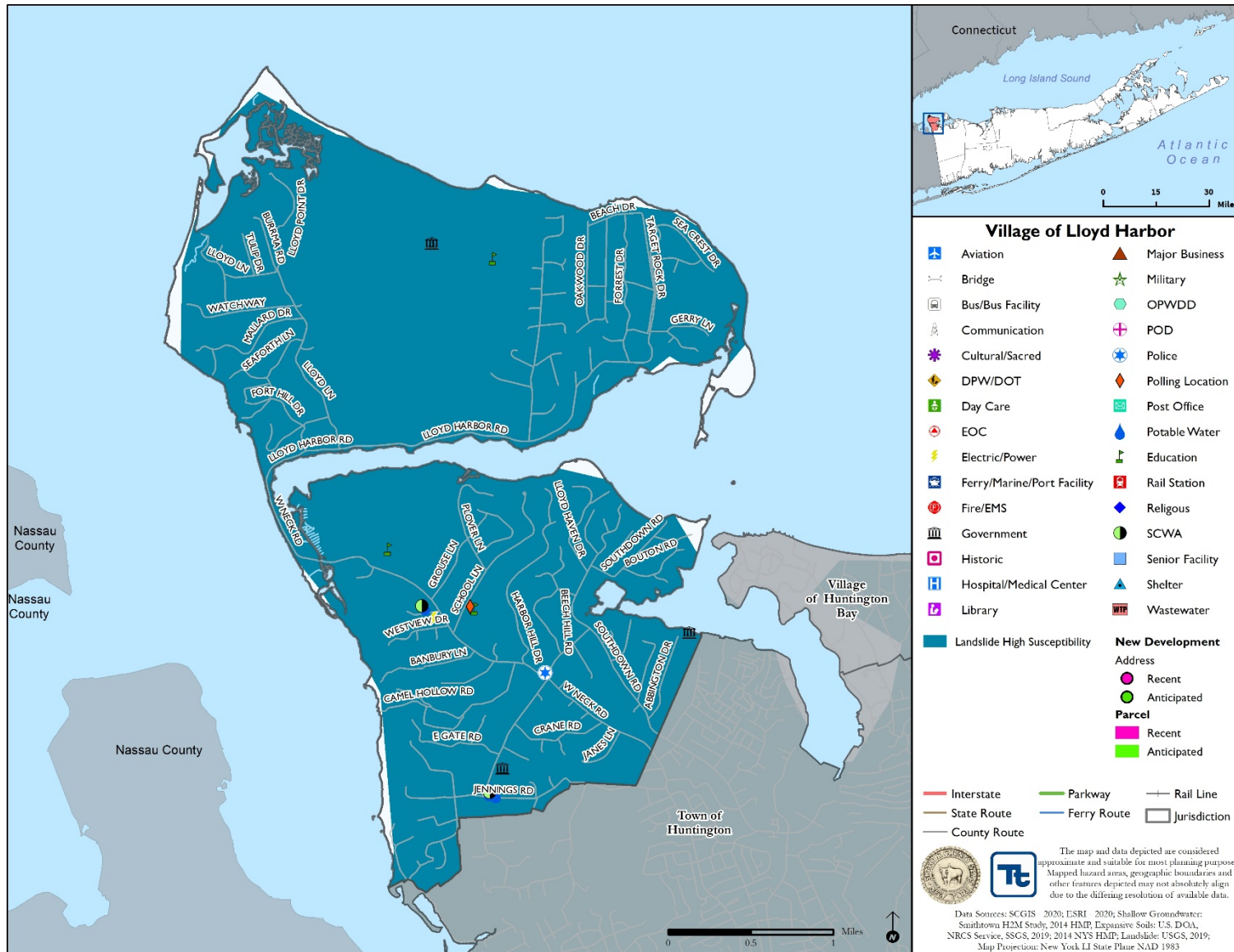




Figure 9.21-3. Village of Lloyd Harbor Hazard Area Extent and Location Map 3

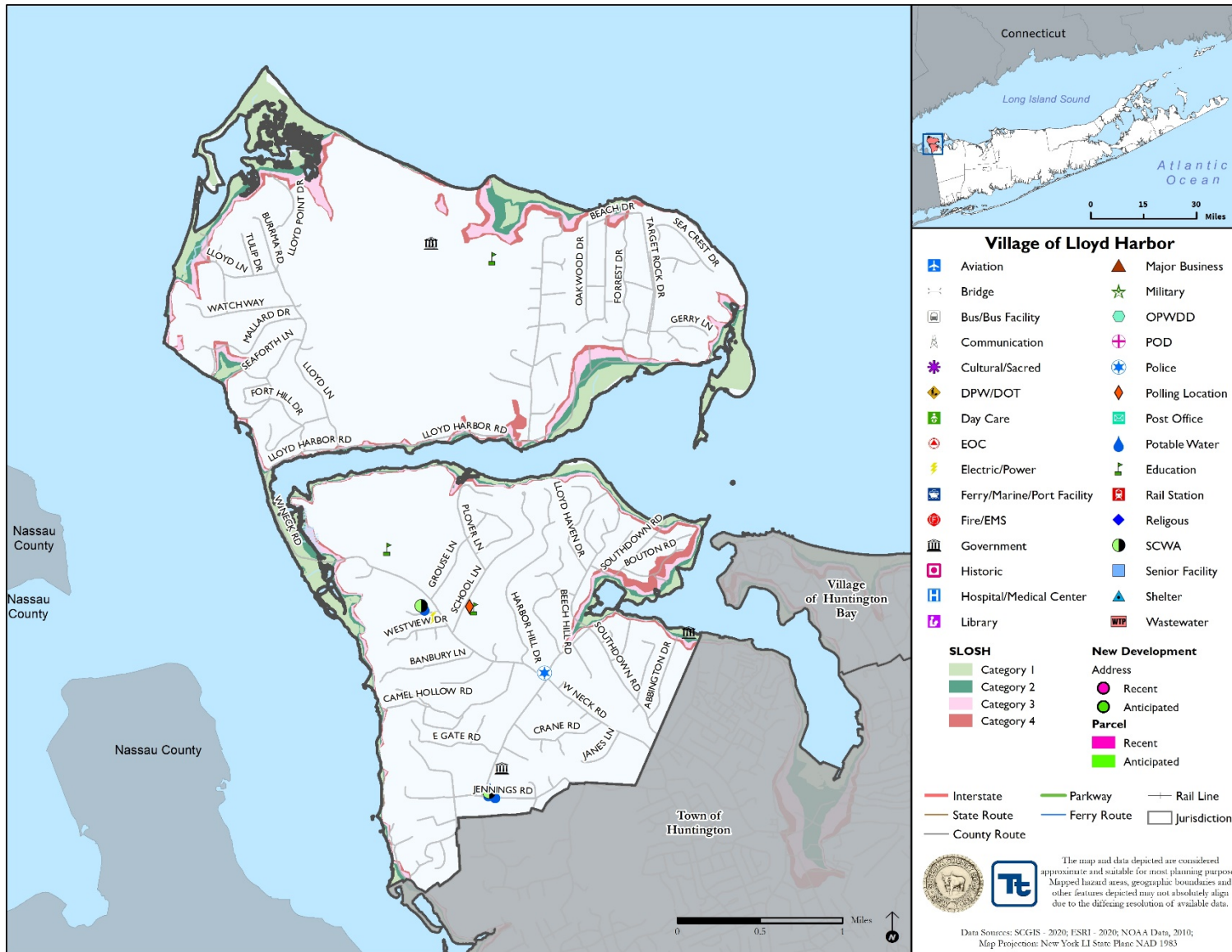




Figure 9.21-4. Village of Lloyd Harbor Hazard Area Extent and Location Map 4

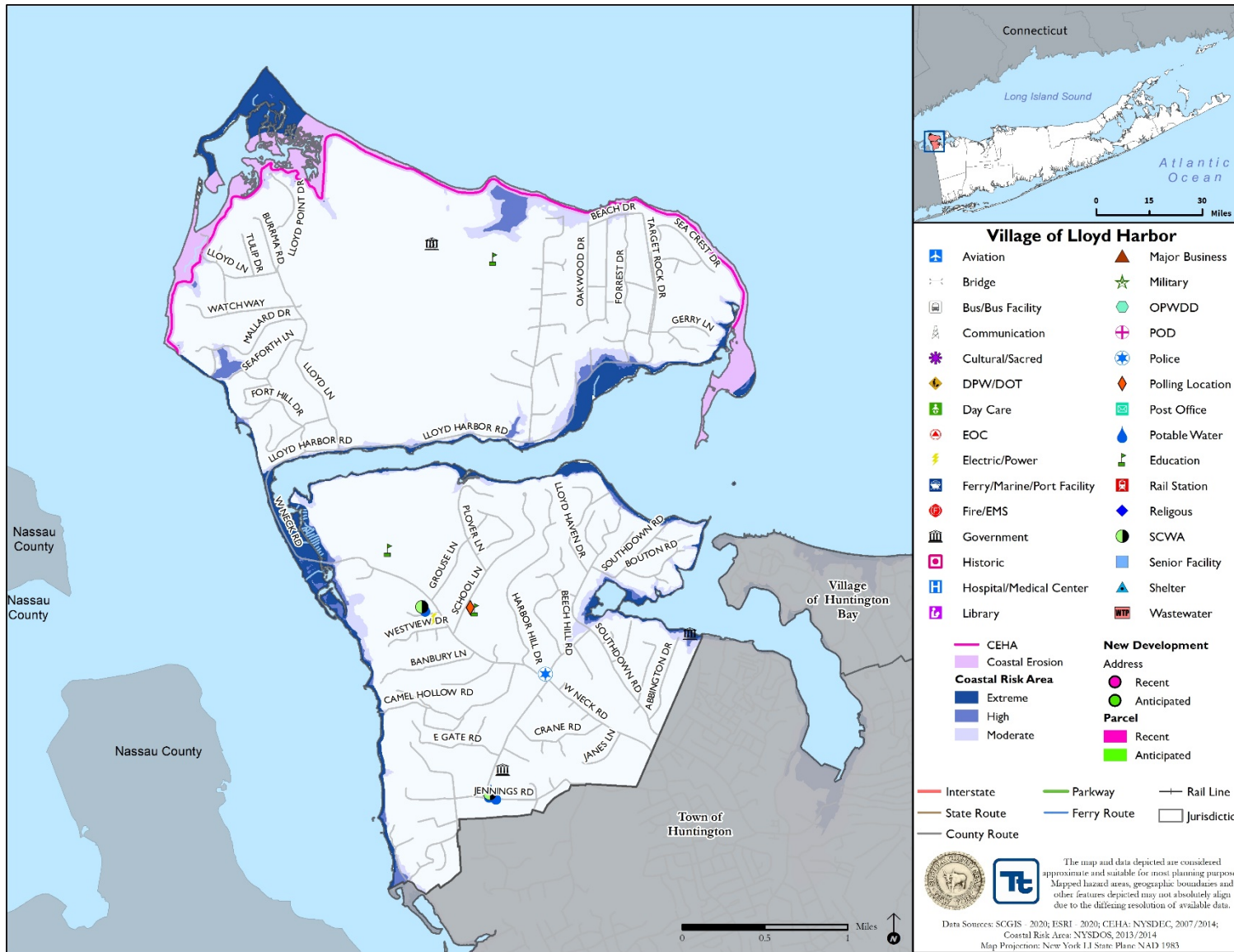




Figure 9.21-5. Village of Lloyd Harbor Hazard Area Extent and Location Map 5

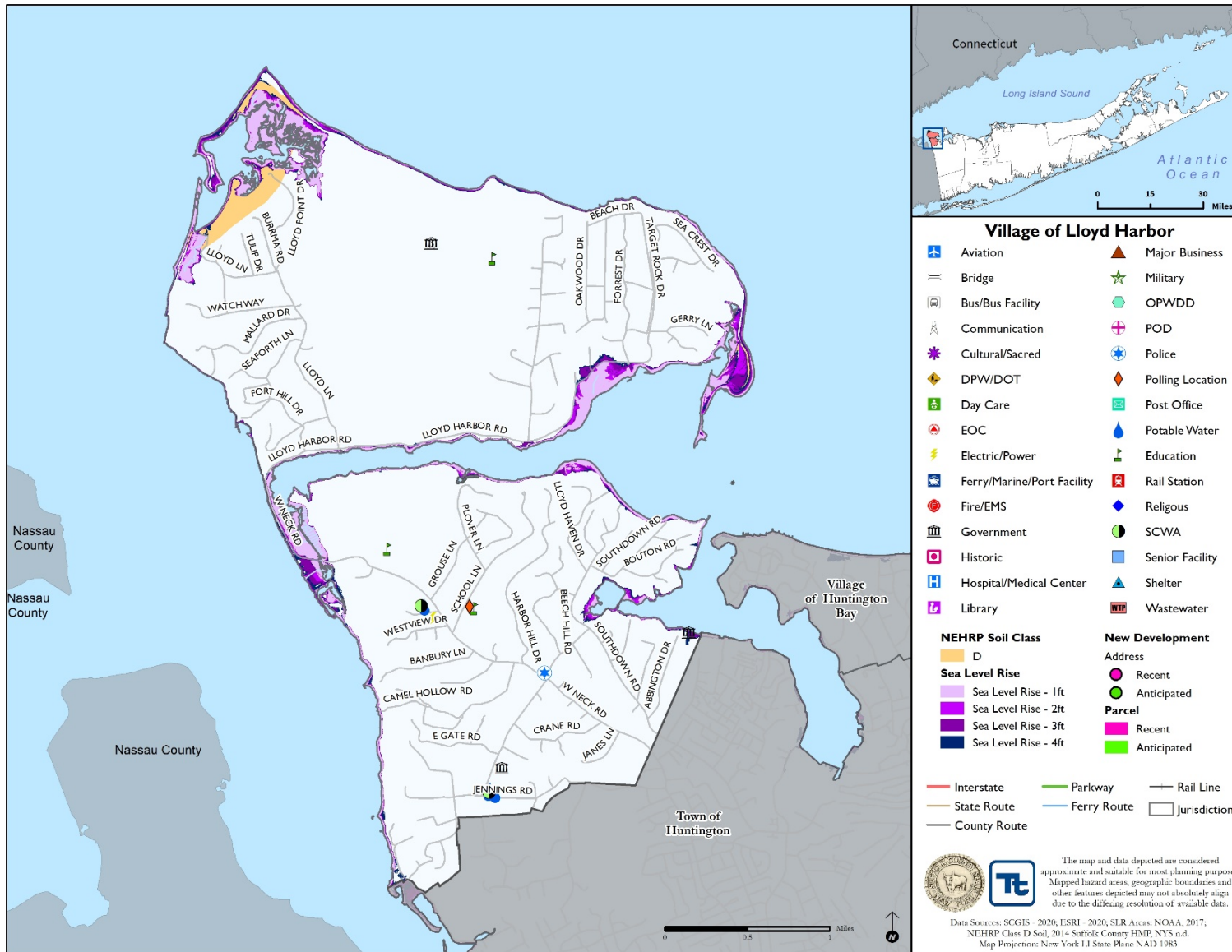
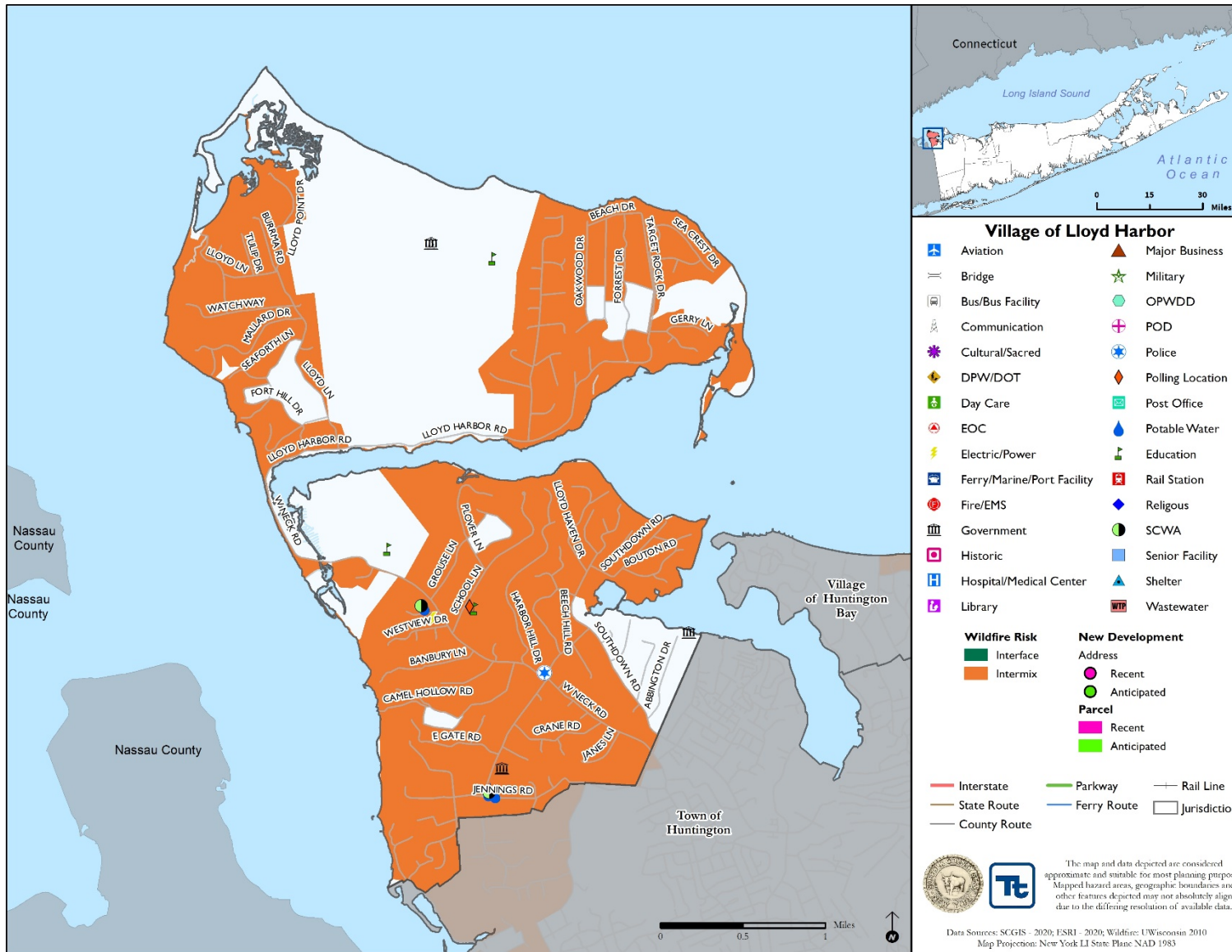




Figure 9.21-6. Village of Lloyd Harbor Hazard Area Extent and Location Map 6





Action Worksheet			
Project Name:	Shoreline Re-nourishment		
Project Number:	2020-Lloyd Harbor-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm		
Description of the Problem:	The Causeway that connects Harbor to Lloyds Neck is an erosional hotspot. The Village has replaced and bolstered the existing rock wave break as per engineered plans. Frequent flooding of the Lloyd Harbor Causeway cuts off access to the northern portion of the village. During hazard events this impedes emergency services from reaching residents and prevents residents from evacuating if necessary. During coastal storms and at times of extreme high tides, the Village has to close the causeway serving "The Neck" and State Park.		
Action or Project Intended for Implementation			
Description of the Solution:	The Village will work with the State Park, Wildlife Refuge, USACE, and NYS DEC to request and receive permits to renourish the shoreline at the Lloyd Harbor Causeway and plant stabilizing vegetation where appropriate. The Village will then carry out the renourishment.		
Is this project related to a Critical Facility or Lifeline?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	Widened beach to protect causeway	Estimated Benefits (losses avoided):	Reduces likelihood of damage to evacuation route, maintains evacuation route and only ingress/egress to the area.
Useful Life:	10 years	Goals Met:	1, 3, 5, 7, 8
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	3 months	Potential Funding Sources:	FEMA HMGP, USACE, Village budget
Responsible Organization:	Village Board, State Park, Wildlife Refuge, USACE, NYS DEC	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Remove roadway	\$500,000	Roadway cannot be removed. All access to the Neck would be lost.
	Install bulkhead along roadway	\$1 million	Without beach, bulkhead likely to be undermined/damaged
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Shoreline Re-nourishment	
Project Number:	2020-Lloyd Harbor-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects evacuation route
Property Protection	1	Protects roadway
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	0	The project will require permitting
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	Project protects ingress/egress from the Neck
Administrative	1	
Multi-Hazard	1	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm
Timeline	0	Within 5 years
Agency Champion	1	Village Board, State Park, Wildlife Refuge, USACE, NYS DEC
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	West Neck Road		
Project Number:	2020-Lloyd Harbor-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Coastal Erosion, Hurricane, Nor'Easter, Severe Storm, Severe Winter Weather		
Description of the Problem:	Coastal erosion is taking place at the end of Brown's Lane. The existing bulkhead is sinking. The roadway is low-lying and prone to flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	The Village will rebuild and replace the existing bulkhead to higher standards. The Village will raise the roadway elevation.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Roadway raised	Estimated Benefits (losses avoided):	Reduction in erosion and flooding frequency
Useful Life:	50 years	Goals Met:	1, 7, 8
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	3 months	Potential Funding Sources:	FEMA HMP, PDM, BRIC, Municipal budget
Responsible Organization:	Village Board	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Emergency Managemnt
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove roadway	\$500,000	Roadway cannot be removed. All access to the Neck would be lost.
	Install bulkhead along roadway	\$1 million	Flooding still likely
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	West Neck Road	
Project Number:	2020-Lloyd Harbor-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project maintains viability of coastal evacuation route
Property Protection	1	Project will protect roadway from flood and erosion damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Village has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm
Timeline	0	Within 5 years
Agency Champion	1	Village Board
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Repetitive Loss Properties		
Project Number:	2020-Lloyd Harbor-004		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. Areas that are known to receive flooding include the following: <ul style="list-style-type: none"> o Beach Drive o Lloyd Harbor Road, East of Fiddler's Green o Shore Road o Mallard Drive 		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 10 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1, 2
Estimated Cost:	\$1Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages	
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			



Update Evaluation of the Problem and/or Solution:	
--	--



Action Worksheet		
Project Name:	Repetitive Loss Properties	
Project Number:	2020-Lloyd Harbor-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Village has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Village.
Administrative	0	
Multi-Hazard	1	Flood, Severe Storm
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	